1-1-2011

The Application of the Lamaze Method in the Management of Acute Pain: A Comparison of Non-pharmacological Pain Management Techniques

Emily Marie Selby-Nelson
eselbynelson@gmail.com

THE APPLICATION OF THE LAMAZE METHOD IN THE MANAGEMENT OF ACUTE PAIN: A COMPARISON OF NON-PHARMACOLOGICAL PAIN MANAGEMENT TECHNIQUES

A Dissertation submitted to the
Graduate College of
Marshall University

In partial fulfillment of
the requirements for the degree of
Doctor of Psychology

Psy. D. Program, Department of Psychology

by
Emily Marie Selby-Nelson

Approved by

Dr. Marc Lindberg, Committee Chairperson
Dr. Marianna Linz
Dr. Daniel McNeil

Marshall University
August 2011

Dissertation Acknowledgments

It is a pleasure to thank those who made this dissertation possible. I owe my gratitude to my dissertation chairman, Dr. Marc Lindberg, who provided me with a perfect balance of autonomy and guidance. His willingness to share his knowledge and proficiency in the field researched created an encouraging and supportive working environment. In addition, I would like to express my appreciation to my committee members, Dr. Marianna Linz and Dr. Daniel McNeil. Their enthusiasm and support during the progression of my dissertation was most helpful and motivating. They both provided expertise that advanced my understanding of the research to another level. I would also like to thank the generous undergraduate researchers who helped in data collection. Finally, I would like to thank my husband, family, and friends for their continued and unwavering support throughout my years of study and research. Their patience and encouragement will forever be appreciated.

Table of Contents

List of Tables

List of Figures

List of Appendixes

Abstract

The Application of the Lamaze Method in the Management of Acute Pain:

A Comparison of Non-pharmacological Pain Management Techniques

Emily Marie Selby-Nelson

Pain is a primary concern in health care. Considering the limitations of pharmacological interventions, identifying the effectiveness of alternative pain management is crucial. Utilizing a pre-post design, different psychological approaches to acute pain management were tested. Participants included 85 college females who were randomly assigned to one of four conditions (Long Lamaze, Brief Lamaze, Acceptance of pain, and a Control group). Participants first underwent an Algometer pain task, then received training or control interactions once a week for four weeks, and were tested again on the pain task. Amount of time participants were able to withstand the pain administered in the Algometer tasks revealed significant differences in pain management across groups from pre to post testing. There was a significant main effect for Group as well as a significant interaction between Time and Group showing that change scores were greater in the Lamaze group than in the Control group These findings and methodologies may help direct future research toward the application of alternative pain management techniques.

Introduction

Pain is one of the most common presenting problems motivating patients to seek consultation from medical professionals in the United States (Nawar, Niska, and Xu, 2007). The economic impact of pain management has effects on patients, their providers, and society (Loeser, 1999). For example, pain as a health condition has resulted in a loss of productivity equivalent to approximately $61 billion per year in the USA (Cheatle & Gallagher, 2006). Individuals who experience acute or chronic pain on a regular basis are likely to experience additional stress regarding disability and limitations pertaining to their ability to work, function daily, and maintain general physical and mental well-being. These effects appear to be exacerbated in rural America where individuals may have limited access to costly pharmacological pain management (Kaulagekar & Radkar, 2007).

The treatment that is most often suggested to a patient in pain is pharmacological intervention (Turk & Burwinkle, 2005). Pharmacological pain management includes various types of medications that fall into the following five groups: (a) narcotics (or opioids) typically used to treat short-term acute pain; (b) muscle relaxants used to treat contractions and muscle spasms; (c) non-steroidal anti-inflammatory medications (NSAIDs) for pain and related inflammation; (d) sedatives for improved sleep; and (e) analgesics (e.g., paracetamol, or acetaminophen; non-steroidal anti-inflammatory drugs, and tramadol) that are used to treat long-term pain and control frequently occurring pain symptoms (Turk & Burwinkle, 2005).

Although these medications are often effective in the treatment of pain, they do not directly address other issues that contribute to the overall distress that many individuals in pain experience. These other issues may include anxiety, a low perception of health locus of control (the extent to which an individual believes he or she is able to

control his or her own health), a decrease in self-efficacy and confidence regarding coping, inactivity, and behavioral avoidance (Hanson, 2000). In addition, patients who are offered pharmacological treatments for pain rarely obtain sufficient training in pain management skills due to the frequent inadequate nature of practitioner knowledge regarding pain management (Seers, Watt-Watson, & Bucknall, 2006).

Other problems associated with pharmachological approaches to pain can have other negative outcomes as well. These problems can extend from patient non compliance (missing doses and accidental overdoses), to a lack of interpersonal medical support, to a decrease in self-efficacy (i.e., feelings of lack of control and inability to cope), and finally, to addiction, and substance abuse (Turk & Burwinkle, 2005). Hojsted and Sjogren (2007), in their review of the opiod pain management literature, found estimates of the development of opiod addictions ranging between 0 and 50%. Although it is difficult to estimate what the actual rates are (Ballantyne, 2007), such drug therapies have raised concerns about the use of such potentially addictive medicines. This risk is further complicated by the fact that it is difficult, if not impossible, to predetermine those patients who might misuse or abuse prescription pain medications (Gourlay, Heit, & Almahrezi, 2005).

Considering the numerous limitations of pharmacological pain management, the importance of identifying the effectiveness of alternative cognitive, affective, and behavioral pain management treatments cannot be understated. Unlike pharmacological interventions, such treatments might better offer support and training that address and optimize self-efficacy and personal control regarding health and symptom management.

Further, such techniques might be used in conjunction with medicines as a way to wean patients off the more addictive drugs.

Alternative and complementary psychological therapies have been reported to generally reduce pain and the need for pharmacological intervention (Field, 2008). Because these psychological treatments do not typically involve the administration of medications, drug addiction problems are reduced or eliminated. Because complementary and alternative techniques frequently require contact with a trained practitioner, interpersonal medical support is also provided. Likewise, the patient's active participation and acquisition of self-help skills in these techniques is theorized to reduce the likelihood of a lack of self-efficacy. Turk and Feldman (1992) identified self-efficacy as an important psychological factor in the experience of pain.

According to De Jong and Gamel (2006), alternative and complementary treatments such as relaxation offer low-risk, easy to learn, and independently achieved techniques that supplement the pain management offered by medical practitioners. Alternative and complementary therapies include, but are not limited to, the following: relaxation, mindfulness, biofeedback, massage therapy, and acceptance (Field, 2008). Other researchers have suggested additional interventions to be effective in the treatment of pain, including distraction (Wiederhold & Wiederhold, 2007), exercise (Dogan et. al., 2008), and cognitive-behavioral interventions that target the cognitions surrounding pain experiences (Turk, Swanson, & Tunks, 2008).

According to Loeser (1999), pain management may contribute to a number of beneficial outcomes including a reduction in symptoms, as well as a reduction in the costs for the individual, society, and our health care system. Loeser (1999) suggests that

the most efficient and effective model of pain management would be a biopsychosocial model wherein an individual's cognitive resources, environment, and biological health status are all taken into account and integrated into a holistic treatment model. Alternative and complementary interventions offer a solution to the need for a biopsychosocial model of pain management.

However, in the experimental evaluation of such techniques, it is problematic that the methodologies have generally used questionable controls in their design and have had great variation in the pain experiences measured. Such methodological limitations lead to the question, "What should serve as an appropriate control?" Does an untreated control constitute an experimentally valid control (Rescorla, 1967)? How has one ruled out possible placebo effects? How has one attempted to control for the same quality of pain between all the participants? It was the purpose of the present design to correct for many of these short comings in this literature.

The Lamaze Technique

One technique that has not been widely studied in recent years as a method for pain management is the Pavlovian Psychoprophylactic Method also known as the "Lamaze method" (Lamaze, 1970). Because Lamaze (1970) most clearly documented the rise, development, and utilization of this method in France, it is important to discuss his text, *Painless Childbirth: Psychoprophylactic Method* (1970). According to Lamaze, Pavlov first tested hypnosis as a way to cope with pain as it was initially considered the predominant alternative pain management technique applied in medical settings in the late 1800s. Lamaze (1970) noted that Pavlov reasoned that hypnosis was limited in that it included a passive role for the mothers as well as the large individual differences found in

hypnotic susceptibility. Despite the initial popularity of applying hypnotic suggestion to pain management, the method failed to be established as a reliable method, and Pavlov and his students searched for a more effective set of techniques. These techniques were termed the Pavlovian Psychoprophalactic Method of Birth, and when Marjorie Karmel (1959) wrote *Thank you, Dr. Lamaze,* it was called the Lamaze technique thereafter.

The "Lamaze" or Pavlovian Psychoprophalactic Method of birth was based on Pavlov's theory of counter conditioning (Lamaze, 1970). In counter-conditioning paradigms, a second incompatible response is conditioned to a previously conditioned stimulus (the first response). Lamaze (1970) gave the following example of a counter-conditioning design out of the Russian laboratories. Lamaze (1970) recounted a study by Rogov performed in 1953 wherein Rogov first paired a bell to a (43 centigrade degree) stimulus to the forearm. This procedure created the conditioned response of vasodilatation and a pleasant sensation of warmth to the forearm when only the bell was sounded. After several conditioning trials, Rogov said, "I am going to ring the bell," but presented 65 degrees centigrade to the forearm. (It should be noted that in unconditioned participants, 65 degrees (about 149 F) produces vasoconstriction and a very strong perception of pain.) The conditioned participants did not show vasoconstriction and pain responses to the 65 degree stimulus, but rather, responded with vasodilatation and the pleasant perception of warmth. This outcome was a clear demonstration that counter conditioning was successful in the elimination of pain and basic physiological pain responses. (It should be cautioned, however, that this study was a secondary source, the result has not been replicated, and we are uncertain of the details of the methods and control groups.)

In the Lamaze method, relaxation, staring at a focal point, and breathing patterns were used as conditioned responses. Repetition, or conditioning, was said to be a key element in this conditioning process and was noted to strengthen the secondary conditioned responses to images of contraction elicited by a coach utilizing what Pavlov considered to be the second signal system of language. It should be noted that the focal point should be selected such that it already produces feelings of well-being, thus carrying sensory preconditioning to the conditioning session.

Since the Lamaze method's introduction, research (although limited) has supported its application. Klusman (1975) conducted a study observing the effects of participation in Lamaze childbirth courses in a study comparing a control group with a Lamaze group. It was found that those individuals who received education and training in Lamaze experienced a reduction in fear and anxiety and consequently experienced a reduction in pain. Mood and pain perception have both been found to be improved in individuals who received training in the Lamaze method (Leventhal et. al., 1989). However, the "do nothing control" group employed in these studies did not allow one to determine just why the differences occurred. (See Rescorla (1967) for a discussion of appropriate controls in conditioning paradigms.) The effects could have been produced from education, relaxation, the focal point, the formation of counter-conditioned responses, or mere interaction with the "coaches" in a safe secure environment.

A number of modern clinical approaches were anticipated by the Lamaze method. As applied to childbirth, these methods typically consist of giving instruction pertaining to the nature and process of labor and delivery (psychoeducation related to pregnancy and

birth), visual focusing (meditation), breathing techniques, muscle relaxation, the use of a training coach (social support), and cognitive restructuring (Wideman & Singer, 1984).

Distraction as used in pain management has been demonstrated to be effective in reducing pain (Dahlquist, McKenna, Jones, Dillinger,Weiss, & Ackerman, 2007). Distraction, as used in the Lamaze method, is introduced to help to divert a participant's attention from the pain she is experiencing by requiring the patient to concentrate on her breathing patterns and a focal point. It may be effective because pain perception requires attention for the perception to occur and because, at any one time, there is a limited amount of attention that may be placed on one situation (McCaul & Malott, 1984). Visual focus and active breathing maintain attention by having individuals actively participate in a purposeful, deliberate behavior.

Breathing, as a form of relaxation, has been theorized to decrease pain perception (De Jong & Gamel, 2006). Breathing relaxation is a form of focused rhythmic breathing that has been shown to slow mental and physical activity in order to reduce responses of the sympathetic nervous system (Kwekkeboom & Gretarsdottir, 2006). The Lamaze method includes advanced breathing techniques. The method involves the use of deep and slow breaths that help to relax individuals by increasing oxygen and decreasing tension. The Lamaze method also includes a breathing pattern wherein individuals take short shallow breaths. These shallow breaths increase and decrease in repetition patterns called breathing pyramids.

Progressive muscle relaxation, another key element of the Lamaze technique, is a form of relaxation that aims to physically and mentally reduce body tension. Progressive muscle relaxation is used during Lamaze training to teach individuals how to relax and to

identify the distinct differences between sensations of tension and relaxation. Subjects learning progressive muscle relaxation are trained to isolate each muscle body area (head, face, neck, shoulders, arms, chest, stomach, buttocks, legs, and feet) by focusing their attention on each area and simultaneously tensing each area for several seconds and then relaxing the specific area. When compared to other interventions, progressive muscle relaxation has been found to be more effective and to contribute to pain and distress reduction by reducing the amount of tension experienced by individuals (Kwekkeboom & Gretarsdottir, 2006).

Visualization is the use of a focal point that helps individuals relax, refocus, and visualize a representation of an object or symbol that is relevant and meaningful. According to Turk, Swanson and Tunks (2008), guided imagery and visualization may help individuals in pain to achieve a sense of control, relax, and distract themselves from pain perceptions. This visualization is said to aid in pain management by guiding the focus away from the experience of pain and onto a stimulus that has previously prompted a relaxed and positive sensation or feeling.

Social support has also been identified as a contributing factor in the successful management of medical illness and pain reduction. According to Hurwitz, Goldstein, Morgantern, and Chiang (2006), high levels of social support were found to be related to clinical reductions in pain and disability. The support of others encourages patients to be motivated toward treatment and recovery and may minimize isolation and hopelessness. The Lamaze method utilizes social support in the form of coaches who offer support and collaboration in pain management efforts.

Although the Lamaze method has remained in continuous use and its subcomponents have been emphasized in research, it seems surprising that there has been a reduction in both the number of individuals utilizing this method and in the emphasis given to this method by practitioners in preparing women for childbirth (Strote, 2007). Most research in the field of Lamaze has also diminished and is now dated, and most of the original studies were merely correlational. Current practices in Lamaze have also changed since its original introduction. The Lamaze method is now offered in a number of formats, including a series of classes (traditional Lamaze classes), brief training modules (one training session), and brief review in general birth preparation classes. Many courses are also directed toward both parents and prepare families for birth and parental life in general. Although there are few traditional Lamaze options, a more general philosophy of Lamaze continues to be applied in birth settings.

Could the Lamaze method be applied to general acute pain and its application broadened to other areas of pain management? Given that the Lamaze method combines reportedly effective techniques that have been theorized to be efficient and reliable, it was considered worthwhile to test its effectiveness. However, it was deemed necessary to disentangle the utilization of these techniques with additional tests in order to explore the assumption that conditioning trials are necessary to the Lamaze technique's supposed success.

Acceptance of Pain

The above techniques are not the only psychological interventions that have been proposed as effective in the treatment of pain. Acceptance is an established pain management technique that has been used to assist individuals through chronic pain

(Hanson, 2000). Acceptance as a pain management procedure includes directing attention toward values and goals (exercise, attending events, etc.) rather than focusing on the experience of pain. Acceptance of pain as a normal experience leads individuals to shift their attention toward meaningful goals and encourages individuals to act in spite of pain. Acceptance of pain serves as a contrast to the philosophy of the Lamaze method. Although the Lamaze method contains techniques designed to decrease pain perception, acceptance offers a different approach that embraces pain as a normal experience and does not focus on the elimination of pain. Thus, because acceptance has been promoted as one of the newer and more successful cognitive strategies in the psychological literature, it was selected as an important contrast group to include in the proposed study. If the older Lamaze technique is inferior to the newer techniques, then it is only of academic and not pragmatic significance to determine why the Lamaze technique works. If, however, it is superior to the newer techniques, then its continued study and use is more than warranted in the general literature of pain management.

