Antecedents and Consequences of Perceived Patient-Therapist Relationship on Motivation

and Physical Rehabilitation Change

A Thesis

Presented in Partial Fulfillment of the Requirements for the

Degree of Master of Science in Education

with a

Major in Movement and Leisure Sciences

in the

College of Graduate Studies

University of Idaho

by

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December 2017

Authorization to Submit Thesis

This thesis of Katherine Lee South Adams, submitted for the degree of Master of Science with a Major in Movement and Leisure Sciences and titled, "Antecedents and Consequences of Perceived Patient-Therapist Relationship on Motivation and Physical Rehabilitation Change," has been reviewed in final form. Permission, as indicated by the signatures and dates below, is now granted to submit final copies to the College of Graduate Studies for approval.

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Abstract

The purpose of this study was to: (1) examine the patient-therapist relationship and physical rehabilitation motivation, and (2) investigate the patient-therapist relationship and reported rehabilitation outcomes. A survey was developed examining six major hypotheses that was completed by 474 participants who were asked questions about their relationship with their therapist, mindsets, motivation and perceived rehabilitation outcomes. Significant differences were found between mindset clusters for both motivation and rehabilitation outcomes. The patient-therapist relationship was moderately correlated with patient motivation. Growth mindsets correlated with positive relationships while fixed mindsets correlated negatively with therapeutic relationships. Identified and intrinsic behavioral regulation were significant predictors of adherence to rehabilitation protocols and perceived change. Patient-therapist gender match was used as a moderator and significant differences were found between groups for the percent variance of motivation explained by the relationship, male patients with male therapists accounting for almost three times the variance of the other gender combinations. More research seems needed to expand the body of knowledge in psychology of physical rehabilitation.

Acknowledgements

I would like to express my gratitude to my major professor, Damon Burton. Thank you for all of your help and encouragement with writing this thesis. I would not have been able to finish this thesis without you! To my committee members, Tony Pickering, Julie Son, and Jayme Baker, thank you so much for your support, mentorship and valuable insights. Working and discussing this project with you all made the experience incredibly fun.

To my husband, Orrin, who was so supportive and enthusiastic in talking about ideas, results and stories from the experience for a countless number of hours. Thank you so much for your love, support and encouragement.

I am so grateful to each one of you for everything you have done. I could not have done this without you.

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Chapter 1: Introduction

Imagine you have a stroke, resulting in a severe disability and the need for several years of multiple types of rehabilitation therapy. Two therapists are presented as options for physical therapy. The first is kind, warm, understanding and genuine. The second seems cold, demanding, fails to understand the patient's needs, and possibly is even untrustworthy. Which therapist would you prefer? The patient-therapist relationship has been researched extensively in psychotherapy, indicating that the relationship can seriously affect patient motivation, adherence and outcomes. However, while millions of Americans participate in various types of physical rehabilitation each year, little research has been conducted to determine what effects the patient-therapist relationship might have on patient motivation in therapy and their rehabilitation outcomes (Hall, Ferreira, Maher, Latimer, & Ferreira, 2010).

Chapter 2: Literature Review

Patient-Therapist Relationship

Carl Rogers (1992) believed that for a positive change to occur in counseling therapy, the therapist must be (a) congruent, (b) have an unconditional positive regard for their patient, and (c) have an empathetic understanding of the patient. Congruence refers to the patient's perception of their therapist's honesty and genuineness. Positive regard is the degree to which a therapist "likes" their patient, and unconditionality refers to the stability of that regard. Finally, empathetic understanding refers to whether the therapist understands the situation and the needs of the patient. Rogers' therapeutic approach was known as the 'patient-centered model' and suggests that a more positive patient-therapist relationship early in therapy is vitally important and should result in a greater beneficial change over time (Barrett-Lennard, 2015). Since Rogers' initial development of the patient-centered therapy model, a great deal of research has been conducted examining the effects of the patient-therapist relationship and psychotherapy outcomes (Pinto et al., 2012).