Study Design and Logic

Integrating traditional Pavlovian methodologies and approaches to pain reduction with modern clinical techniques affords several methodological and conceptual advantages. A basic strength of conditioning approaches is that they afford several precise ways of analyzing which psychological mechanisms mediate the effectiveness of conditioning techniques. These methods may be superior to many traditional clinical methodologies that merely involve traditional pre-post designs or compare an experimental group with a control group that does not receive treatment. Thus, their

weakness is that they do not specify which psychological mechanisms are necessary and sufficient conditions for producing change.

Methodological sophistication is a cornerstone of conditioning research. Rescorla (1967) dealt with these issues identified in the conditioning literature. Rescorla was interested in determining what constitutes an appropriate control group to demonstrate that "conditioning" has occurred. According to Rescorla (1967), the control groups previously proposed were inadequate in that they unsuccessfully attempted to control for nonassociative effects. Rescorla suggested that a "true control" should retain as many possible aspects of the experimental procedure while excluding the CS-US contingency. Thus, traditional "do nothing" control procedures and ABA designs were not deemed appropriate for the evaluation of classical conditioning effects.

The above discussion leads to two very different sets of hypotheses. The conditioning hypothesis, on the one hand, would predict that participants in the Long Lamaze condition would show the greatest pre-post differences in pain tolerance. The conditioning hypothesis would also predict that the Short Lamaze and Acceptance conditions would be inferior to the Long Lamaze condition, but superior to the Rescorla control if they are effective pain management strategies with specific mechanisms of change. This prediction is based on non-associative placebo effects wherein participants dealt with pain in the context whereas the Rescorla control did not. The acceptance hypothesis, on the other hand, would predict that focusing on and actively dealing with the pain as in the two Lamaze conditions might lead to lower pain tolerance scores than the Rescorla control. In addition, the Rescorla control would be inferior to the

Acceptance group which would produce the greatest increases in pain tolerance by having participants focus on it.

Method

Participants

Female participants were recruited from a University introductory psychology research pool and included 151 individuals. They were offered reimbursement for their participation in the form of extra credit for their course. Participants averaged 18 years of age with a range of 18 to 38. Participants were female in order to remain consistent with other populations who have applied Lamaze in pain management and to eliminate possible sex differences in the data. Participants who lasted longer than 5 minutes on the first pain task with the Algometer were dropped from the study, resulting in the exclusion of 26 participants. This procedure was included to eliminate ceiling effects and to minimize the occurrence of habituation to pain stimuli and to avoid any potential risk for tissue damage to participants who would pass the suggested five-minute pain task duration. Participants were also dropped if they did not attend subsequent sessions, resulting in 40 participants being eliminated in this study. Eighty-five participants completed the study.

Trainers

The trainers included the senior author and eight senior-level psychology students receiving credit for a senior capstone research seminar. Trainers were trained in the Lamaze technique by a nurse at a local hospital who specialized in the Lamaze Technique as well as childbirth education or by the senior author. Training in Lamaze consisted of a two-hour training session followed by repeated practice. They also were trained in

Acceptance by the senior author. This Acceptance training consisted of familiarizing researchers with general concepts of acceptance as a cognitive intervention through readings, discussions, and demonstrations (Hayes, Strosahl, & Wilson, 1999). Each week during the study period, the trainers met as a group and were briefed in one-hour sessions on each week's protocol. They were provided with scripts and written protocols to review and use in each session.

Apparatus

Because of the variability in pain experiences, a study of pain coping requires the production of consistent pain experiences across participants. The Algometer pressure device has been used as a way of analytically producing pain and acts as a dependent variable that can make the analytic study of therapeutic mechanisms possible (Rainwater & McNeil, 1991). The Algometer pressure device is an apparatus that places a weighted wedge on the middle finger of a participant's non-dominant hand (Rainwater & McNeil, 1991). The blade of the plastic wedge is placed over the participant's finger and a weight is placed on top of the wedge. This procedure produces a building acute pain experience until the participant cues for the procedure to end when he or she has reached his or her pain threshold (limit of ability to cope with the pain). During the pain task used in this study, a weight of 750 grams was used during a pain task with a time limit of five minutes. According to Rainwater and McNeil (1991), individuals may become habituated to pain experiences after five minutes. If this were to occur, there would be a potential for participants to last beyond the point of habituation, creating ceiling effects making it difficult to assess pain tolerance past that time period. In addition, the five-

minute time limit was enforced to avoid possible harm to participants who might last longer than five minutes.

Procedures

Participants were divided into four groups: (a) 21 individuals receiving long Lamaze training, (b) 19 individuals receiving brief Lamaze training, (c) 25 individuals receiving training in acceptance, and (d) 20 individuals serving as a control. The four research groups were counterbalanced with each trainer conducting training sessions with participants from each of the overall groups. Each trainer carried out his or her own schedule wherein he or she conducted weekly one-hour sessions for each of the four groups for five weeks. The overall four groups were broken down into smaller groups that typically included three to five participants in order to allow for more manageable and effective training. Participants were reminded of their sessions through e-mail.

Participants were instructed to complete demographic questionnaires and informed consents on the first day (see Appendix 1). Participants' history and current experiences of acute and chronic pain were collected. Participants were taken one at a time to a different room where they were tested on the Algometer. During each pain task (pre and post) participants were instructed to use a Likert-scale rating (0=no pain to 5=most possible pain experienced) to indicate pain perception (see Appendix 2). They also were instructed to use a Likert-scale rating of anxiety similar to the above to note their level of anxiety (see Appendix 3). These measures were taken before and after each pain task to observe participants' expected and actual pain and anxiety ratings. To assess pain tolerance, participants were instructed to terminate the pain task by touching a laminated stop sign when the pain that they experienced became unbearable or reached a

degree in which they would stop a painful situation in their actual life. Pain tolerance and ability to manage pain were defined by the duration of time that passed before a participant chose to have the weight removed from their finger. The researchers of this study did not assess pain threshold because the potentially intrusive act of reporting threshold during the pain task would interrupt any active coping strategy, thereby providing a confound to the training conditions.

The present study utilized pre-post design wherein participants first participated in an Algometer pain task, received training or supportive interaction, and then went through the same pain task after training. Participants were randomly assigned into four groups, each of which included specific protocols (see Table 1) as follows:

Psychoprophylactic Lamaze method (G1): In this condition, participants obtained training in Lamaze techniques including the use of focal points, patterned breathing, and progressive muscle relaxation. In the first session and as with all conditions, participants were first tested on the Algometer pressure device. In addition to the above-mentioned surveys and consents, participants also received information about the use of focal points in pain management. They were encouraged to practice and bring in a focal point for the following session. In Session two, they reviewed the use of focal points, received information on patterned breathing, and progressive muscle relaxation, and performed in-session practice exercises. They were encouraged to practice these skills each day until the following session. In Session three, participants reviewed and completed in-session practice exercises of focal point use, patterned breathing, and progressive muscle relaxation. They were again encouraged to practice these skills between this session and the next. In Session four, participants reviewed and completed

in-session practice exercises of focal point use, patterned breathing, and progressive muscle relaxation. They were encouraged to practice these skills between this session and the next. In Session five, participants again filled out surveys and were tested again on the Algometer. During this procedure, however, participants were instructed to use the Lamaze techniques that they had practiced over the previous sessions. They were instructed to utilize these techniques when coping with pain during the final Algometer procedure. A more thorough description of this protocol is outlined in Appendix 4.

Brief Lamaze method (Group 2/G2): In this condition, participants received college and career advising during the first three sessions, followed by one Lamaze training session, and then went through the final Algometer procedure with instructions analogues to Group 1. In Session 1 (week 1), participants completed the Algometer procedure and were encouraged to bring in ideas for discussion (topic: academic majors). In Session 2 and 3, participants collaboratively discussed majors and related information. During the first three sessions, participants were encouraged to practice focusing on their major and related concepts between sessions. In Session 4, participants received brief training in the Lamaze method that included the use of focal points, patterned breathing, and progressive muscle relaxation and encouraged to practice this last week. During the final session (fifth session), the participants in this group were instructed to utilize the Lamaze method in their efforts to manage acute pain during the Algometer procedure. A description of the procedural protocol for this group is outlined in Appendix 4.

"Rescorla Control" group (Group 3/G_3): According to Rescorla (1967), the appropriate control for conditioning is a group that receives all of the same fundamental elements of the conditioning episodes (in this case, the Psychoprophylactic Lamaze,

group one) but lacks overt pairing with the Unconditioned Stimulus (pain task). In this study, the "Rescorla Control" participants received the same four weeks of Lamaze training, learning deep breathing, breathing patterns, focal point use, and progressive muscle relaxation, but they were not prompted to pair this training with future pain management and were told the training would be used for general stress management. Participants in this group also received a final Algometer test; however, they were not instructed to use the Lamaze training or to integrate in their efforts to manage pain during the Algometer procedure. Therefore, the control group received Lamaze training without being paired with pain management for the final pain task. A thorough description of the procedural protocol for this group is outlined in Appendix 5.

Acceptance group (Group 4/G_4): Participants in this group used acceptance as a pain management technique. Identical to the above three groups, participants were tested on the Algometer pressure device and filled out surveys on the first day. They then received four sessions of training in acceptance as recommended by Vowles and McCracken (2008). During Sessions 1, 2, 3, and 4, participants were trained to accept the presence of pain and stress while minimizing attempts to control or avoid pain. By accepting pain, participants may be less likely to focus on pain reduction and may redirect their attention away from labeling the pain as "painful." In Session 5, participants were tested in a fashion similar to the above groups except that they were instructed to utilize the acceptance skills to manage their pain experienced. A thorough description of the procedural protocol for this group is outlined in Appendix 6.

Participants in all four groups were instructed to practice the interventions that they had learned during training sessions between meetings. Practice was an important

aspect to encourage and monitor due to the importance of practice in learning and conditioning. Participants recorded the amount of time spent practicing each day by completing a weekly practice log. The measurement of time was recorded in seconds and totaled for analyses. Table 3 summarizes the descriptive statistics of overall practice time for each group.

Results

A 2 (Pre versus Post Test) by 4 (Group) univariate analysis of variance (ANOVA) with test as the subject factor was conducted to compare pain management training effectiveness across groups. Preliminary analyses were performed and confirmed the assumption of normality. A significant main effect for the time one that could withstand the painful pressure was found, F (1, 81) = 25.71, $p < .001$, indicating a significant difference in pain management across groups from the initial pain testing time (M = 85.54, SD = 7.95) to the post-intervention pain testing time (M = 151.93, SD = 14.50). There was a significant main effect for Group, F (3, 81) = 5.10, p = .003, indicating a significant difference in pain management between groups. There was also a significant interaction between Time and Group, F (3, 81) = 3.88, p = .012. A Bonferroni post hoc analysis was conducted and found the only significant difference to be between the pain management scores of participants in the Long Lamaze group (M = 178.02, SD = 19.39) versus the Control group (M = 71.13, SD = 19.87). There were no other significant differences in pain management across groups. Table 2 summarizes the mean pain management ability (defined as the time in minutes spent in each pain condition) of participants in each group during the pre and post pain tasks. Figure 1 summarizes the differences in pain management (tolerance) by group during the post pain task.

Pain experiences including current acute pain, current chronic pain, past acute pain, and past chronic pain were also analyzed. It was expected that these variables would predict participants' ability to manage pain during the pain task. A linear regression was conducted to observe the effect that pain experiences had on pain management ability. Not one of these variables was found to reliably predict pain management ability, $r^2 = .024$, F (4, 67) = .39, $p > .05$.

Considering that anxiety has been found to exacerbate pain, the role of anticipatory anxiety and predictions of painful experiences were also analyzed to determine its effect on actual reports of anxiety and pain in the context of the present study. During the pre pain test, anticipatory anxiety was positively related to higher ratings of expected pain, $r(82) = .72$, $p < .01$; actual anxiety, $r(81) = .38$, $p < .01$; and actual pain, $r(81) = .38$, $p < .01$. Predictions of higher levels of pain were also positively related to higher ratings of anticipatory anxiety, $r(82) = .72$, $p < .01$; actual anxiety, $r(81) = .28$, $p < .01$; and actual pain $r(82) = .45$, $p < .01$. During the post pain test, anticipatory anxiety was positively related to higher ratings of expected pain, $r(83) = .71$, $p < .01$; actual anxiety, $r(83) = .64$, $p < .01$; and actual pain, $r(83) = .39$, $p < .01$. Predictions of higher levels of pain were also positively related to higher ratings of anticipatory anxiety, $r(83) = .71$, $p < .01$; actual anxiety, $r(83) = .53$, $p < .01$; and actual pain $r(83) = .52$, $p < .01$.

Discussion

It was found that the subjects who received training in Long Lamaze were the only group to demonstrate a significant difference in pain management when compared to the control group. This outcome suggests that training in the Lamaze method improves

an individual's ability to manage general acute pain at a superior level when compared to a proper control group. No significant differences, however, were identified between long Lamaze and the other comparison groups. Although the conditioning hypothesis predicted (and the trends in the data showed) that the long Lamaze group would demonstrate superior pain management ability when compared to the brief Lamaze and acceptance interventions, these differences were not significant. Participants who received training in acceptance and brief Lamaze skills did not vary from one another on pain management ability, nor did they differ significantly when compared to the control group.

Anticipatory anxiety and predictions of high levels of pain correlated significantly with actual reports of anxiety and pain. Considering this finding, effective treatments targeting anxiety management may be helpful in minimizing the effects of such anxiety prior to painful procedures or flares of recurrent acute pain. As mentioned earlier, the Lamaze method includes a number of techniques that have been successful in treating anxiety.

The present study had several limitations that may have affected the outcome of the research. The eight researchers or trainers in this study were undergraduate research assistants participating to gain experience in research. Such inexperience and variation in training could have introduced significant amounts of error variance. The most significant problem in the present design was the lack of practice shown by the participants. The amount of practice (average of four minutes per day) reported by participants in the present study was probably not sufficient when compared with the recommended 30 minutes of practice for 30 minutes a day for 30 days to reach the

requirements of conditioning in the Lamaze technique. Conditioning contra-prepared (Seligman & Hager, 1972) associations such as this typically take several trials to achieve good conditioning (Kimble, 1961), and it might have been the case that we were operating at basement effects of "trials" to unequivocally demonstrate conditioning. Therefore, the weak effects of Long Lamaze might have simply come from lack of practice. Future research is encouraged to control for these limitations by paying for participants to return daily for daily practice sessions in order to ensure sufficient adherence. Further, one also needs to examine whether these techniques can be used with chronic pain as well.

The present study's most important contribution might have been in the introduction of a research paradigm with appropriate controls to study the claims of different psychological interventions in pain reduction. Perhaps the most interesting results came from the Short Lamaze and Acceptance training conditions. Here typical alternative techniques were not significantly different from the control group. The amount of practice in these techniques was equal or greater than typically given in similar interventions in the literature, yet the effects were not significant when compared to appropriate controls. Thus, claims for such interventions in the treatment of pain need to be looked at anew, and the present methodology provides specific ways in which this research might be done. This study also supports the efficacy of the Lamaze method in the application of general acute pain management. However, further tests of adequate conditioning need to be assessed. At a minimum, however, this result suggests that this technique may be beneficial to pain patient populations outside of pregnancy and birth.

Table 1.

		Groups:			
		Psychoprophylactic Lamaze Group (G1)	Brief Lamaze Group (G2)	Rescorla Control Group (G3)	Acceptance Group (G4)
Components by session:	Session 1	Algometer procedure; Lamaze training: focal point, progressive muscle relaxation, and patterned breathing training	Algometer procedure; advising/supportive interaction	Algometer procedure; Lamaze training: focal point, progressive muscle relaxation, and patterned breathing training	Algometer procedure; training in acceptance
	Session 2	Lamaze training: focal point, progressive muscle relaxation, and patterned breathing training	advising/supportive interaction	Lamaze training: focal point, progressive muscle relaxation, and patterned breathing training	Training in acceptance
	Session 3	Lamaze training: focal point, progressive muscle relaxation, and patterned breathing training	advising/supportive interaction	Lamaze training: focal point, progressive muscle relaxation, and patterned breathing training	Training in acceptance
	Session 4	Lamaze training: focal point, progressive muscle relaxation, and patterned breathing training	Lamaze training: focal point, progressive muscle relaxation, and patterned breathing training	Lamaze training: focal point, progressive muscle relaxation, and patterned breathing training	Training in acceptance
	Session 5	Algometer procedure; receive instructions to use this intervention in pain management (focal point, progressive muscle relaxation, and patterned breathing)	Algometer procedure; receive instructions to use this intervention in pain management (focal point, progressive muscle relaxation, and patterned breathing)	Algometer procedure; do not receive instructions to use this intervention in pain management	Algometer procedure; receive instructions to use acceptance for pain mangament

Table 2

Pre and Post Pain Management Duration by Group

Information	Long Lamaze	Brief Lamaze	Acceptance	Control
Mean time in pain task 1	117.05	87.16	69.20	68.75
Mean time in pain task 2	239.00	132.21	163.00	73.50

Measurement of time in minutes

Table 3

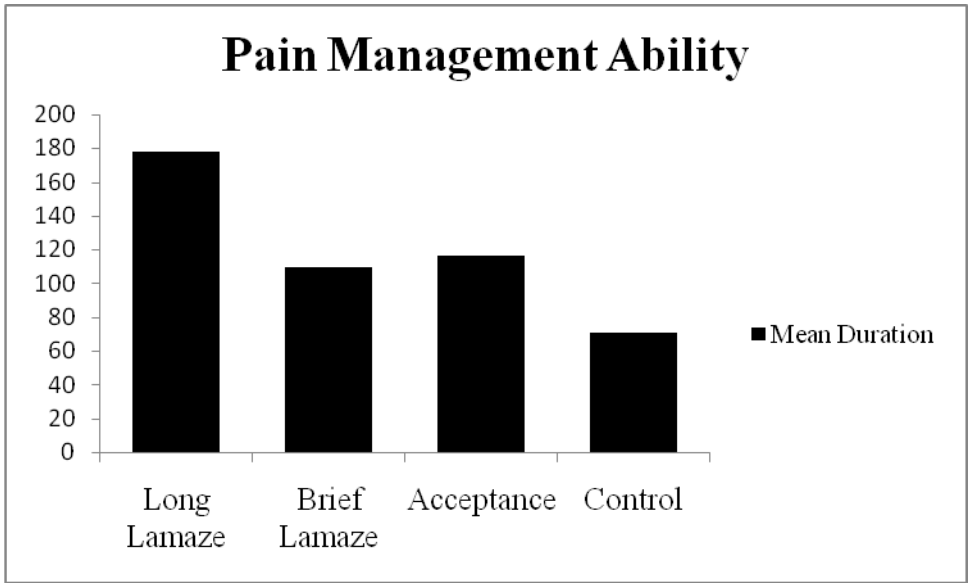
Descriptive Statistics for Mean Practice Time (in minutes) by Group

Group	Mean Practice Time	SD	Range	Median
Long Lamaze	111.08	92.25	299	97
Brief Lamaze	99.21	161.36	605	32.5
Acceptance	111.28	70.91	230	102
Control	173.84	116.14	359	155

Figure Captions

Figure 1. Mean Pain Management Ability (duration in post pain task) by Group

Figure 1


Pain Management Ability
200
180
160
140
120
100
80
60
40
20
0
Long Lamaze
Brief Lamaze
Acceptance
Control
Mean Duration

Appendix 1

Demographics Form:

Date:_____ Time: _____

Participant number:_____

Participant name: _____

Date of Birth: _____ Age: _____

Ethnicity: (circle)

1. Caucasian 2. African-American 3. Hispanic
4. Asian 5. Native American
6. Other: _____

Handedness: (circle)

1. Right Handed 2. Left Handed 3. Ambidextrous (i.e. use both hands equally well)

Hand preference if ambidextrous: (circle)

1. Right Hand 2. Left Hand 3. Not Applicable

Rank in school: (circle)

1. Freshman 2. Sophomore 3. Junior 4. Senior

About how many hours of sleep did you get last night? _____

About how many hours of sleep do you usually get a night? _____

How many caffeinated beverages have you had today?_____

How many caffeinated beverages do you normally have by this time? _____

What was the day of your last period? Day:_____

- Or weeks into cycle _____

Do you currently have chronic pain (pain experienced over a long period of time)?

_____

- If yes,
  what?_____

If you do not have chronic pain now, have you ever experienced such pain?

_____

- If yes, what/how?
  _____

  _____

- When?_____

Do you currently have acute pain (sudden onset of pain that lasts a short period of time)?

_____

- If yes, what/
  how?_____

  _____

If you are not currently experiencing acute pain, have you ever experienced acute pain (frequency)?

- If yes, what/how?
  _____

  _____

Appendix 2

Pain Rating Scale

(0 = no pain) (5 = most possible pain)

Appendix 3

Anxiety Rating Scale

(0 = no anxiety) (5 = most possible anxiety)

Appendix 4

Long Lamaze Group Protocol

Session One (approximately 55 minutes)

- Algometer procedure

Focal Point:- "For our next session on _____ at _____, please bring in an object that you can use as a focal point. A focal point is an object that you deliberately direct your attention toward. This type of concentration helps you center your mind, in order to better relax and reduce stress. Strong focal points are objects that have some kind of meaning or personal relevance for you. Some examples are: religious articles (crosses, rosaries, etc.), pictures of loved ones or a pet, or a picture of your favorite place."

Progressive relaxation: Have them tense and then relax the scalp, face, neck, shoulders and arms and hands, chest stomach & back, upper legs, lower legs and feet. Have them imagine a pulse of relaxation entering these regions when they relax.

Assignment:

- "Between now and our next meeting on _____ at _____, I would like you to do some simple practicing at home. Each day, spend 10 minutes practicing your concentrating on your focal point and doing the relaxation exercises we worked on. The more you practice, the easier it will be for you to reach that state of relaxation when you are under stress." Discuss specific times when each of them is going to do the practice. Have them E-mail you every day on their efforts. A simple sentence on their part will do.

End day one Long Lamaze

Session 2 Protocol

Note: In this Lamaze condition we are telling them that they are learning pain management techniques where we will be putting the different skills together to learn how to better combat pain.

Long Lamaze Protocol

Session Two

How many days did you practice? (Put these data in their file.)

How long per session? (Put these data in their file.)

Focal Point

- "Today you should have brought an object in to use as a focal point. If for some reason you did not bring something with you today, please think of what you will be using and draw a rendition of it for use now. To get you used to using your focal point, practice by each concentrating on your focal point for 30 seconds."

- Time 30 seconds, while subjects direct their attention to their focal points.

Repeat at 60 sec.

Repeat at 90 sec.

Repeat at 90 sec.

Breathing

- Pass out Breathing Patterns Handout

- "In addition to using a focal point, you can also learn to manage pain and stress by using certain breathing techniques. One way in which to do this is to follow certain breathing patterns, which help with your concentration. Remember to always begin and end each session of breathing with a deep, slow cleansing breath. Also remember to always breathe in between each syllable of the pattern (ex: 'Ha' 'breath' 'Hoo'). You may say 'He' instead of 'Ha' if you prefer."

- **Go through the first two patterns with the subjects. Make sure to explain the pattern, show them what it is like, and allow them at least a few minutes to practice each pattern. Make sure that they are doing it correctly, and correct them if necessary.**

- "The first pattern that we will practice is the 'Slow Deep' pattern. Begin by breathing in through your nose, and our through your mouth. Keep the breath slow, deep, and easy. Repeat this pattern, making sure to keep a constant rate of inhalation and exhalation." (Practice 3 times)

- "The second pattern is a 'Shallow' breathing pattern. This is similar to how dogs breathe when they pant. The pattern goes 'Ha-Ha-Ha-Ha-Ha-Ha'. Keep the breaths even and shallow. Be careful not to breathe too quickly. Between each 'Ha' remember to inhale. Repeat this pattern, keeping a slow, steady rhythm." (Practice 3 times)

- "The third pattern is 'Shallow with a Puff.' This pattern resembles the 'Choo-Choo' noise of a train. For example, the breaths should go 'Ha-Hoo-Ha-Hoo-Ha-Hoo.' Remember to breathe in between each syllable. Keep the rhythm steady and slow. Repeat this pattern, concentrating on the rhythm of your breathing." (Practice 3 times)

- "The fourth pattern is 'Pyramid Breathing.' This pattern begins with a 'Ha-Hoo', then goes 'Ha-Ha-Hoo', then increases to 'Ha-Ha-Ha-Hoo, and peaks at 'Ha-Ha-Ha-Ha-Hoo.' Then the pattern declines, 'Ha-Ha-Ha-Hoo', 'Ha-Ha-Hoo', 'Ha-Hoo.' This completes one pyramid cycle. Repeat the cycle, concentrating on the number of 'Ha's' so that you keep the structure of the pyramid even." (Practice 3 times)

- "The fifth pattern of breathing is a modification of the 'Pyramid Breathing', for use when you have a partner present. Your partner would instruct you on how many 'Ha-'s' to do with your breathing pattern. Your partner would use a random pattern, such as 'Ha-Ha-Ha-Ha-Hoo', 'Ha-Hoo', 'Ha-Ha-Hoo', 'Ha-Hoo', 'Ha-Ha-Ha-Hoo', 'Ha-Hoo'. Varying the pattern ensures that you will have to concentrate to do the correct number of breaths."

(Practice 3 times)

Relaxation

- "The next technique that we will do to help you manage your stress is a simple relaxation method called Progressive Muscle Relaxation. This method is meant to help you reach a state of complete relaxation. Practicing the following exercise will enable you to know what it feels like to be fully relaxed. Then when you feel stressed, you can recall that feeling of relaxation.

Progressive relaxation: Have them tense and then relax the scalp, face, neck, shoulders and arms and hands, chest stomach & back, upper legs, lower legs and feet. Have them imagine a pulse of relaxation entering these regions when they relax. Then have them try to imagine this pulse passing down their bodies three times. Give them 30 seconds to get it, 15 more to "enjoy it" and then tell them to come alert to stop. Have them share experiences with it for about 60 seconds, and then do it again and again for the three times.

Coordinate the breathing, relaxation, and focal point exercises and practice five times.

Note: in each coordinated practice session, have them do the first breathing exercise for 60 sec., followed by the second breathing exercise for 60 sec. etc. until all breathing types are achieved.

Assignment:

- "Between now and our next meeting on _____ at __ _____, I would like you to do some simple practicing at home. Each day, spend 10 minutes practicing your breathing patterns, while concentrating on your focal point. Also spend 10-15 minutes

practicing your muscle relaxation technique. The more you practice, the easier it will be for you to reach that state of relaxation when you are under pain."

End day two Long Lamaze

Session 3 Protocol

Note: In the Lamaze condition we are telling them that they are learning pain management techniques where we will be putting the different skills together to learn how to better combat pain.

Long Lamaze Protocol

Session Three

How many days did you practice? Put these data in their file.)

Discussion on the importance of Lamaze (motivation for participation):

- I want to make sure that we discuss the importance of your participation and active effort in this study.
- In this study we are trying to see how Lamaze can help individuals experiencing other forms of pain (other than pregnancy pain).
- We are trying to see how individuals who learn this technique perform under a pain task similar to the one you have already experienced.
- Pain is one of the leading concerns in health care treatment today. There are serious costs to individuals, health care systems, and general society.
- Medication-based pain treatment is pricy, and many individuals have limited access to such treatments and there are many problems with adherence to pain treatment (people not following prescriptions and dosages).
- We need to help people who are in pain…we are just trying to help them find alternatives to medication treatment.
- Your help in this study will guide us in answering questions about how alternative non-medication treatments can help pain patients.
- Lamaze combines a number of alternative techniques that have been proven very successful in treating pain (for example, breathing relaxation, distraction, and relaxation). Lamaze is unique in that it combines all of these techniques together, which may show to be more successful than other techniques individually.
- Again, this study is important, and people in pain can be helped by its results.

During session:

- Walk around room giving direct feedback on performance
- At the end of the session have each participant model the technique to demonstrate their mastery of the technique.
    - If mastery is not determined, tell participant that they will be asked at the beginning of the following session to demonstrate mastery (they should practice if needed)

How long per session? Put these data in their file.)

Focal Point

- "Today you should have brought an object in to use as a focal point. Remember: the focal point should be an image or object that represents something of value and importance to you and bring you peace of mind during painful episodes. For example, if you bring a crucifix, star of David, picture of some significant other or place that eases pain and suffering, then bring that. This focal point will be a tool later for pain management and will allow you to focus on this focal point rather than pain you may experience. If for some reason you did not bring something with you today, please think of what you will be using and draw a rendition of it for use now. To get you used to using your focal point, practice by each concentrating on your focal point for 30 seconds."

- Time 30 seconds, while subjects direct their attention to their focal points.

Repeat at 60 sec.

Repeat at 90 sec.

Repeat at 90 sec.

Breathing

- "In addition to using a focal point, you can also learn to manage pain and stress by using certain breathing techniques. One way in which to do this is to follow certain breathing patterns, which help with your concentration. Remember to always begin and end each session of breathing with a deep, slow cleansing breath. Also remember to always breathe in between each syllable of the pattern (ex: 'Ha' 'breath' 'Hoo'). You may say 'He' instead of 'Ha' if you prefer."

- Go through the first two patterns with the subjects. Make sure to explain the pattern, show them what it is like, and allow them at least a few minutes to practice each pattern. Make sure that they are doing it correctly, and correct them if necessary.

- "The first pattern that we will practice is the 'Slow Deep' pattern. Begin by breathing in through your nose, and out through your mouth. Keep the breath slow, deep, and easy. Repeat this pattern, making sure to keep a constant rate of inhalation and exhalation." (Practice 3 times)

- "The second pattern is a 'Shallow' breathing pattern. This is similar to how dogs breathe when they pant. The pattern goes 'Ha-Ha-Ha-Ha-Ha-Ha'. Keep the breaths even and shallow. Be careful not to breathe too quickly. Between each 'Ha' remember to inhale. Repeat this pattern, keeping a slow, steady rhythm." (Practice 3 times)

- "The third pattern is 'Shallow with a Puff.' This pattern resembles the 'Choo-Choo' noise of a train. For example, the breaths should go 'Ha-Hoo-Ha-Hoo-Ha-Hoo.' Remember to breathe in between each syllable. Keep the rhythm steady and slow. Repeat this pattern, concentrating on the rhythm of your breathing."

- "The fourth pattern is 'Pyramid Breathing.' This pattern begins with a 'Ha-Hoo', then goes 'Ha-Ha-Hoo', then increases to 'Ha-Ha-Ha-Hoo, and peaks at 'Ha-Ha-Ha-Ha-Hoo.' Then the pattern declines, 'Ha-Ha-Ha-Hoo', 'Ha-Ha-Hoo', 'Ha-Hoo.' This completes one pyramid cycle. Repeat the cycle, concentrating on the number of 'Ha's' so that you keep the structure of the pyramid even."

- "The fifth pattern of breathing is a modification of the 'Pyramid Breathing', for use when you have a partner present. Your partner would instruct you on how many 'Ha-'s' to do with your breathing pattern. Your partner would use a random pattern, such as 'Ha-Ha-Ha-Ha-Hoo', 'Ha-Hoo', 'Ha-Ha-Hoo', 'Ha-Hoo', 'Ha-Ha-Ha-Hoo', 'Ha-Hoo'. Varying the pattern ensures that you will have to concentrate to do the correct number of breaths."