Barrett-Lennard (1962) took Rogers' work further and identified four main constructs necessary for a beneficial patient-therapist relationship, including: (a) level of regard, (b) empathy, (c) unconditionality of regard, and (d) congruence (Barrett-Lennard, 2015). "Level of regard" indicates the extent to which the patient believes their therapist has positive or negative feelings toward them. "Empathy" refers to the extent the patient believes their therapist understands them, including accurately interpreting communication and the patient experience. "Unconditionality of regard" is the patient's perception of how consistent their therapist's level of regard is for them. In other words, does the patient believe that their therapist has a constantly changing opinion of them? Finally, according to Barrett-Lennard

(2015), "congruence" refers to therapist honesty, directness and sincerity as perceived by the patient. A high level of congruence can be interpreted as the patient perceiving their therapist as being genuine, or their "willingness to be known" (Barrett-Lennard, 2015).

Psychotherapy Relationship Outcomes

Psychological aspects of the patient-therapist relationship have major implications for program adherence (Hall et al., 2010; Pinto et al., 2012). Olan (2007) investigated reasons given for clients discontinuing counseling therapy and found that participants who discontinued treatment viewed their therapists as unkind, critical, authoritarian, disrespectful, and poor listeners. On the other hand, clients who persisted in therapy treatment viewed their therapists as kind, honest, friendly, respectful, and understanding. The study concluded that if patients perceive unfavorable qualities in their therapist, they may choose not to return for more sessions. In essence, the therapeutic relationship was indicated as an important factor in program adherence.

Multiple meta-analyses (Hall et al., 2010; Pinto et al., 2012; Martin, Garske, & Davis, 2000) have shown that a more positively rated patient-therapist relationship results in both increased adherence and better outcomes. The patient-therapist relationship is also referred to as the "therapeutic alliance," and the constructs of collaboration, affective bond, agreement, trust and empathy have been found to have significant effects on improved patient outcomes (Pinto et al., 2012). In fact, some researchers believe that relationship could be responsible for up to 50% of the positive benefits of psychotherapy (Horvath, 2001), and that the relationship with one's therapist is "one of the keys, if not *the* key, to the change process" (Bordin, 1979).

Therapeutic Relationship and Physical Rehabilitation Outcomes

According to Hall et al. (2010), most of the research examining the effects of the patient-therapist relationship have been conducted in psychotherapy whereas only limited research has been conducted in physical rehabilitation. However, Hall et al. (2010) indicated that significant relationships have consistently been found between positive patient-therapist relationships and improved outcomes including pain reduction, decreased disability levels, and satisfaction with physical rehabilitation treatment. One limitation (Hall et al., 2010) in the physical rehabilitation research is the wide variety of instruments used to assess the patient-therapist relationship. According to Hall and colleagues (2010), the psychometric properties of many physical rehabilitation instruments have not been examined using protocols consistent with contemporary instrument development standards, even though they may work well for a psychotherapeutic setting.

Some practitioners assume that the focus of treatment is pain relief, and that with relief comes improvement in emotions. Indeed, Cruz, Moore, and Cross (2012) found that clinicians are likely to conduct their treatment "as a purely cognitive and clinician-centered process." However, Pincus (2006) believes that the psychology of both the practitioner and the patient interact, and that the way they interact will determine patients' behavior such as adherence to treatment protocol, and specific clinical outcomes. Pincus (2006) concludes that it is clear psychological factors matter, but the real question now is which of the psychological factors make the greatest impact.

The patient-practitioner relationship has also been frequently examined in medical contexts. Chu and Tseng (2013) found that patients in orthopedic surgery settings who rated their practitioners more positively on the Barrett-Lennard Relationship Inventory (BLRI)

demonstrated higher levels of health literacy, indicating a better understanding of the information pertaining to their surgeries. Another intervention conducted by Moghaddasian, Dizaji, and Mahmoudi (2013) was designed to increase nurses' empathy skills. Using the BLRI empathy subscale, they found that a higher level of nurse empathy correlated with an increased ability for family members to care for their loved ones at home.

David and Larson (2016) conducted a qualitative study examining athlete perception of athletic trainer (AT) empathy and found that the AT's and patient's ratings of AT empathy differed greatly. Moreover, ATs' self-reported empathy did not contribute greatly to patient outcomes, although patient-perceived empathy did (David & Larson, in press). Following injury, athletes reported benefitting the most from the social support of their AT than other members of their team or coaching staff. Clement and Shannon (2011) suggested one reason for this finding may be that ATs spend a great deal of time with the injured athletes and develop a trusting relationship.

McCombie, O'Connor, and Schumacher (2015) investigated occupational therapists' (OT) and physical therapists' (PT) perceptions of empathy and assertiveness. Both professions rated themselves and each other, and results revealed that, on average, PTs were rated as more assertive than OTs by both professions. OTs were rated higher in empathy than in assertiveness, but PTs rated themselves as equal in both empathy and assertiveness. Tomson, Hassenkamp, and Mansbridge (1997) utilized the BLRI to assess whether empathy of therapists increased with greater amounts of field experience, and results revealed that the amount of clinical practice experience and education levels correlated with empathy.

Recently, Messina et al. (2013) used the Italian version of the BLRI to assess patient-perceived empathy in a counseling psychology context. Using electrodermal activity (EDA), a

relationship was demonstrated between patient-perceived empathy and skin conduction. These findings are important because they suggest that patient-therapist interactions can affect physiological responses in addition to psychological ones. Additionally, Lee and Lin (2009) found that diabetic patients' trust of their healthcare providers was positively correlated with improved outcomes such as blood glucose, lipids, BMI, and general health outcomes.

This study's first research question was whether the patient-therapist relationship influenced patient motivation in physical rehabilitation, and secondarily whether the relationship relates to patient outcomes. Hypothesis 1 predicted that more positively rated patient-therapist relationships should be related to greater rehabilitation motivation. Hypothesis 2 stated that the patient-therapist relationship would also be related to ratings of perceived positive rehabilitation change.

Antecedents of the Patient-Therapist Relationship

Mindsets: Patient's View of the Nature of Ability

According to Dweck (2000), mindsets represent one's perception of the nature of talent or ability. A growth mindset represents the belief that one's abilities can be improved with effort, and that skill is not just a characteristic that people are born with (Dweck, 2000). An individual with a growth mindset would say that one can always improve their skills if they try hard enough. Biddle, Wang, Chatzisarantis and Spray (2003) suggested that two constructs, learning and improvement, form the growth mindset because they represent the ability to always learn more and get better at an activity.

Dweck (2000) postulates that a fixed mindset focuses on the belief that ability/skill levels are predetermined and unchanging. With this mindset, individuals believe that they are born with a certain amount of ability, and those who do not achieve success are simply

naturally low on requisite talent and/or skills. According to Biddle and colleagues (2003), stable and gift are two subdimensions that make up the fixed mindset because they represent the ideas that you are born with (or without) certain skills and abilities and can do little to change those qualities.

Impact of Mindsets on Rehabilitation Relationships

Dweck (2000) believed that individuals with a growth mindset were likely to have more positive relationships, whereas fixed mindset individuals would experience more negative relationship effects. People who have a fixed mindset often communicate less effectively, thus developing less viable working relationships because they believe they have limited ability to enhance the quality of their relationships (Dweck, 2000). Additionally, growth-minded individuals are more likely to seek out relationships that help them to learn and improve (Dweck, 2000). Therefore, the mindset of a patient may influence the patient-therapist relationship. This study is interested in exploring whether patient mindsets correlate with the quality of the patient-therapist relationship. Hypothesis 3 predicted that patients who are more growth-minded should rate the quality of the patient-therapist relationship more positively than would more fixed-mindset patients.

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Consequences of Patient-Therapist Relationship

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This study examined two possible consequences of the patient-therapist relationship, including: motivational behavioral regulation and change in targeted physical condition.

Motivational Behavioral Regulation

Self-determination theory (SDT) is a theory describing behavioral regulation of human motivation. According to Ryan and Deci (2002), SDT assumes that people are inherently growth-minded and want to be challenged and improve. However, that does not mean that

people cannot be extrinsically motivated. Deci and Ryan (2000) believe that people are motivated either because they personally value an activity or because other external forces are driving them. Individuals have three basic needs to thrive in their environment, which include competence, relatedness and autonomy (Ryan & Deci, 2002). Deci and Ryan (2000) postulate that individuals who are motivated by factors outside of themselves and have less autonomy are less likely to adhere to the chosen activities, whereas individuals who act based on personal interest and are more autonomous are much more likely to maintain targeted behaviors. SDT identifies six types of behavioral regulation motivation, which are influenced by an individual's perceived autonomy and competence. In other words, behavioral regulation type is affected by the level of autonomy individuals believe they have over the situation and how well prepared they feel to meet the challenge presented (Ryan & Deci, 2002). Standage and Ryan (2012) believe that events which are more controlling are likely to cause frustration enough to weaken the autonomy and intrinsic motivation of individuals which can lead to poor adherence to exercise.