Relaxation

- "The next technique that we will do to help you manage your stress and future pain experiences is a simple relaxation method called Progressive Muscle Relaxation. This method is meant to help you reach a state of complete relaxation. Practicing the following exercise will enable you to know what it feels like to be fully relaxed. Then when you feel stressed or in pain you can create that feeling of relaxation.

Progressive relaxation: Have them tense and then relax the forehead (wrinkle their forehead), face (scrunch their face tightly), neck (tense and strain their neck), shoulders (scrunch up shoulders) and arms (tighten their arms as if doing a bicep curl) and hands (make tight fists), chest stomach (tighten chest while sucking in stomach) & back (tense back while arching it), upper legs (squeeze and tense up thigh muscles), lower legs (straighten legs while pulling toes up toward body) and feet (curl feet up tightly). As they are doing each area verbally suggest that they note how their body feels differently when tense versus relaxed. Have them imagine a **pulse of relaxation** entering these regions when they relax. Then have them try to imagine this pulse passing down their bodies three times. Give them 30 seconds to get it, 15 more to "enjoy it" and then tell them to come alert to stop. Have them share experiences with it for about 60 seconds, and then do it again and again for the three times.

Coordinate the breathing, relaxation, and focal point exercises and practice five times.

Note: in each coordinated practice session, have them do the first breathing exercise for 60 sec., followed by the second breathing exercise for 60 sec. etc. until all breathing types are achieved.

Have them practice for at least 45 min.

Assignment:

- "Between now and our next meeting on _____ at _____, I would like you to do some simple practicing at home. Each day, spend 10 minutes practicing your breathing patterns, while concentrating on your focal point. Also spend 10-15 minutes practicing your muscle relaxation technique. The more you practice, the easier it will be for you to reach that state of relaxation when you are under pain."

(Remind them that they will need to demonstrate mastery of the techniques)

End of day three Long Lamaze

Session 4 Protocol

Note: In the Lamaze condition we are telling them that they are learning pain management techniques where we will be putting the different skills together to learn how to better combat pain.

Long Lamaze Protocol

Session Four

How many days did you practice? Put these data in their file.)

How long per session? Put these data in their file.)

Today is the last day of your training. You will have to work hard today and practice this technique because we will be doing the Algometer again next week, and doing this technique with the Algometer should allow you to block pain you might experience.

Focal Point

- "Today you should have brought an object in to use as a focal point. Remember: the focal point should be an image or object that represents something of value and importance to you and bring you peace of mind during painful episodes. For example, if you bring a crucifix, star of David, picture of some significant other or place that eases pain and suffering, then bring that. This focal point will be a tool later for pain management and will allow you to focus on this focal point rather than pain you may

experience. If for some reason you did not bring something with you today, please think of what you will be using and draw a rendition of it for use now. To get you used to using your focal point, practice by each concentrating on your focal point for 30 seconds."

- Time 30 seconds, while subjects direct their attention to their focal points.

Repeat at 60 sec.

Repeat at 90 sec.

Repeat at 90 sec.

Breathing

- "In addition to using a focal point, you can also learn to manage pain and stress by using certain breathing techniques. One way in which to do this is to follow certain breathing patterns, which help with your concentration. Remember to always begin and end each session of breathing with a deep, slow cleansing breath. Also remember to always breathe in between each syllable of the pattern (ex: 'Ha' 'breath' 'Hoo'). You may say 'He' instead of 'Ha' if you prefer."

"The first pattern that we will practice is the 'Slow Deep' pattern. Begin by breathing in through your nose, and out through your mouth. Keep the breath slow, deep, and easy. Repeat this pattern, making sure to keep a constant rate of inhalation and exhalation." (Practice 3 times)

- "The second pattern is a 'Shallow' breathing pattern. This is similar to how dogs breathe when they pant. The pattern goes 'Ha-Ha-Ha-Ha-Ha-Ha'. Keep the breaths even and shallow. Be careful not to breathe too quickly. Between each 'Ha' remember to inhale. Repeat this pattern, keeping a slow, steady rhythm." (Practice 3 times)

- "The third pattern is 'Shallow with a Puff.' This pattern resembles the 'Choo-Choo' noise of a train. For example, the breaths should go 'Ha-Hoo-Ha-Hoo-Ha-Hoo.' Remember to breathe in between each syllable. Keep the rhythm steady and slow. Repeat this pattern, concentrating on the rhythm of your breathing."

- "The fourth pattern is 'Pyramid Breathing.' This pattern begins with a 'Ha-Hoo', then goes 'Ha-Ha-Hoo', then increases to 'Ha-Ha-Ha-Hoo, and peaks at 'Ha-Ha-Ha-Ha-Hoo.' Then the pattern declines, 'Ha-Ha-Ha-Hoo', 'Ha-Ha-Hoo', 'Ha-Hoo.' This completes one pyramid cycle. Repeat the cycle, concentrating on the number of 'Ha's' so that you keep the structure of the pyramid even."

- "The fifth pattern of breathing is a modification of the 'Pyramid Breathing', for use when you have a partner present. Your partner would instruct you on how many 'Ha-'s' to do with your breathing pattern. Your partner would use a random pattern, such as 'Ha-

Ha-Ha-Ha-Hoo', 'Ha-Hoo', 'Ha-Ha-Hoo', 'Ha-Hoo', 'Ha-Ha-Ha-Hoo', 'Ha-Hoo'. Varying the pattern ensures that you will have to concentrate to do the correct number of breaths."

Relaxation

- "The next technique that we will do to help you manage your stress and future pain experiences is a simple relaxation method called Progressive Muscle Relaxation. This method is meant to help you reach a state of complete relaxation. Practicing the following exercise will enable you to know what it feels like to be fully relaxed. Then when you feel stressed or in pain you can create that feeling of relaxation.

Progressive relaxation: Have them tense and then relax the forehead (wrinkle their forehead), face (scrunch their face tightly), neck (tense and strain their neck), shoulders (scrunch up shoulders) and arms (tighten their arms as if doing a bicep curl) and hands (make tight fists), chest stomach (tighten chest while sucking in stomach) & back (tense back while arching it), upper legs (squeeze and tense up thigh muscles), lower legs (straighten legs while pulling toes up toward body) and feet (curl feet up tightly). As they are doing each area verbally suggest that they note how their body feels differently when tense versus relaxed. Have them imagine a **pulse of relaxation** entering these regions when they relax. Then have them try to imagine this pulse passing down their bodies three times. Give them 30 seconds to get it, 15 more to "enjoy it" and then tell them to come alert to stop. Have them share experiences with it for about 60 seconds, and then do it again and again for the three times.

Coordinate the breathing, relaxation, and focal point exercises and practice five times.

Note: in each coordinated practice session, have them do the first breathing exercise for 60 sec., followed by the second breathing exercise for 60 sec. etc. until all breathing types are achieved.

Have them practice for at least 45 min.

Assignment:

- "Between now and our next meeting on _____ at _____, I would like you to do some simple practicing at home. Each day, spend 10 minutes practicing your breathing patterns, while concentrating on your focal point. Also spend 10-15 minutes practicing your muscle relaxation technique. The more you practice, the easier it will be for you to reach that state of relaxation when you are under pain."

Today was the last day of your training. You will have to work hard today and practice this technique because we will be doing the Algometer again next week, and doing this technique with the Algometer should allow you to block pain you might experience.

End day four Long Lamaze

Session 5 Protocol

Day 5: Final day of testing. Note: this is where we first put the empty block on for 30 sec., then place heavy weight on until 5 min elapses, and then place the additional next lighter weight on for 2 min, and then the next one on for 3 min. if necessary.

Use the scale below and rate each participant every 15 sec. just as you did with the pain ratings you made earlier.

Goodness of Lamaze rating scale:

Poor	Somewhat Poor	Average	Somewhat good	Good
1	2	3	4	5

Appendix 5

Brief Lamaze Group Protocol

Session One

- Algometer (approximately 45 minutes)

Ask them what they are majoring in. If some do not know, have them list their 3 most probable choices. Talk about each and give the homework assignment of looking up all the jobs they can get with this major, and which ones they might find most enjoyable. Tell them to look up on the computer options for the majors and what each type of job would entail. - "Between now and our next meeting on _____ at _____, I would like you to do some simple practicing at home. Each day, spend 10 minutes practicing your concentrating on your major. The more you concentrate, the easier it will be for you to reach a state of relaxation when you are under stress." Discuss specific times when each of them is going to do the practice. Have them E-mail you every day on their efforts. A simple sentence on their part will do.

End day one Short Lamaze

Session 2 Protocol

Note: The whole technique will be taught to the One day Lamaze on week 4 only. Remember, they are getting advising only.

Short Lamaze Protocol (One day of Lamaze on the fourth day.)

Day 2

Ask them what they are majoring in. If some do not know, have them list their 3 most probable choices. Have each present what jobs they found on their searches. Ask them what ones are most enjoyable.

1. Have the group then discuss the strengths and weaknesses of each job type each participant found.
2. Have each talk of a past job, and what they liked versus did not like about it. (have a general conversation about each job. Goal=take up time.
3. If time is left over, then have them do the following:
4. Have each share images of what each would be doing in the jobs selected, with difficult and easy parts.

5. Then have them talk about the importance of co-workers and how this can either help or hinder job enjoyment. (Share stories of good versus bad coworkers)
6. Tell them to look up on the computer options for the majors and what each type of job would entail. - "Between now and our next meeting on _____ at _____, I would like you to do some simple practicing at home. Each day, spend 10 minutes practicing your concentrating on your major. The more you concentrate, the easier it will be for you to reach a state of relaxation when you are under stress." Discuss specific times when each of them is going to do the practice. Have them E-mail you every day on their efforts. A simple sentence on their part will do.

End day two Short Lamaze

Session 3 Protocol

Note: The whole technique will be taught to the One day Lamaze on week 4 only. Remember, they are getting advising only.

Short Lamaze Protocol (One day of Lamaze on the fourth day.)

Day Three

Ask them what they are majoring in. If some do not know, have them list their 3 most probable choices. Have each present what jobs they found on their searches. Ask them what ones are most enjoyable.

7. Have the group then discuss the strengths and weaknesses of each job type each participant found.
8. Have each talk of a past job experiences, and what they liked versus did not like about it. (have a general conversation about each job. Goal=take up time.
9. If time is left over, then have them do the following:
10. Have each share images of what each would be doing in the jobs selected, with difficult and easy parts.
11. Then have them talk about the importance of co-workers and how this can either help or hinder job enjoyment. (Share stories of good versus bad coworkers)
12. Have them practice for at least 45 min
13. Tell them to look up on the computer options for the majors and what each type of job would entail. - "Between now and our next meeting on _____ at _____, I would like you to do some simple practicing at home. Each day, spend 10 minutes practicing your concentrating on your major. The more you concentrate, the easier it will be for you to reach a state of relaxation when you are under stress." Discuss specific times when each of them is going to do the practice. Have them E-mail you every day on their efforts. A simple sentence on their part will do.

End day three Short Lamaze

Session 4 Protocol

Short Lamaze Protocol (One day of Lamaze on the fourth day.)

How many days did you practice? Put these data in their file.)

How long per session? Put these data in their file.)

Today is the last day of your training. You will have to work hard today and practice this technique because we will be doing the Algometer again next week, and doing this technique with the Algometer should allow you to block pain you might experience.

Session 4

Focal Point

- "Today you should have brought an object in to use as a focal point. Remember: the focal point should be an image or object that represents something of value and importance to you and bring you peace of mind during painful episodes. For example, if you bring a crucifix, star of David, picture of some significant other or place that eases pain and suffering, then bring that. This focal point will be a tool later for pain management and will allow you to focus on this focal point rather than pain you may experience. If for some reason you did not bring something with you today, please think of what you will be using and draw a rendition of it for use now. To get you used to using your focal point, practice by each concentrating on your focal point for 30 seconds."

- Time 30 seconds, while subjects direct their attention to their focal points.

Repeat at 60 sec.

Repeat at 90 sec.

Repeat at 90 sec.

Breathing

- "In addition to using a focal point, you can also learn to manage pain and stress by using certain breathing techniques. One way in which to do this is to follow certain breathing patterns, which help with your concentration. Remember to always begin and end each session of breathing with a deep, slow cleansing breath. Also remember to always breathe in between each syllable of the pattern (ex: 'Ha' 'breath' 'Hoo'). You may say 'He' instead of 'Ha' if you prefer."

- Go through the first two patterns with the subjects. Make sure to explain the pattern, show them what it is like, and allow them at least a few minutes to practice

each pattern. Make sure that they are doing it correctly, and correct them if necessary.

- "The first pattern that we will practice is the 'Slow Deep' pattern. Begin by breathing in through your nose, and out through your mouth. Keep the breath slow, deep, and easy. Repeat this pattern, making sure to keep a constant rate of inhalation and exhalation." (Practice 3 times)

- "The second pattern is a 'Shallow' breathing pattern. This is similar to how dogs breathe when they pant. The pattern goes 'Ha-Ha-Ha-Ha-Ha-Ha'. Keep the breaths even and shallow. Be careful not to breathe too quickly. Between each 'Ha' remember to inhale. Repeat this pattern, keeping a slow, steady rhythm." (Practice 3 times)

- "The third pattern is 'Shallow with a Puff.' This pattern resembles the 'Choo-Choo' noise of a train. For example, the breaths should go 'Ha-Hoo-Ha-Hoo-Ha-Hoo.' Remember to breathe in between each syllable. Keep the rhythm steady and slow. Repeat this pattern, concentrating on the rhythm of your breathing."

- "The fourth pattern is 'Pyramid Breathing.' This pattern begins with a 'Ha-Hoo', then goes 'Ha-Ha-Hoo', then increases to 'Ha-Ha-Ha-Hoo, and peaks at 'Ha-Ha-Ha-Ha-Hoo.' Then the pattern declines, 'Ha-Ha-Ha-Hoo', 'Ha-Ha-Hoo', 'Ha-Hoo.' This completes one pyramid cycle. Repeat the cycle, concentrating on the number of 'Ha's' so that you keep the structure of the pyramid even."

- "The fifth pattern of breathing is a modification of the 'Pyramid Breathing', for use when you have a partner present. Your partner would instruct you on how many 'Ha-'s' to do with your breathing pattern. Your partner would use a random pattern, such as 'Ha-Ha-Ha-Ha-Hoo', 'Ha-Hoo', 'Ha-Ha-Hoo', 'Ha-Hoo', 'Ha-Ha-Ha-Hoo', 'Ha-Hoo'. Varying the pattern ensures that you will have to concentrate to do the correct number of breaths."

Relaxation

- "The next technique that we will do to help you manage your stress and future pain experiences is a simple relaxation method called Progressive Muscle Relaxation. This method is meant to help you reach a state of complete relaxation. Practicing the following exercise will enable you to know what it feels like to be fully relaxed. Then when you feel stressed or in pain you can create that feeling of relaxation.

Progressive relaxation: Have them tense and then relax the forehead (wrinkle their forehead), face (scrunch their face tightly), neck (tense and strain their neck), shoulders (scrunch up shoulders) and arms (tighten their arms as if doing a bicep curl) and hands (make tight fists), chest stomach (tighten chest while sucking in stomach) & back (tense

back while arching it), upper legs (squeeze and tense up thigh muscles), lower legs (straighten legs while pulling toes up toward body) and feet (curl feet up tightly). As they are doing each area verbally suggest that they note how their body feels differently when tense versus relaxed. Have them imagine a **pulse of relaxation** entering these regions when they relax. Then have them try to imagine this pulse passing down their bodies three times. Give them 30 seconds to get it, 15 more to "enjoy it" and then tell them to come alert to stop. Have them share experiences with it for about 60 seconds, and then do it again and again for the three times.

Coordinate the breathing, relaxation, and focal point exercises and practice five times.

Note: in each coordinated practice session, have them do the first breathing exercise for 60 sec., followed by the second breathing exercise for 60 sec. etc. until all breathing types are achieved.

Have them practice for at least 45 min.

Assignment:

- "Between now and our next meeting on _____ at _____, I would like you to do some simple practicing at home. Each day, spend 10 minutes practicing your breathing patterns, while concentrating on your focal point. Also spend 10-15 minutes practicing your muscle relaxation technique. The more you practice, the easier it will be for you to reach that state of relaxation when you are under pain."

Today was the last day of your training. You will have to work hard today and practice this week because we will be doing the Algometer again next week, and using this technique should allow you to block pain you might experience.

End day four Short Lamaze

Session 5 Protocol

Day 5: Final day of testing. Note: this is where we first put the empty block on for 30 sec., then place heavy weight on until 5 min elapses, and then place the additional next lighter weight on for 2 min, and then the next one on for 3 min. if necessary.

Use the scales below and rate each participant every 15 sec. just as you did with the pain ratings you made earlier.

Goodness of Lamaze rating scale

Poor	Somewhat Poor	Average	Somewhat good	Good
1	2	3	4	5

Appendix 6

Control Group Protocol

Session One

- Algometer procedure

Focal Point:

- "For our next session on _____ at _____, please bring in an object that you can use as a focal point. A focal point is an object that you deliberately direct your attention toward. This type of concentration helps you center your mind, in order to better relax and reduce stress. Strong focal points are objects that have some kind of meaning or personal relevance for you. Some examples are: religious articles (crosses, rosaries, etc.), pictures of loved ones or a pet, or a picture of your favorite place."

Progressive relaxation: Have them tense and then relax the scalp, face, neck, shoulders and arms and hands, chest stomach & back, upper legs, lower legs and feet. Have them imagine a pulse of relaxation entering these regions when they relax.

Assignment:

- "Between now and our next meeting on _____ at _____, I would like you to do some simple practicing at home. Each day, spend 10 minutes practicing your concentrating on your focal point and doing the relaxation exercises we worked on. The more you practice, the easier it will be for you to reach that state of relaxation when you are under stress." Discuss specific times when each of them is going to do the practice. Have them E-mail you every day on their efforts. A simple sentence on their part will do.

End day one Rescorla Control

Session 2 Protocol

Rescorla Control - no mention of pain will be made. They are learning this to find out different techniques to cope with stress.

Session Two

How many days did you practice? Put these data in their file.

How long per session? Put these data in their file.

Focal Point

- "Today you should have brought an object in to use as a focal point. If for some reason you did not bring something with you today, please think of what you will be using and draw a rendition of it for use now. To get you used to using your focal point, practice by each concentrating on your focal point for 30 seconds."

- Time 30 seconds, while subjects direct their attention to their focal points.

Repeat at 60 sec.

Repeat at 90 sec.

Repeat at 90 sec.

Breathing

- Pass out Breathing Patterns Handout

- "In addition to using a focal point, you can also learn to manage and stress by using certain breathing techniques. One way in which to do this is to follow certain breathing patterns, which help with your concentration. Remember to always begin and end each session of breathing with a deep, slow cleansing breath. Also remember to always breathe in between each syllable of the pattern (ex: 'Ha' 'breath' 'Hoo'). You may say 'He' instead of 'Ha' if you prefer."

- **Go through the first two patterns with the subjects. Make sure to explain the pattern, show them what it is like, and allow them at least a few minutes to practice each pattern. Make sure that they are doing it correctly, and correct them if necessary.**

- "The first pattern that we will practice is the 'Slow Deep' pattern. Begin by breathing in through your nose, and our through your mouth. Keep the breath slow, deep, and easy. Repeat this pattern, making sure to keep a constant rate of inhalation and exhalation."

- "The second pattern is a 'Shallow' breathing pattern. This is similar to how dogs breathe when they pant. The pattern goes 'Ha-Ha-Ha-Ha-Ha-Ha'. Keep the breaths even and shallow. Be careful not to breathe too quickly. Between each 'Ha' remember to inhale. Repeat this pattern, keeping a slow, steady rhythm."

- "The third pattern is 'Shallow with a Puff.' This pattern resembles the 'Choo-Choo' noise of a train. For example, the breaths should go 'Ha-Hoo-Ha-Hoo-Ha-Hoo.'

Remember to breathe in between each syllable. Keep the rhythm steady and slow. Repeat this pattern, concentrating on the rhythm of your breathing."

- "The fourth pattern is 'Pyramid Breathing.' This pattern begins with a 'Ha-Hoo', then goes 'Ha-Ha-Hoo', then increases to 'Ha-Ha-Ha-Hoo, and peaks at 'Ha-Ha-Ha-Ha-Hoo.' Then the pattern declines, 'Ha-Ha-Ha-Hoo', 'Ha-Ha-Hoo', 'Ha-Hoo.' This completes one pyramid cycle. Repeat the cycle, concentrating on the number of 'Ha's' so that you keep the structure of the pyramid even."

- "The fifth pattern of breathing is a modification of the 'Pyramid Breathing', for use when you have a partner present. Your partner would instruct you on how many 'Ha-'s' to do with your breathing pattern. Your partner would use a random pattern, such as 'Ha-Ha-Ha-Ha-Hoo', 'Ha-Hoo', 'Ha-Ha-Hoo', 'Ha-Hoo', 'Ha-Ha-Ha-Hoo', 'Ha-Hoo'. Varying the pattern ensures that you will have to concentrate to do the correct number of breaths."

Relaxation

- "The next technique that we will do to help you manage your stress is a simple relaxation method called Progressive Muscle Relaxation. This method is meant to help you reach a state of complete relaxation. Practicing the following exercise will enable you to know what it feels like to be fully relaxed. Then when you feel stressed, you can recall that feeling of relaxation.

Progressive relaxation: Have them tense and then relax the scalp, face, neck, shoulders and arms and hands, chest stomach & back, upper legs, lower legs and feet. Have them imagine a pulse of relaxation entering these regions when they relax. Then have them try to imagine this pulse passing down their bodies three times. Give them 30 seconds to get it, 15 more to "enjoy it" and then tell them to come alert to stop. Have them share experiences with it for about 60 seconds, and then do it again and again for the three times.

Coordinate the breathing, relaxation, and focal point exercises and practice five times.

Note: in each coordinated practice session, have them do the first breathing exercise for 60 sec., followed by the second breathing exercise for 60 sec. etc. until all breathing types are achieved.

Assignment:

- "Between now and our next meeting on _____ at _____, I would like you to do some simple practicing at home. Each day, spend 10 minutes practicing your

breathing patterns, while concentrating on your focal point. Also spend 10-15 minutes practicing your muscle relaxation technique. The more you practice, the easier it will be for you to reach that state of relaxation when you are under stress."

End day two Rescorla Control

Session 3 Protocol

Note: In our Rescorla Control we say that we are teaching them" stress management"

Rescorla Control - no mention of pain will be made. They are learning this to find out different techniques to cope with stress.

Session Three

How many days did you practice? Put these data in their file.)

How long per session? Put these data in their file.)

Focal Point

- "Today you should have brought an object in to use as a focal point. Remember: the focal point should be an image or object that represents something of value and importance to you and bring you peace of mind during painful episodes. For example, if you bring a crucifix, star of David, picture of some significant other or place that eases your mind, then bring that. This focal point will be a tool later for relaxation management and will allow you to focus on this focal point rather than stress you may experience. If for some reason you did not bring something with you today, please think of what you will be using and draw a rendition of it for use now. To get you used to using your focal point, practice by each concentrating on your focal point for 30 seconds."

- Time 30 seconds, while subjects direct their attention to their focal points.

Repeat at 60 sec.

Repeat at 90 sec.

Repeat at 90 sec.

Breathing

- "In addition to using a focal point, you can also learn to manage and stress by using certain breathing techniques. One way in which to do this is to follow certain breathing patterns, which help with your concentration. Remember to always begin and end each

session of breathing with a deep, slow cleansing breath. Also remember to always breathe in between each syllable of the pattern (ex: ‘Ha’ ‘breath’ ‘Hoo’). You may say ‘He’ instead of ‘Ha’ if you prefer.”

- Go through the first two patterns with the subjects. Make sure to explain the pattern, show them what it is like, and allow them at least a few minutes to practice each pattern. Make sure that they are doing it correctly, and correct them if necessary.

- “The first pattern that we will practice is the ‘Slow Deep’ pattern. Begin by breathing in through your nose, and our through your mouth. Keep the breath slow, deep, and easy. Repeat this pattern, making sure to keep a constant rate of inhalation and exhalation.”

- “The second pattern is a ‘Shallow’ breathing pattern. This is similar to how dogs breathe when they pant. The pattern goes ‘Ha-Ha-Ha-Ha-Ha-Ha’. Keep the breaths even and shallow. Be careful not to breathe too quickly. Between each ‘Ha’ remember to inhale. Repeat this pattern, keeping a slow, steady rhythm.”

- “The third pattern is ‘Shallow with a Puff.’ This pattern resembles the ‘Choo-Choo’ noise of a train. For example, the breaths should go ‘Ha-Hoo-Ha-Hoo-Ha-Hoo.’ Remember to breathe in between each syllable. Keep the rhythm steady and slow. Repeat this pattern, concentrating on the rhythm of your breathing.”

- “The fourth pattern is ‘Pyramid Breathing.’ This pattern begins with a ‘Ha-Hoo’, then goes ‘Ha-Ha-Hoo’, then increases to ‘Ha-Ha-Ha-Hoo, and peaks at ‘Ha-Ha-Ha-Ha-Hoo.’ Then the pattern declines, ‘Ha-Ha-Ha-Hoo’, ‘Ha-Ha-Hoo’, ‘Ha-Hoo.’ This completes one pyramid cycle. Repeat the cycle, concentrating on the number of ‘Ha’s’ so that you keep the structure of the pyramid even.”

- “The fifth pattern of breathing is a modification of the ‘Pyramid Breathing’, for use when you have a partner present. Your partner would instruct you on how many ‘Ha-‘s’ to do with your breathing pattern. Your partner would use a random pattern, such as ‘Ha-Ha-Ha-Ha-Hoo’, ‘Ha-Hoo’, ‘Ha-Ha-Hoo’, ‘Ha-Hoo’, ‘Ha-Ha-Ha-Hoo’, ‘Ha-Hoo’. Varying the pattern ensures that you will have to concentrate to do the correct number of breaths.”

Relaxation

- “The next technique that we will do to help you manage your stress is a simple relaxation method called Progressive Muscle Relaxation. This method is meant to help you reach a state of complete relaxation. Practicing the following exercise will enable you to know what it feels like to be fully relaxed. Then when you feel stressed, you can create that feeling of relaxation.

Progressive relaxation: Have them tense and then relax the forehead (wrinkle their forehead), face (scrunch their face tightly), neck (tense and strain their neck), shoulders (scrunch up shoulders) and arms (tighten their arms as if doing a bicep curl) and hands (make tight fists), chest stomach (tighten chest while sucking in stomach) & back (tense back while arching it), upper legs (squeeze and tense up thigh muscles), lower legs (straighten legs while pulling toes up toward body) and feet (curl feet up tightly). As they are doing each area verbally suggest that they note how their body feels differently when tense versus relaxed. Have them imagine a **pulse of relaxation** entering these regions when they relax. Then have them try to imagine this pulse passing down their bodies three times. Give them 30 seconds to get it, 15 more to "enjoy it" and then tell them to come alert to stop. Have them share experiences with it for about 60 seconds, and then do it again and again for the three times.

Coordinate the breathing, relaxation, and focal point exercises and practice five times.

Note: in each coordinated practice session, have them do the first breathing exercise for 60 sec., followed by the second breathing exercise for 60 sec. etc. until all breathing types are achieved.

Have them practice for at least 45 min

Assignment:

- "Between now and our next meeting on _____ at _____, I would like you to do some simple practicing at home. Each day, spend 10 minutes practicing your breathing patterns, while concentrating on your focal point. Also spend 10-15 minutes practicing your muscle relaxation technique. The more you practice, the easier it will be for you to reach that state of relaxation when you are under stress."

End day three Rescorla Control

Session 4 Protocol

Note: In our Rescorla Control we say that we are teaching them" stress management"

Rescorla Control - no mention of pain will be made. They are learning this to find out different techniques to cope with stress.

Session Four

How many days did you practice? Put these data in their file.)

How long per session? Put these data in their file.)

Today is the last day of your training. You will have to work hard today and practice this technique because we will be doing the Algometer again next week, and practicing these general techniques now should help you block pain you might experience in the future**.**

Focal Point

- "Today you should have brought an object in to use as a focal point. Remember: the focal point should be an image or object that represents something of value and importance to you and bring you peace of mind during painful episodes. For example, if you bring a crucifix, star of David, picture of some significant other or place that eases your mind, then bring that. This focal point will be a tool later for relaxation management and will allow you to focus on this focal point rather than stress you may experience. If for some reason you did not bring something with you today, please think of what you will be using and draw a rendition of it for use now. To get you used to using your focal point, practice by each concentrating on your focal point for 30 seconds."

- Time 30 seconds, while subjects direct their attention to their focal points.

Repeat at 60 sec.

Repeat at 90 sec.

Repeat at 90 sec.

Breathing

- "In addition to using a focal point, you can also learn to manage and stress by using certain breathing techniques. One way in which to do this is to follow certain breathing patterns, which help with your concentration. Remember to always begin and end each session of breathing with a deep, slow cleansing breath. Also remember to always breathe in between each syllable of the pattern (ex: 'Ha' 'breath' 'Hoo'). You may say 'He' instead of 'Ha' if you prefer."

- Go through the first two patterns with the subjects. Make sure to explain the pattern, show them what it is like, and allow them at least a few minutes to practice each pattern. Make sure that they are doing it correctly, and correct them if necessary.

- "The first pattern that we will practice is the 'Slow Deep' pattern. Begin by breathing in through your nose, and our through your mouth. Keep the breath slow, deep, and easy. Repeat this pattern, making sure to keep a constant rate of inhalation and exhalation."

- "The second pattern is a 'Shallow' breathing pattern. This is similar to how dogs breathe when they pant. The pattern goes 'Ha-Ha-Ha-Ha-Ha-Ha'. Keep the breaths even and shallow. Be careful not to breathe too quickly. Between each 'Ha' remember to inhale. Repeat this pattern, keeping a slow, steady rhythm."

- "The third pattern is 'Shallow with a Puff.' This pattern resembles the 'Choo-Choo' noise of a train. For example, the breaths should go 'Ha-Hoo-Ha-Hoo-Ha-Hoo.' Remember to breathe in between each syllable. Keep the rhythm steady and slow. Repeat this pattern, concentrating on the rhythm of your breathing."

- "The fourth pattern is 'Pyramid Breathing.' This pattern begins with a 'Ha-Hoo', then goes 'Ha-Ha-Hoo', then increases to 'Ha-Ha-Ha-Hoo, and peaks at 'Ha-Ha-Ha-Ha-Hoo.' Then the pattern declines, 'Ha-Ha-Ha-Hoo', 'Ha-Ha-Hoo', 'Ha-Hoo.' This completes one pyramid cycle. Repeat the cycle, concentrating on the number of 'Ha's' so that you keep the structure of the pyramid even."

- "The fifth pattern of breathing is a modification of the 'Pyramid Breathing', for use when you have a partner present. Your partner would instruct you on how many 'Ha-'s' to do with your breathing pattern. Your partner would use a random pattern, such as 'Ha-Ha-Ha-Ha-Hoo', 'Ha-Hoo', 'Ha-Ha-Hoo', 'Ha-Hoo', 'Ha-Ha-Ha-Hoo', 'Ha-Hoo'. Varying the pattern ensures that you will have to concentrate to do the correct number of breaths."

Relaxation

- "The next technique that we will do to help you manage your stress is a simple relaxation method called Progressive Muscle Relaxation. This method is meant to help you reach a state of complete relaxation. Practicing the following exercise will enable you to know what it feels like to be fully relaxed. Then when you feel stressed, you can create that feeling of relaxation.