According to Markland and Tobin (2004), amotivation refers to a lack of motivation, characterized by one being satisfied with not intending to act. Often times, amotivated individuals do not see participation in the activity as important. Conversely, intrinsic motivation is based on one acting purely for the satisfaction and joy they gain from the activity itself (Standage & Ryan, 2012). Four other types of behavioral regulation are categorized as extrinsic motivation External, introjected, identified, and integrated regulation are all considered to be part of the extrinsic motivation continuum, with external and introjected regulation being the more controlled, and integrated and identified regulation being the more autonomous (Standage & Ryan, 2012).

Impact of Relationship on Behavioral Regulation

This study examined whether different types of behavioral regulation would relate to patient-therapist relationship and targeted rehabilitation change. Hypothesis 4 stated that more autonomous types of motivation (i.e., intrinsic, integrated, and identified) would relate to more positive patient-therapist relationships than would more controlled types of behavioral regulation (i.e., external and introjected).

Targeted Treatment Change

Ryan and Deci (2008) identified autonomy as a vital contributor to enhanced outcomes and maintenance of behaviors in psychotherapy. Three of the major four dimensions identified by Barrett-Lennard (1962) as critical for positive therapeutic change to occur have been recognized by other researchers as critical for autonomy in therapy including a) unconditional regard, b) therapist warmth and c) genuine interest of the therapist (Ryan & Deci, 2008; Assor, Roth, & Deci, 2004). In fact, Assor et al. (2004) believed that a conditional level of regard could cause serious negative outcomes for patient well-being, making unconditionality of regard a particularly important aspect of relationships.

Previous research (Deci & Ryan, 2000; Ryan & Deci, 2008; Assor et al., 2004) suggests that individuals with more autonomous types of motivation are more likely to adhere to exercise protocols. Chan, Lonsdale, Ho, Yung, and Chan (2009) demonstrated that patients in physical therapy were more likely to adhere to rehabilitation protocol when they experienced more autonomy. Ideally, individuals who exhibit more adherence to a protocols would be more likely to experience positive rehabilitation change. Hypothesis 5 predicted that more autonomous types of behavioral regulation would be related to one's perceived adherence to the rehabilitation protocol. Hypothesis 6 postulated that autonomous forms of

behavioral regulation would be associated with more positive patient-perceived rehabilitation change outcomes than would more controlled behavioral regulation forms.

Purpose

The purpose of this study was to determine whether the patient-therapist relationship is associated with patient mindsets and whether relationship consequences are related to rehabilitation motivation and program adherence. Additionally, this study assessed whether the patient-therapist relationship is related to perceived targeted rehabilitation change.

Chapter 3: Method

Research Design and Participants

      A survey design was utilized to examine study hypotheses. A survey was created in Qualtrics for participants to complete online. Individuals were contacted using Research Match, an online participant solicitation network. Those respondents who agreed to participate were contacted with information about how to access the one-time Qualtrics survey comprised of six instruments. Once a minimum of 500 responses were collected, the data file was downloaded from Qualtrics for analysis in SPSS and AMOS.

      Participants consisted of previous rehabilitation patients 18 years and older from the United States contacted through Research Match and therapy clinics who agreed to display participation flyers. Participants were sought out who had completed a minimum of three visits with one primary therapy provider in physical therapy (PT), occupational therapy (OT), or athletic training (AT).

Instruments

      Barrett-Lennard Relationship Inventory (BLRI). The Barrett-Lennard Relationship Inventory (BLRI) is based on the work of Carl Rogers and was designed to assess the patient-therapist relationship from the patient's point of view in counseling therapy (Barrett-Lennard, 1962). The instrument utilizes an item format with a fill-in-the-blank in which the first name or nickname of the person's therapist is read in the blank. This format allows flexibility in the usage of the instrument for a wide variety of settings without drastic alteration (Barrett-Lennard, 2015). Sample questions from the BLRI OS-40 form, include: (a) "_____ respects me." (b) "_____ realizes what I mean even when I have difficulty in saying it" (Barrett-Lennard, 1962). Responses are rated using a six point Likert scale, from +3 ("YES, *I*

strongly feel that it is true"), to -3 ("NO, *I strongly feel that it is not true*"). The response

options do not include a zero midpoint score for "neutral."

BLRI questions provide flexibility by filling in the first name or nickname of the

therapist of interest (i.e., counseling therapist or medical practitioner). Using the first name of

the individual also makes the questionnaire more personal for the participant and may help

them to remember their feelings more accurately. The OS-40 form is comprised of 40 items,

including 10 items each in the four subscales of (a) level of regard, (b) unconditionality of

regard, (c) empathy and (d) congruence (Barrett-Lennard, 2015). Little work has been done

since 2000 to assess the validity of the BLRI. Simmons, Roberge, Kendrick and Richards

(1995) conducted a review of research using the instrument, and concluded that the BLRI is a

strong instrument for measuring humanistic aspects of relationships in medical education and

patient care. Cronbach's alpha for the overall instrument was 0.67, and the empathy subscale

had an alpha value of 0.84 (Chu & Tseng, 2013). Zuroff (2000) found that the Cronbach's

alpha for three of the scales combined (level of regard, congruence, and empathy), the

composite score was 0.95, but scores for each subscale were not individually reported.

Because confirmatory factor analysis was not widely used in 1962, the psychometric

attributes of the BLRI are not fully understood.

Conceptions of the Nature of Athletic Ability Questionnaire Version 2 (CNAAQ-2). The CNAAQ-2 was developed by Biddle, Wang, Chatzisarantis, and Spray (2003) to

assess mindsets, particularly "growth" and "fixed". The instrument consists of 12 items,

including 3 items in each of the four subscales (a) stability, (b) gift, (c) learning and (d)

improvement. The four constructs can be combined to evaluate whether one has a growth or

fixed mindset. "Stable" and "gift" combine to create the concept of a fixed mindset, and

"learning" and "improvement" comprise the growth mindset. Through confirmatory factor analysis, the CNAAQ-2 has been found to have a high level of factorial validity among varying ages and genders (Biddle, Wang, Chatzisarantis, & Spray, 2003; Wang, Liu, Biddle, & Spray, 2005). All subscale values for Cronbach's alpha were above 0.70 (Biddle, Wang, Chatzisarantis, & Spray, 2003; Wang, Liu, Biddle, & Spray, 2005). An example of a question from the CNAAQ-2: "In sport/PE, if you work hard at it, you <u>will always</u> get better." Responses are recorded on a five point Likert scale from 1 ("Strongly Disagree") to 5 ("Strongly Agree"). The instrument will be slightly modified for a rehabilitation population. For example: "In rehabilitation therapy, if you work hard at it, you <u>will always</u> get better."

Behavioral Regulation for Exercise Questionnaire Version 3 (BREQ-3). The BREQ-3 is a questionnaire developed by Markland and Tobin (2004) and Wilson, Rodgers, Loitz, and Scime (2006) based on SDT and assesses six types of behavioral regulation for exercise. Specifically, the instrument measures amotivation, external, introjected, identified and integrated behavioral regulation, and intrinsic motivation (Markland & Tobin, 2004). The BREQ-3 shows strong factorial validity resulting from confirmatory factor analysis (Markland & Tobin, 2004; Wilson et al., 2006). Cronbach's alpha for all subscales was found to be greater than 0.70 (Markland & Tobin, 2004). The instrument is comprised of a series of 24 statements to measure six 4-item subscales. Behavioral regulation items are responded to on a five-point Likert scale ranging from 0 (Not true for me) to 4 (Very true for me). A sample question is: (a) "It's important to me to exercise regularly." Physical rehabilitation often includes a great deal of exercise, which makes the BREQ-3 a good candidate to retool for measuring behavioral regulation motivation of therapy patients in recovery from injury.

Global Rating of Change Scale. The Global Rating of Change Scale is a scale commonly used for research in rehabilitation as a measure of perceived physical rehabilitation change. The scale consists of a single question which simply asks, "Please rate the overall condition of your injured body part or region FROM THE TIME THAT YOU BEGAN TREATMENT UNTIL NOW". The response options range from -7 ("A very great deal worse") to +7 ("A very great deal better"), on a 15-point Likert scale including a neutral choice, 0 ("About the same").