Progressive relaxation: Have them tense and then relax the forehead (wrinkle their forehead), face (scrunch their face tightly), neck (tense and strain their neck), shoulders (scrunch up shoulders) and arms (tighten their arms as if doing a bicep curl) and hands (make tight fists), chest stomach (tighten chest while sucking in stomach) & back (tense back while arching it), upper legs (squeeze and tense up thigh muscles), lower legs (straighten legs while pulling toes up toward body) and feet (curl feet up tightly). As they are doing each area verbally suggest that they note how their body feels differently when tense versus relaxed. Have them imagine a **pulse of relaxation** entering these regions when they relax. Then have them try to imagine this pulse passing down their bodies three times. Give them 30 seconds to get it, 15 more to "enjoy it" and then tell them to come alert to stop. Have them share experiences with it for about 60 seconds, and then do it again and again for the three times.

Coordinate the breathing, relaxation, and focal point exercises and practice five times.

Note: in each coordinated practice session, have them do the first breathing exercise for 60 sec., followed by the second breathing exercise for 60 sec. etc. until all breathing types are achieved.

Have them practice for at least 45 min

Assignment:

- "Between now and our next meeting on _____ at _____, I would like you to do some simple practicing at home. Each day, spend 10 minutes practicing your breathing patterns, while concentrating on your focal point. Also spend 10-15 minutes practicing your muscle relaxation technique. The more you practice, the easier it will be for you to reach that state of relaxation when you are under stress."

Today was the last day of your training. Please practice hard during the week because we will be doing the Algometer again next week, and practicing these general techniques now should help you block pain you might experience in the future**.**

End day four Rescorla Control

Session 5 Protocol

Day 5: Final day of testing. Note: this is where we first put the empty block on for 30 sec., then place heavy weight on until 5 min elapses, and then place the additional next lighter weight on for 2 min, and then the next one on for 3 min. if necessary.

Use the scale below and rate each participant every 15 sec. just as you did with the pain ratings you made earlier.

Goodness of Lamaze rating scale:

Poor	Somewhat Poor	Average	Somewhat good	Good
1	2	3	4	5

Rescorla control

"We are going to do the Algometer test again and then go back to the room and resume our activities like we did on the first day. When you feel pain like you felt the first day, hit the stop sign and I will take the weights off. Do you have any questions?" (Note: If they ask if they should do what they learned, you should tell them "no" and note that they asked. If they begin doing Lamaze when you first put the un-weighted block on their finger or any time thereafter, ask them to stop and note this on your notes."

Appendix 7

Acceptance Group Protocol

Session One

- Algometer (approximately 45 minutes)

Introduction to Acceptance and Commitment Therapy (ACT) for pain management: Read the following to the participants.

Acceptance and Commitment Therapy (also known as ACT), is an intervention that is part of a new wave of therapies. ACT offers an alternative way to cope with stressors, symptoms, and other negative symptoms in a manner that focuses on accepting such difficulties with focus on life goals and values, rather than trying to control them. By accepting distress and problems, individuals can redirect their attention, energy, and focus from problems they cannot control, and target issues that are important for their well-being and life satisfaction (such as goals and values). By focusing on one's goals and values, individuals find themselves feeling more goal-directed, motivated, and optimistic despite the distress that they may presently be experiencing.

ACT strives to do three things:

1) help individuals to accept themselves, others, and experiences with compassion

2) choose valued directions in life

3) commit to actions that promote their advancement toward that direction.

(Hayes, Strosahl, & Wilson, 1999)

Discuss the concept of acceptance and apply it to general daily experiences.

"Between now and our next meeting on _____ at _____, I would like you to do some simple practicing at home. Each day, spend 10 minutes practicing acceptance for any pains you had throughout the day. The more you concentrate, the easier it will be for you to reach a state of relaxation when you are under stress." Discuss specific times when each of them is going to do the practice. Have them E-mail you every day on their efforts. A simple sentence on their part will do.

End day one Acceptance

Session 2:

Introduction to Acceptance and Commitment Therapy (ACT) for pain management:

Read the following to the participants. Note: This is the material you read a week ago. Read it again, and then read the second part of this as well.)

Acceptance and Commitment Therapy (also known as ACT), is an intervention that is part of the new wave of therapies. ACT offers an alternative way to cope with stressors, symptoms, and other negative symptoms in a manner that focuses on accepting such difficulties with focus on life goals and values, rather than trying to control them. By accepting distress and problems, individuals can redirect their attention, energy, and focus from problems they cannot control, and target issues that are important for their well-being and life satisfaction (such as goals and values). By focusing on one's goals and values, individuals find themselves feeling more goal-directed, motivated, and optimistic despite the distress that they may presently be experiencing.

ACT strives to do three things:

1) help individuals to accept themselves, others, and experiences with compassion

2) choose valued directions in life

3) commit to actions that promote their advancement toward that direction.

(Hayes, Strosahl, & Wilson, 1999).

(New material to read to participants)

Additional information for later sessions/explanations:

ACCEPTANCE OF PAIN AND DISABILITY

Richard W. Hanson, Ph.D. (2000)

"While it is important to use problem-solving approaches whenever possible, we must also realize that there are many adverse situations and events in life that offer few if any opportunities for problem solving. Pain, suffering, disease, old age, and death are inevitable parts of human existence. No matter who we are, how healthy or physically fit we are, or how much money and power we have, we will all eventually die. Nothing can really prevent the physical aging process, erase unpleasant events that have already occurred, change who our parents and children are, alter our genetic make-up, or end reality of pain. For many, chronic pain and associated physical limitations are not so much problems to be solved (i.e., made to go away), but rather they are realities to be accepted. In fact, whenever you are faced with an unsolvable problem or an adverse situation that will never go away, you are forced to wrestle with the issue of acceptance.

Acceptance of pain and related problems is a significant stumbling block for many. This may be due to confusion and misunderstanding regarding the meaning of acceptance. First of all, I am not suggesting that you must accept needless suffering. In particular, I see no need to accept having to live with constant severe pain. Many pain medications are available which can lower your pain to a more tolerable level. However, it may not be reasonable to expect that these drugs will make you totally pain free. Therefore, acceptance does mean having to accept living with a certain amount of pain. Second, acceptance does not mean that one has to give up all hope and feel defeated. Rather, one can maintain hope for a better future while accepting today's unpleasant realities. Third, acceptance does not mean that you have to accept someone else's version of your condition. For example, some pain patients have been given bleak prognoses by their doctor and subsequently proven the doctor wrong. Finally, acceptance has nothing to do with apathy and not caring. You don't have to like the situation you are in. Certainly you would prefer that things were different. Healthy acceptance means recognizing the futility of struggling against the unpleasant realities that are beyond your control. It means recognizing that no amount of agonizing over and bemoaning your fate is going to make things any better. True acceptance means coming to terms mentally and emotionally with your unpleasant reality. It means coming to peace with the adverse reality that you are currently facing. You can say to yourself, "I don't like having this chronic pain condition, but I'm going to do everything I can to make my life as best as I can despite the pain."

Healthy and peaceful acceptance of unpleasant realities like pain and disability is one of the most important things that you can do mentally to reduce stress and maintain peace of mind. Remember that acceptance is not a one-time decision. Rather, it is an ongoing process which must be re-experienced every day.

Acceptance as a Way of Coping with Pain

The tendency to fight and resist pain at a physical and mental level may seem like an automatic reflex process. Unfortunately, the chronically elevated physical and mental tension that results from this ongoing struggle usually takes its toll on your body and mental functioning. Muscles and joints become stiff and rigid. Mentally and emotionally you become tense and irritable, or you simply become exhausted by the continual battle against the pain.

Acceptance as a coping method means learning to tune into your body and move your body while relaxing at the same time. Techniques to accomplish this involve focused breathing awareness and passive body scan. With practice you can learn to breathe into and through painful areas of your body, maintaining awareness of the relaxing breath while allowing pain sensations to ebb and flow in a non-judgmental manner. Rather than labeling the sensations as bad and fighting against them, you simple note them, accept

them, and return to your breathing meditation. Likewise, you can learn to gradually and gently stretch your muscles and joints while maintaining the breathing awareness. Rather than trying to move or stretch while simultaneously tensing and contracting your muscles when you experience discomfort, you learn to remain mindful of the relaxing breath. It becomes so much easier to stretch and move your body when you are relaxed and not fighting against yourself."

Here they can discuss how this might have worked in the past when they had suffered a painful episode. Try to get each participant to share an incident when they had pain and how this might have helped.

"Between now and our next meeting on _____ at _____, I would like you to do some simple practicing at home. Each day, spend 10 minutes practicing acceptance for any pains you had throughout the day. The more you concentrate, the easier it will be for you to reach a state of relaxation when you are under stress." Discuss specific times when each of them is going to do the practice. Have them E-mail you every day on their efforts. A simple sentence on their part will do.

End day two Acceptance

Session 3:

Acceptance Group

Introduction to Acceptance and Commitment Therapy (ACT) for pain management: Read the following to the participants. Note: This is the material you read a week ago. Read it again, and then read the second part of this as well.)

Acceptance and Commitment Therapy (also known as ACT), is an intervention that is part of the new wave of therapies. ACT offers an alternative way to cope with stressors, symptoms, and other negative symptoms in a manner that focuses on accepting such difficulties with focus on life goals and values, rather than trying to control them. By accepting distress, problems, and pain, individuals can redirect their attention, energy, and focus from problems they cannot control, and target issues that are important for their well-being and life satisfaction (such as goals and values). By focusing on one's goals and values, individuals find themselves feeling more goal-directed, motivated, and optimistic despite the distress and pain that they may presently be experiencing.

ACT strives to do three things:

1) help individuals to accept themselves, others, and experiences with compassion

2) choose valued directions in life

3) commit to actions that promote their advancement toward that direction.

(Hayes, Strosahl, & Wilson, 1999).

ACCEPTANCE OF PAIN AND DISABILITY

Richard W. Hanson, Ph.D. (2000)

“While it is important to use problem-solving approaches whenever possible, we must also realize that there are many adverse situations and events in life that offer few if any opportunities for problem solving. Pain, suffering, disease, old age, and death are inevitable parts of human existence. No matter who we are, how healthy or physically fit we are, or how much money and power we have, we will all eventually die. Nothing can really prevent the physical aging process, erase unpleasant events that have already occurred, change who our parents and children are, alter our genetic make-up, or end reality of pain. For many, chronic pain and associated physical limitations are not so much problems to be solved (i.e., made to go away), but rather they are realities to be accepted. In fact, whenever you are faced with an unsolvable problem or an adverse situation that will never go away, you are forced to wrestle with the issue of acceptance.

Acceptance of pain and related problems is a significant stumbling block for many. This may be due to confusion and misunderstanding regarding the meaning of acceptance. First of all, I am not suggesting that you must accept needless suffering. In particular, I see no need to accept having to live with constant severe pain. Many pain medications are available which can lower your pain to a more tolerable level. However, it may not be reasonable to expect that these drugs will make you totally pain free. Therefore, acceptance does mean having to accept living with a certain amount of pain. Second, acceptance does not mean that one has to give up all hope and feel defeated. Rather, one can maintain hope for a better future while accepting today's unpleasant realities. Third, acceptance does not mean that you have to accept someone else's version of your condition. For example, some pain patients have been given bleak prognoses by their doctor and subsequently proven the doctor wrong. Finally, acceptance has nothing to do with apathy and not caring. You don't have to like the situation you are in. Certainly you would prefer that things were different. Healthy acceptance means recognizing the futility of struggling against the unpleasant realities that are beyond your control. It means recognizing that no amount of agonizing over and bemoaning your fate is going to make things any better. True acceptance means coming to terms mentally and emotionally with your unpleasant reality. It means coming to peace with the adverse reality that you are currently facing. You can say to yourself, "I don't like having this chronic pain condition, but I'm going to do everything I can to make my life as best as I can despite the pain."

Healthy and peaceful acceptance of unpleasant realities like pain and disability is one of the most important things that you can do mentally to reduce stress and maintain peace of mind. Remember that acceptance is not a one-time decision. Rather, it is an ongoing process which must be re-experienced every day.

Acceptance as a Way of Coping with Pain

The tendency to fight and resist pain at a physical and mental level may seem like an automatic reflex process. Unfortunately, the chronically elevated physical and mental tension that results from this ongoing struggle usually takes its toll on your body and mental functioning. Muscles and joints become stiff and rigid. Mentally and emotionally you become tense and irritable, or you simply become exhausted by the continual battle against the pain.

Acceptance as a coping method means learning to tune into your body and move your body while relaxing at the same time. Techniques to accomplish this involve focused breathing awareness and passive body scan. With practice you can learn to breathe into and through painful areas of your body, maintaining awareness of the relaxing breath while allowing pain sensations to ebb and flow in a non-judgmental manner. Rather than labeling the sensations as bad and fighting against them, you simple note them, accept them, and return to your breathing meditation. Likewise, you can learn to gradually and gently stretch your muscles and joints while maintaining the breathing awareness. Rather than trying to move or stretch while simultaneously tensing and contracting your muscles when you experience discomfort, you learn to remain mindful of the relaxing breath. It becomes so much easier to stretch and move your body when you are relaxed and not fighting against yourself."

Here they can discuss how this might have worked in the past when they had suffered a painful episode. Try to get each participant to share an incident when they had pain and how this might have helped.

Have them practice for at least 45 min

"Between now and our next meeting on _____ at _____, I would like you to do some simple practicing at home. Each day, spend 10 minutes practicing acceptance for any pains you had throughout the day. The more you concentrate, the easier it will be for you to reach a state of relaxation when you are under stress." Discuss specific times when each of them is going to do the practice (Suggestion: perhaps bedtime is a great time to reflect on the day for ten or so minutes and practice acceptance). Have them E-mail you every day on their efforts. A simple sentence on their part will do.

End day three Acceptance

Session 4:

Acceptance Group

How many days did you practice? Put these data in their file.)

How long per session? Put these data in their file.)

Today is the last day of your training. You will have to work hard today and practice this technique because we will be doing the Algometer again next week, and using this technique should allow you to block pain you might experience.

Introduction to Acceptance and Commitment Therapy (ACT) for pain management: Read the following to the participants. Note: This is the material you read a week ago. Read it again, and then read the second part of this as well.)

Acceptance and Commitment Therapy (also known as ACT), is an intervention that is part of the new wave of therapies. ACT offers an alternative way to cope with stressors, symptoms, and other negative symptoms in a manner that focuses on accepting such difficulties with focus on life goals and values, rather than trying to control them. By accepting distress, problems, and pain, individuals can redirect their attention, energy, and focus from problems they cannot control, and target issues that are important for their well-being and life satisfaction (such as goals and values). By focusing on one's goals and values, individuals find themselves feeling more goal-directed, motivated, and optimistic despite the distress and pain that they may presently be experiencing.

ACT strives to do three things:

1) help individuals to accept themselves, others, and experiences with compassion

2) choose valued directions in life

3) commit to actions that promote their advancement toward that direction.

(Hayes, Strosahl, & Wilson, 1999).

ACCEPTANCE OF PAIN AND DISABILITY

Richard W. Hanson, Ph.D. (2000)

"While it is important to use problem-solving approaches whenever possible, we must also realize that there are many adverse situations and events in life that offer few if any

opportunities for problem solving. Pain, suffering, disease, old age, and death are inevitable parts of human existence. No matter who we are, how healthy or physically fit we are, or how much money and power we have, we will all eventually die. Nothing can really prevent the physical aging process, erase unpleasant events that have already occurred, change who our parents and children are, alter our genetic make-up, or end reality of pain. For many, chronic pain and associated physical limitations are not so much problems to be solved (i.e., made to go away), but rather they are realities to be accepted. In fact, whenever you are faced with an unsolvable problem or an adverse situation that will never go away, you are forced to wrestle with the issue of acceptance.

Acceptance of pain and related problems is a significant stumbling block for many. This may be due to confusion and misunderstanding regarding the meaning of acceptance. First of all, I am not suggesting that you must accept needless suffering. In particular, I see no need to accept having to live with constant severe pain. Many pain medications are available which can lower your pain to a more tolerable level. However, it may not be reasonable to expect that these drugs will make you totally pain free. Therefore, acceptance does mean having to accept living with a certain amount of pain. Second, acceptance does not mean that one has to give up all hope and feel defeated. Rather, one can maintain hope for a better future while accepting today's unpleasant realities. Third, acceptance does not mean that you have to accept someone else's version of your condition. For example, some pain patients have been given bleak prognoses by their doctor and subsequently proven the doctor wrong. Finally, acceptance has nothing to do with apathy and not caring. You don't have to like the situation you are in. Certainly you would prefer that things were different. Healthy acceptance means recognizing the futility of struggling against the unpleasant realities that are beyond your control. It means recognizing that no amount of agonizing over and bemoaning your fate is going to make things any better. True acceptance means coming to terms mentally and emotionally with your unpleasant reality. It means coming to peace with the adverse reality that you are currently facing. You can say to yourself, "I don't like having this chronic pain condition, but I'm going to do everything I can to make my life as best as I can despite the pain."

Healthy and peaceful acceptance of unpleasant realities like pain and disability is one of the most important things that you can do mentally to reduce stress and maintain peace of mind. Remember that acceptance is not a one-time decision. Rather, it is an ongoing process which must be re-experienced every day.

Acceptance as a Way of Coping with Pain

The tendency to fight and resist pain at a physical and mental level may seem like an automatic reflex process. Unfortunately, the chronically elevated physical and mental tension that results from this ongoing struggle usually takes its toll on your body and

mental functioning. Muscles and joints become stiff and rigid. Mentally and emotionally you become tense and irritable, or you simply become exhausted by the continual battle against the pain.

Acceptance as a coping method means learning to tune into your body and move your body while relaxing at the same time. Techniques to accomplish this involve focused breathing awareness and passive body scan. With practice you can learn to breathe into and through painful areas of your body, maintaining awareness of the relaxing breath while allowing pain sensations to ebb and flow in a non-judgmental manner. Rather than labeling the sensations as bad and fighting against them, you simple note them, accept them, and return to your breathing meditation. Likewise, you can learn to gradually and gently stretch your muscles and joints while maintaining the breathing awareness. Rather than trying to move or stretch while simultaneously tensing and contracting your muscles when you experience discomfort, you learn to remain mindful of the relaxing breath. It becomes so much easier to stretch and move your body when you are relaxed and not fighting against yourself."

Here they can discuss how this might have worked in the past when they had suffered a painful episode. Try to get each participant to share an incident when they had pain and how this might have helped.

Have them practice for at least 45 min

"Between now and our next meeting on _____ at _____, I would like you to do some simple practicing at home. Each day, spend 10 minutes practicing acceptance for any pains you had throughout the day. The more you concentrate, the easier it will be for you to reach a state of relaxation when you are under stress." Discuss specific times when each of them is going to do the practice (Suggestion: perhaps bedtime is a great time to reflect on the day for ten or so minutes and practice acceptance). Have them E-mail you every day on their efforts. A simple sentence on their part will do.

Remember: <u>Today was the last day of your training. You will have to work hard this week and practice this technique because we will be doing the Algometer again next week, and using this technique should allow you to block any pain you might experience.</u>

End day four Acceptance

<u>Session 5:</u>

Day 5: Final day of testing. Note: this is where we first put the empty block on for 30 sec., then place heavy weight on until 5 min elapses, and then place the additional next lighter weight on for 2 min, and then the next one on for 3 min. if necessary.

Use the scale below and rate each participant every 15 sec. just as you did with the pain ratings you made earlier.

Goodness of Acceptance rating scale:

Poor	Somewhat Poor	Average	Somewhat good	Good
1	2	3	4	5

Acceptance:

"When I place the wooden block on your finger, I want you to do the techniques we have been practicing. First, place your mind in the mode you practiced and try to use what you now know about acceptance. Try to do the techniques as long as you can, but when you feel pain that it too painful to stand, hit the stop sign and I will take the weights off. Do you have any questions?"

MARSHALL UNIVERSITY
www.marshall.edu

Office of Research Integrity
Institutional Review Board

Friday, October 17, 2008

Marc A Lindberg, Ph.D.
Psychology
Marshall University
Huntington, WV. 25701

RE: IRB Study # 9318 **At:** Marshall IRB 2

Dear Dr. Lindberg:

Protocol Title:
The Introduction of an Innovative Non-Pharmachological Pain Management Technique

Expiration Date:	10/16/2009
Our Internal #:	5311
Type of Change:	(Other) Expedited
Expedited ?:	☑
Date of Change:	10/17/2008
Date Received:	10/17/2008
On Meeting Date:	11/29/2008
Description:	In accordance with 45CFR46.110(a)(7), the above study and informed consent were granted Expedited approval today by the Marshall University IRB#2 for the period of 12 months. The approval will expire 10/16/09. A continuing review request for this study must be submitted no later than 30 days prior to the expiration date. This study is for student Emily Selby. The purpose of this study is to gain a more thorough understanding of how individuals experience pain under different conditions of pain management.

Respectfully yours,

Stephen D. Cooper, Ph.D.
Marshall University IRB #2 Chairperson

References

Ballantyne, J. C. (2007). Opiod analgesia: Perspectives on right use and utility. *Pain Physician, 10*, 479-491.

Cheatle, M. D., & Gallagher, R. M. (2006). Chronic pain and comorbid mood and substance use disorders: A biopsychosocial treatment approach, *Current Psychiatry Reports, 8,* 371-376.

Dahlquist, L. D., McKenna, K. D., Jones, K. K., Dillinger, L., Weiss, K. E., & Ackerman, C. S. (2007). Active and passive distraction using a head-mounted display helmet: Effects on cold pressor pain in children. *Health Psychology, 26,* 794-801.

De Jong, A. E. & Gamel, C. (2006). Use of a simple relaxation technique in burn care: literature review. *Journal of Advanced Nursing, 54,* 710-721.

Dogan, S. K., Tur, B. S., Kurtais, Y., & Atay, M. (2008). Comparison of three different approaches in the treatment of chronic low back pain. *Clinical Rheumatology, 27,* 873-881.

Field, T. (2008). Pregnancy and labor alternative therapy research. *Alternative Therapies in Health and Medicine, 14*, 28-34.

Gourlay, D. L., Heit, H. A., & Almahrezi, A. (2005). Universal precautions in pain medicine: A rational approach to the treatment of chronic pain. *Pain Med, 6,* 107-112.

Hanson, R. W. (2000). Acceptance of pain and disability. Retrieved from http://www.arachnoiditis.info/website_captures/chronicpainhandbook/Mental%20Health-%20VA%20Long%20Beach%20Healthcare%20System.htm

Hayes, S. C., Strosahl, K., & Wilson, K. G. (1999). *Acceptance and commitment therapy: An experiential approach to behavior change.* New York: Guilford Press.

Hojsted, J., & Sjogren, P. (2007). Addiction to opiods in chronic pain patients: A literature review. *European Journal of Pain. 11*, 490-518.

Hurwitz, E. L., Goldstein, M. S., Morgenstern, H., & Chiang, L. (2006). The impact of psychosocial factors on neck pain and disability outcomes among primary care patients. Results from the UCLA Neck Pain Study. *Disability and Rehabilitation, 28*, 1319-1329.

Karmel, M. (1959). *Thank you, Dr Lamaze*. New York: Harper & Row.

Kaulagekar, A., & Radkar, A. (2007). Social status makes a difference: tuberculosis scenario during National Family Health Survey – 2. *The Indian Journal of Tuberculosis, 53,* 17-23.

Klusman, L. E. (1975). Reduction of pain in childbirth by the alleviation of anxiety during pregnancy. *Journal of Consulting and Clinical Psychology, 43,* 162-165.

Kwekkeboom, K. L., & Gretarsdottir, E. (2006). Systematic review of relaxation interventions for pain. *Journal of Nursing Scholarship, 38,* 269-277.

Lamaze, F. (1970). *Painless Childbirth Psychoprophylactic Method*. Chicago: Regnery Company.

Leventhal, A. E., Leventhal, H., Shachan, S., & Easterling, D. V. (1989). Active coping reduces reports of pain from childbirth. *Journal of Consulting and Clinical Psychology, 57,* 365-371.

Loeser, J. D. (1999). Economic implications of pain management. *ACTA Anaesthesiologica Scandinavica, 43,* 957-959.

McCaul, K. D., & Malott, J. M. (1984). Distraction and coping with pain. *Psychological Bulletin, 95,* 516-533.

Nawar, E. W., Niska, R. W., & Xu, J. (2007). National Hospital Ambulatory Medical Care Survey, 2005 Emergency Department Summary. *Advance Data from Vital and Health Statistics, 386,* 1-32.

Rainwater, A. J., & McNeil, D. W. (1991). Reinventing the Algometer: Synopsis of the literature and presentation of a reliable, inexpensive model. *Behavior Research Methods, Instruments, & Computers, 23,* 486-492.

Rescorla, R. A. (1967). Pavlovian conditioning and its proper control procedures. *Psychological Review, 74,* 71-80.

Seers, K., Watt-Watson, J., & Bucknall, T. (2006). Challenges of pain management for the 21st century. *Journal of Advanced Nursing, 55,* 4-6.

Seligman, M. E. P., & Hager, J. (1972). Biological Boundaries of Conditioning. New York: Appleton-Century-Crofts Inc.

Strote, M. E. (2007). Cutting Class. *Fit Pregnancy, 14,* 54-56.

Turk, D. C., & Burwinkle, T. M. (2005). Clinical outcomes, cost-effectiveness, and the role of psychology in treatments for chronic pain sufferers. *Professional Psychology: Research and Practice, 36,* 602-610.

Turk, D. C., & Feldman, C. S. (1992). Noninvasive approaches to pain control in terminal illness: the contribution of psychological variables. *The Hospice Journal, 8,* 1-23.

Turk, D. C., Swanson, K. S., & Tunks, E. R. (2008). Psychological approaches in the treatment of chronic pain patients – When pills, scalpels, and needles are not enough, *Canadian Journal of Psychiatry, 53,* 213-223.

Vowles, K. E. & McCracken, L. M. (2008). Acceptance and values-based action in chronic pain: A study of treatment effectiveness and process. *Journal of Consulting and Clinical Psychology, 76,* 387-407.

Wideman, M. V., & Singer, J. E. (1984). The role of psychological mechanisms in preparation for childbirth. *American Psychologist, 39,* 1357-1371.

Wiederhold, M. D., & Wiederhold, B. K. (2007). Virtual reality and interactive simulation for pain distraction. *Pain Medicine, 8,* S182-S188.

Emily M. Selby-Nelson, M.A.
Curriculum Vitae

PERSONAL INFORMATION

Permanent Address:
1979 Parkwood Road
Charleston, WV 25314

E-mail:
ESelbyNelson@gmail.com

EDUCATION

Marshall University
Doctor of Psychology (Psy.D.), Clinical Psychology
Expected Degree Date: May 2011

Marshall University
Master's Degree in Psychology (M.A.)

West Virginia University
Bachelor of Arts in Psychology, Magna Cum Laude

CLINICAL EXPERIENCE

WVU Department of Behavioral Medicine & Psychiatry, July 2010 – July 2011

Outpatient Psychiatry Rotation, Therapist
Outpatient individual cognitive-behavioral therapy with individuals ranging from age 4 to 76 with a variety of mental health diagnoses, family therapy using Parent-Child Interaction Therapy, and participation in a rural mental health rotation with Dr. Fields and treated patients in the context of a family practice clinic through Cabin Creek Health Systems.
Supervisors: John C. Linton, Ph.D., Laura Wilhelm, Ph.D., Holly C. Cloonan, Ph.D., Susan Walker-Matthews, Ph.D., Scott Fields, Ph.D.

Neuropsychological Assessment Laboratory
Psychodiagnostic and neuropsychological assessments; completion of comprehensive assessments including IQ testing, assessment of developmental disabilities, neuropsychological assessment to determine ADHD, and personality testing; report writing, development of recommendations for patients, and collaborating with families and patients to provide feedback and guidance.
Supervisor: Raymond K. DiPino, Ph.D

CAMC Cardiac Rehabilitation Center
Presentation of psychoeucational sessions to cardiac rehab patients including topics such as relaxation, stress management, coping with anxiety and depression, time management, anger management; therapy with cardiac rehab patients with

depression, anxiety, stress, problems adjusting to lifestyle changes following surgery, aggression and anger, and relationship problems; collaboration with team of professionals providing integrative care to cardiac rehab patients.
Supervisor: Melisa Chelf-Sirbu, Ph.D.

CAMC General Hospital: Adult Psychiatric Inpatient Unit
Co-facilitation in group therapy (both CBT and psychodynamic); individual therapy with patients; consultation with residents, attending physicians, and staff regarding the treatment progress and medical management of patients; participation in a team consisting of medical students, a psychiatric resident, nurses, and an attending psychiatrist in the management of individual patients; crisis intervention experience while taking 24-hour call in the Emergency Department with psychiatric resident.
Supervisor: Laura Wilhelm, Ph.D.

Woodland Centers (Behavioral Health Services); Galipolis, OH; August 2009 – May 2010

Psychological Trainee, Rural Practicum
Participation in individual supervision, individual psychotherapy, family therapy, psychodiagnostic assessment (i.e. personality, bariatric assessment, IQ, executive functioning, symptom assessment, etc.), clinical writing (case notes, reports, etc.), case review, crisis intervention, consultation, behavioral health intervention (e.g. adjustment to medical treatment), attendance to 1.5 hours of group supervision weekly and 2 hours of individual supervision weekly.
Supervisor: Wes Crum, Ph.D.

River Park Hospital; Huntington, WV; January 2009 – August 2009

Psychological Trainee, Community Practicum
Participation in treatment team meetings, attendance to grand rounds, individual supervision, group supervision, completion of psychosocial assessments, individual psychotherapy, group psychotherapy, psychodiagnostic assessment, clinical writing, observation and interaction with patients on unit, case review, consultation, chemical dependence and substance abuse treatment experience, and attendance to 1.5 hours of group supervision weekly and 1 to 2 hours of individual supervision weekly.
Supervisor: Donna Midkiff, Ph.D.

Mildred-Mitchell Bateman Hospital; Huntington, WV; August 2008- January 2009

Psychological Trainee, Community Practicum
Attendance and participation in treatment team meetings, completion of initial assessments, completion of psychological assessments, individual therapy, group therapy, observation and interaction with patients on unit, assessment conduction, assessment writing, clinical writing, case review, consultation, and attendance to 1.5 hours of group supervision weekly and 2 hours of individual supervision weekly.
Supervisor: Vernon Kirk, Psy.D.

Marshall University, Department of Psychology

Psychological Trainee, Clinical Practicum, August 2007- August 2008
Attendance to weekly staff meetings, maintenance of case load, conducting intake sessions, conducting psychotherapy sessions, case note completion, cognitive conceptualization completion, clinical report writing, case relevant research, intervention implementation, psychological skills training presentations (stress management, anger management, relationship and social skills training, anxiety reduction, depression reduction, sleep disturbance management, professional development, educational development, etc.), university outreach activities, and attendance to 1.5 hours of group supervision weekly and 1 hour of individual supervision weekly.
Supervisor: Thomas Ellis, Psy. D., Marty Amerikaner, Ph.D., Pamela Mulder, Ph.D.

Psychological Trainee, Advanced Doctoral Assessment Practicum, Fall, 2007- Fall, 2008
Attendance at individual supervision meetings, completion of intake sessions (mental status, history, and referral question), assessment administration, assessment scoring, assessment report writing, assessment feedback, and referral recommendation.
Supervisor: Keith Beard, Psy.D., and Marianna Linz, Ph.D.