Physical Rehabilitation Adherence Scale. No self-reported rehabilitation adherence instrument appropriate for this survey was found, so four general adherence questions were created (see in Appendix G). An instrument was developed for this study to measure patient adherence, called the Physical Rehabilitation Adherence Scale. A scale called the Sport Injury Rehabilitation Adherence Survey (SIRAS), was previously developed to be completed by the treating therapist (Kolt, Brewer, Pizzari, Schoo, & Garrett, 2007). However, the survey was designed to be completed by a therapist, not a patient. Two questions from the SIRAS were considered applicable to this study and were reworked for use in the Physical Rehabilitation Adherence Scale. Two more items were created to form this four-item instrument.

Physical Rehabilitation Demographic and Background Questionnaire. Several demographic and background questions were developed for use in this survey in order to analyze results among varying populations (see Appendix H). The questionnaire asked about topics such as age, gender, rehabilitation progress and type of injury.

Procedure

Following IRB approval, participant solicitation was approved by Research Match based on a simple proposal. Permission was granted and invitations were distributed to 12000

individuals through Research Match who met inclusion criteria. Solicited participants who did not initially respond were contacted four times for follow-up at one week intervals. 851 individuals agreed to participate and were emailed a link to the Qualtrics survey. The survey included the BLRI, CNAAQ-2, BREQ-3, GRoC, Physical Rehabilitation Adherence Scale and Physical Rehabilitation Demographic and Background Questionnaire. The CNAAQ-2 and BREQ-3 were retooled for a rehabilitation population. Three inclusion criteria were be used to narrow our sample, including (a) patients must have participated in a minimum of three sessions of therapy, (b) the therapy must be physical therapy, occupational therapy, or athletic training therapy, and (d) participants have worked with one primary therapist.

Chapter 4: Results

Data Cleaning

A total of 561 responses were collected and the data file was downloaded from Qualtrics for analysis in SPSS and AMOS. Any responses from individuals who did not meet the inclusion criteria for the target population were removed (n=64), and personally identifying information and missing data were removed from the file. Other responses were removed due to incomplete responses on the BLRI portion of the survey (n=23).

Exploratory Factor Analysis (EFA) and Exploratory Covariance Modeling (ECM) were used to assess the validity of the BLRI and the other three instruments. Modification indices were consulted in combination with substantive considerations to adjust the factor structure in order to improve fit for a rehabilitation population.

Additionally, subscales from the BREQ-3 were tested for normal distribution and revealed that amotivation and external regulation were extremely skewed. Due to their skewness, these two subscales were removed from analysis.

Descriptive Statistics

After cleaning, 474 responses remained in the sample and were used for analysis. Females were overrepresented in this sample (n = 359; 75.7%) compared to males (n = 94; 19.8%), with 21 participants not responding to the gender question (4.4%). The mean age of participants was 52 (±15.2) years. Hicks, Cook, Dulas and Clem (2004) demonstrated that these characteristics are consistent with results from demographic research conducted in the physical therapy profession. On average, participants reported working directly with their primary therapist, rather than a therapy aide, 81% of the time. Additionally, 14.8% (n = 70

participants) reported being ahead of schedule on their rehabilitation, 56.8% (n=269) reported being right on schedule and 23.6% (n = 112) reported being behind schedule.

Exploratory Factor Analysis

EFA was used to determine the validity of the BLRI factor structure for this rehabilitation sample, in part, because the instrument was developed in 1962 for use in psychotherapy research and no confirmatory factor analysis (CFA) could be found in the literature to provide model fit indices (see Table 4.1). Variables with low loadings were eliminated stepwise from the analysis. The final EFA resulted in three factors that included a five-item regard subscale, a four-item unconditionality subscale and a three-item congruence subscale. No empathy items grouped into a meaningful factor, so that hypothesized factor was therefore eliminated from the instrument.

Exploratory Covariance Modeling Analysis

Exploratory Covariance Modeling (ECM) was conducted to further assess the validity of the BLRI by determining overall model fit. ECM follows confirmatory factor analysis procedures, but uses the sample that was utilized for EFA instead of a new sample. A second-order model with good fit indices (CFI = .955; TLI = .931; RMSEA = .066; Chi square = 157.492; df = 51; p = .000) was identified using the three subscales of regard, unconditionality and congruence (see Figure 4.1).