Head Start Consultation Program, Fall, 2007 - Spring, 2008
Visitation at 3 Head Start locations, observation of classroom functioning and child behavior, consultation in response to observed problems/concerns, and completion of documentation of observation results.
Supervisor: Marianna Linz, Ph.D.

Integrated Assessment Practicum I and II, Fall 2006 - Spring 2007
Attendance to weekly lecture and practicum meetings, completion of mock cases (including intake and assessment administration), assessment report writing, and case presentation.
Supervisor: Pamela Mulder, Ph.D., and Marianna Linz, Ph.D.

ADDITIONAL CLINICAL AND PROFESSIONAL TRAINING

Cognitive Behavioral Therapy Seminar and Group Supervision
Location: WVU Department of Behavioral Medicine & Psychiatry
Duration: September 2010 – present
Duties: Participation in weekly CBT training modules, case presentation and discussion, and video review.

Dialectical Behavior Therapy Seminar
Location: WVU Department of Behavioral Medicine & Psychiatry
Duration: January 2011 – present
Duties: Participation in weekly DBT training modules, case presentation and discussion, and video review.

Clinical Workshop: Motivational Interviewing
Location: West Virginia University/ Quin Curtis Center
Date: September 2011

Clinical Workshop: Integrative Primary Care
Location: West Virginia Psychological Association, Fall Event (WV)
Date: September 2010

Clinical Workshop: Besides Alzheimer's Disease: Vascular and Lewy Body Dimensions
Location: West Virginia Psychological Association, Fall Event (Charleston, WV)
Date: September 2009

Clinical Workshop: Psychological Assessment and Intervention in Primary Care
Location: Ohio Psychological Association Spring Event (Columbus, OH)
Date: June 2009

Clinical Workshop: Advanced and Collaborative Case Formulation and Conceptualization
Location: The Convention for the Advancement of Behavioral and Cognitive Therapies
(Orlando, Florida)
Date: November, 2008

Clinical Training: Suicide Prevention
Location: West Virginia Suicide Prevention Conference (Charleston, WV)
Date: June, 2008

Clinical Workshop: Acceptance and Commitment Therapy for Anxiety Disorders
Location: The Convention for the Advancement of Behavioral and Cognitive Therapies
(Orlando, Florida)
Date: November, 2007

RESEARCH EXPERIENCE

Research Experience during Predoctoral Internship
Project: An examination of the role of distracters in the loss of information during warm handoffs.
Faculty Supervisor: Dr. Elise Drake
Duties: Literature review
Duration: August 2010 - present

Doctoral Research Project/ Dissertation
Project: The application of the Lamaze Method in the treatment of acute pain: a comparison of alternative pain management techniques
Faculty Chair: Dr. Lindberg
Duration: August 2008-present

Research experience through collaboration with West Virginia University's Anxiety, Psychophysiology, and Pain Research Laboratory
Project: Participation in research and presentation (see presentations)
Faculty Advisor: Dr. Daniel McNeil
Duration: 2006, 2007, and 2008
Duties: Continued interaction and collaboration with the research laboratory and conduction of research projects in West Virginia area.

Senior Honors Thesis, West Virginia University Department of Psychology
Project: Oral-Facial Clefts and Psychosocial Implications
Thesis Supervisor: Dr. Daniel McNeil
Duration: May, 2005 – May 2006
Duties: Developed original research project to explore the psychological implications of social development of individuals affected with oral-facial clefts. Presentations to the Center for Craniofacial and Dental Genetics at University of Pittsburgh.

Research Assistant, West Virginia University Department of Psychology; Anxiety, Psychophysiology, and Pain Research Laboratory
Duration: August 2004 – May 2006
Supervisor: Dr. Daniel McNeil
Duties: Weekly meetings, running subjects, recording of lab meeting minutes, lab meeting readings, Institutional Review Board ethics and HIPPA training, presentation of studies, data entry and analysis, and collection of data with human research participants.

Student Temp, West Virginia University School of Dentistry; Research Assistant for the Center for Oral Health Research in Appalachia (NIDCR-funded projects).
Duration: June 2005 – February 2006
Supervisor: Dr. Richard Crout and Dr. Daniel McNeil
Duties: Attending weekly conference calls, conference minute recording, clerical tasks (e.g. copying, filing, delivering materials), checking of data, completion of travel, invoice, and other forms, aiding in grant writing, and training of other employees.

PUBLISHED ABSTRACT

McNeil, D. W., Crout, R. J., Weyant, R. J., Widoe, R. K., Martins, R. K., Marazita, M. L., Fluharty, K. K., & **Selby, E. M**. (2004). Toward an understanding of dental fear in Appalachia [Abstract]. *Journal of Dental Research, 84,* A-2002.

PRESENTATIONS

Selby, E. M. & Lindberg, M. (2009). *The application of the Lamaze Method in the treatment of acute pain: A comparison of alternative pain management techniques.* Poster presented at the Fall Conference for the West Virginia Psychological Association, Charleston, WV.

Selby, E.M., Ellis, T. E. & Mills, J. (2008). *Cognitive and Behavioral Implications of Parental Modeling of Health Behaviors.* Poster presented at the 42nd annual meeting of the Academy for Behavioral and Cognitive Therapies, Orlando, FL.

Mills, J., Ellis, T. E., & **Selby, E. M.** (2008). *Childhood influences and cognitive factors associated with sexual risk behaviors among young adults.* Poster presented at the 42nd annual meeting of the Academy for Behavioral and Cognitive Therapies, Orlando, FL.

Martins, R. K., McNeil, D. W., Weinstein, B., & **Selby, E. M.** (2008). *Reducing oral health disparities among pregnant women in Appalachia.* Poster presented at the 42nd annual meeting of the Academy for Behavioral and Cognitive Therapies, Orlando, FL.

Selby, E. M., McNeil, D. W., Weinstein, McCoy, M. E., and B. J., Marazita, M. L. (November, 2007) *Fears of negative evaluation and other social anxieties associated with oral-facial clefts: A cross-cultural comparison.* Poster presented at the 41st Annual Convention of the Association for Behavioral and Cognitive Therapies, Chicago, IL.

Selby, E. M., McNeil, D. W., Weinstein, McCoy, M. E., and B. J., Marazita, M. L. (2006, November) *Fears of negative evaluation and other social anxieties associated with oral-facial clefts*. Poster presented at the 40th Annual Convention of the Association for Behavioral and Cognitive Therapies, Chicago, IL.

Selby, E. M., McNeil, D. W., Marazita, M.L., & McCoy, M. (2006, February) *Oral-facial Clefts and Psychological Implications: Gender differences in fear of negative and social evaluations.* Poster presented at the 3rd Annual Undergraduate Research Day at the Capitol, Charleston, WV.

Selby, E. M., McNeil, D. W., Marazita, M.L., & McCoy, M. (2005, April) *Oral-facial Clefts and Psychological Implications: Gender differences in fear of negative and social evaluations*. Paper presented at the 14th Annual Tri-State Psychology Conference, Morgantown, WV.

Fluharty, K. K., Perry, J. E., Martins, R. M., Widoe, R. K., **Selby, E. M**., Kyle, B.K., & McNeil, D. W. (2005, November). *Acceptance in conjunction with distraction as an effective approach to acute pain management.* Poster presented at the 39th Annual Convention of the Association for Behavioral and Cognitive Therapies, Washington, DC.

Fluharty, K. K., Perry, J. E., Martins, R. M., Widoe, R. K., **Selby, E. M**., Kyle, B.K., & McNeil, D. W. (2005, October). *Acceptance in conjunction with distraction as an effective approach to acute pain management.* Poster presented at the 2005 Eberly College of Arts and Sciences Graduate Student Research Poster Session, Morgantown, WV.

McNeil, D. W., Crout, R. J., Weyant, R. J., Widoe, R. K., Martins, R. K., Marazita, M. L., Fluharty, K. K., & **Selby, E. M**. (2005, March). *Toward an understanding of dental fear in Appalachia.* Poster presented at the annual meeting of the International Association for Dental Research, Baltimore, MD.

McNeil, D. W., Crout, R. J., Weyant, R. J., Widoe, R. K., Martins, R. K., Marazita, M. L., Fluharty, K. K., & **Selby, E. M. (**2005, February). *Toward an understanding of dental fear in Appalachia.* Poster presented at the Eleventh Annual West Virginia Section of the American Association for Dental Research: WVU School of Dentistry Research Day, Morgantown, WV.

Perry, J. E., Fluharty, K. K., Davis, A. M., McNeil, D. W., Martins, R. K., Widoe, R. K., Helfer, A. J., & **Selby, E. M.** (2005, March). *Coping with acute pain: Implications for dental and medical procedures.* Poster presented at the Annual Undergraduate Research Day at the Capitol, Charleston, WV.

TEACHING EXPERINECE

Practicum Instructor for Adult Psychological Assessment Practicum, Marshall University, Department of Psychology

Duration: Fall 2009, Spring 2009, Fall 2008, Fall 2007
Supervisor: Dr. Mulder
Duties: Lecture creation/preparation, classroom instruction, teaching of psychological assessments (MMPI-2, MCMI-III, WAIS-IV, WMS-3, WRAT-3, WIAT), grading of student assessment scoring ability, and supervision of student assessment administration.

Teaching Assistant for Psychology as a Profession, West Virginia University, Department of Psychology

Duration: Spring 2004
Supervisor: Dr. Jennifer Margrett
Duties: Lecture preparation, classroom instruction, activity preparation, PowerPoint creation, tutoring, grading papers, facilitation of large-group discussion, and clarification of course material.

Teaching Assistant for Research Methods in Psychology, West Virginia University, Department of Psychology

Duration: January 9, 2006 – May 2006
Supervisor: Dr. Strouse; Rebecca Ryan (graduate student)
Duties: independent lecturing, attending lab sessions, correcting assignments, tutoring and aiding students with APA style and assignments, lecture preparation, grade entering etc.

GRADUATE ASSISTANTSHIP

Graduate Assistant: PsyD Program and Course Development Project

Location: Department of Psychology, Marshall University

Duration: Summer, 2009
Duties: Creation of annual manuals the outline protocols for Psy. D. student responsibilities and training experiences during each year in the program; creation of course lectures, a syllabus, and protocol for future instructors of the Adult Advanced Assessment Practicum Course; and creation of protocols for completing doctoral comprehensive exams and portfolios.

Graduate Assistant on Undergraduate Psychology Advising Project
Location: Department of Psychology, Marshall University
Duration: Summer, 2008
Duties: Undergraduate outreach, creation of Marshall University Undergraduate Psychology Student Advising Manual (outlining the goals of program, the responsibilities and requirements for majors and for graduation, mentorship information, educational material regarding extracurricular activities in the department, and information regarding professional and academic development), creation of a user-manual for future advising staff working with undergraduate psychology majors.

Graduate Assistant of Psi Chi (Psychology Honorary)
Location: Department of Psychology, Marshall University
Duration: Spring, 2008
Duties: Undergraduate outreach, creation of Marshall University Psi Chi Chapter Manual (outlining the goals of Psi Chi, the responsibilities of officers, and organizational protocol), presentation of information about Psi Chi to undergraduates, presentation of essential relevant information to undergraduates (taking the GRE, making the most out of undergraduate school, and getting into graduate school), creation of Psi Chi promotional materials (pamphlet, poster, board).

Graduate Assistantship for PsyD Coordinator
Graduate Assistant Supervisor: Dr. Marianna Footo-Linz
Duration: Summer, 2007
Duties: Compilation of PsyD orientation materials, participation in Psy. D. orientation, and creation of materials for Head Start Consultation Program.

GRANTS

Eberly College of Arts and Sciences' Undergraduate Academic Enrichment Fund (2005 Fall and Spring Semester)

Eberly College of Arts and Sciences' Undergraduate Academic Enrichment Fund (2004)

OTHER FUNDING

The College of Liberal Arts (Graduate College and the Department of Psychology) funded a trip to present research at the Convention for the Advancement of Behavioral and Cognitive Therapies (ABCT) (Orlando, 2008)

The College of Liberal Arts (Graduate College and the Department of Psychology) funded a trip to present research at the Convention for the Advancement of Behavioral and Cognitive Therapies (ABCT) (Philadelphia, 2007)

The College of Liberal Arts (Graduate College and the Department of Psychology) funded a trip to present research at the Convention for the Advancement of Behavioral and Cognitive Therapies (ABCT) (Chicago, 2006)

HONORS AND AWARDS

Recipient of the Health Sciences Scholarship (2009)
Recipient of the Madelein Feil Scholarship (awarded to the most active/productive graduate students in the Marshall University Psy. D. Program), (2009)
Recipient of the Presidential Service Award (2007)
The Quin Curtis Award for Outstanding Undergraduate Student of 2006 (honor acknowledging the most active, involved, and productive graduating student)
Recipient of the Presidential Service Award (2006)
Recipient of the Council on Undergraduate Research Acknowledgement of Achievement in Research (2005)
Eberly College of Arts and Sciences' Academic Achievement Award (2004)
University of West Virginia, Member of the Psychology Honors Program (2004-2006)
Deans List, College of Arts and Sciences (2001 – 2006)

PROFESSIONAL HONOR SOCIETIES

West Virginia Psychological Association (WVPA (Fall 2008-present)
American Psychological Association, Student Affiliate (2004-present)
Association for Advancement of Behavioral & Cognitive Therapy, Student Affiliate (2004-present)
PsyD Student Organized Advisory Panel (chair, member of core panel) (Fall 2008-2010)
PsyD Student Organized Advisory Panel (Secretary) (Fall 2007-Spring 2007)
Psi Chi, National Honor Society in Psychology (2004 – 2010), Vice President (2005 – 2006)
West Virginia University Psychology Club member (2001- 2006), Vice President (2005 – 2006)

ACTIVITIES

Student Representative of the PsyD Committee Board
Location: PsyD Program, Department of Psychology, Marshall University
Duration: January 2007 – 2010
Duties: Represent and communicate student concerns and preferences to faculty and staff, participate in departmental development at the student and departmental level, and facilitate communication between students and faculty.

Core Panel Psy. D. Student Organized Advisory Panel (Chair)
Duration: August 2008- 2010
Location: PsyD Program, Department of Psychology, Marshall University
Duties: Attendance of three monthly meetings, act as primary reporter to general PsyD student body, communication of covered information to faculty in the PsyD committee meetings, discussion of student issues, and strive to improve student experiences and professional development.

Officer of Psi Chi, National Honor Society in Psychology (Vice President)
Location: Department of Psychology, West Virginia University
Duration: Summer 2005-Summer 2006
Duties: Attendance to weekly officer meetings, attendance to weekly faculty advisor meetings, attendance to monthly membership meetings, participation in service and departmental events and activities, creation of Psi Chi manual (aimed to advance organization efficiency and progress), and collaborate with other officers to carry out organizational demands.

Officer of Psy. D. Student Organized Advisory Panel (Secretary)
Duration: Fall 2004- Spring 2005
Location: Psy. D. Program, Department of Psychology, Marshall University
Duties: Attendance of monthly meetings, recordings of meeting discussion and events, communication of covered information to faculty, discuss student issues, and aim to improve student experiences and professional development.

REFERENCES

Dr. John C. Linton, Internship Director
West Virginia University School of Medicine
Department of Behavioral Medicine & Psychiatry
3200 MacCorkle Ave. S.E.,
Charleston, West Virginia 25304
(304) 388-1032
John.linton@camc.org

Dr. Marianna Linz
Position: Professor, Director of Clinical Training
Marshall University
One John Marshall Drive
Huntington, WV 25755
telephone: (304) 696-2774
E-mail: Linz@marshall.edu

Dr. Donna Midkiff
Position: Clinical Psychologist
River Park Hospital
440 13th Avenue
Huntington, WV, 25701

Telephone: 304-544-3457
Email: Donna.Midkiff@psysolutions.com

Dr. Pamela Mulder
Position: Professor, academic advisor
Marshall University
One John Marshall Drive
Huntington, WV 25755
Telephone: 304-696-2770
E-mail: mulder@marshall.edu