Cluster Analysis

Using the K-means cluster analysis function in SPSS, two cluster groups were created based on the four CNAAQ-2 subscale scores. One group, which was labeled "growth," scored high in the learn and improve subscales and low in the stable and gift subscales. The second

group, labeled "fixed," scored high in stable and gift but low in learn and improve subscales (see Figure 4.2).

T-Test Results: Comparing Mindset Clusters for GRoC Scores

A t-test comparing two CNAAQ-2 subscale clusters on GRoC scores was performed, and results revealed a significant group difference (t (457) = 5.29 ; p < .001). for the Global Rating of Change scale scores. The growth mindset group reported significantly higher GRoC scores (M= +4.42, SD=2.68) compared to the fixed mindset group (M= +2.96, SD=3.21).

Multivariate Analysis of Variance: Comparing Mindset Clusters for Four Behavioral Regulation Subscales

Mindset groups derived from cluster analysis were analyzed with multivariate analysis of variance (MANOVA) to determine cluster differences in behavioral regulation. MANOVA results revealed significant overall cluster differences (Wilks' λ = .91; F (4,450) = 10.81; p < .001). Followup univariate analysis of variance results demonstrated significant cluster differences for all four behavioral regulation subscales (see Table 4.2) Growth mindset clusters showed significantly greater scores than the fixed mindset cluster for all four types of behavioral regulation, with the highest eta^2 scores for identified and intrinsic regulation.

Multiple Regression

Multiple regression was used to determine support for three hypotheses examined in this study. First, Hypothesis 2 was examined, which focused on the variance in GRoC scores accounted for by modified BLRI subscales. BREQ-3 scores were then used to predict adherence results for Hypothesis 5. Finally, Hypothesis 6 was tested by predicting GRoC scores using BREQ-3 subscales.

Modified BLRI and GRoC. First, the influence of modified BLRI therapeutic relationship subscales were used to predict GRoC scores for change in patient condition. While all variables correlated positively and significantly with patients' perceived change outcomes, regard accounted for the greatest patient change and was the only significant predictor when all three modified BLI subscales were considered simultaneously. Together, the BLRI subdimensions accounted for only 3.4% of the variance in GRoC scores (see Table 4.3).

Behavioral regulation and adherence. Table 4.4 displays results for the amount of variance accounted for by four BREQ-3 behavioral regulation subscales in a single self-reported program adherence score. Correlations results revealed a significant but moderate negative correlations between total adherence and three autonomous behavioral regulation subscales (i.e., identified, intrinsic and integrated). When all behavioral regulation subscales were considered, identified and intrinsic regulation were the only significant predictors in the regression equation. The BREQ-3 subscales accounted for 10% of the variance in adherence scores. Table 4.5 shows results for another multiple regression analysis which compares the BREQ-3 subscales with the second item from the adherence scale, which asks how often the patient does the recommended exercises at home. Together, the BREQ-3 subscales accounted for 8% of the variance in adherence Item 2, with identified and introjected regulation the only significant predictors of adherence Item 2.

Behavioral Regulation and GRoC scores. The four BREQ-3 behavioral regulation subscales were used to predict perceived patient self-reported GRoC scores (see Table 4.6). Identified, intrinsic and integrated regulation subscales revealed significant moderate positive correlations with GRoC scores. Introjected regulation showed a significant but weaker

positive correlation. Identified and intrinsic regulation were the only significant predictors, with the BREQ-3 subscales accounting for 14.6% of the variance in GRoC scores.

Canonical Correlations

Canonical correlation was used to assess two more hypotheses. Hypothesis 1 addressed the relationship between modified BLRI and BREQ-3 scores. Hypothesis 3 focused on mindset orientations and the modified BLRI subscale scores.

Modified BLRI and modified BREQ-3 behavioral regulation subscales. Canonical correlations were conducted to test three different hypotheses. First, canonical correlation was performed between a set of relationship and a set of behavioral regulation variables. The relationship variables included BLRI revised subscales of regard, unconditionality and congruence, whereas the motivation variables included four modified BREQ-3 subscales of intrinsic, integrated, identified and introjected regulation. Table 4.7 shows results for this analysis that resulted in one interpretable canonical correlation of .42 (p < .001) in which the three autonomous behavioral regulation subscales loaded negatively on the first variable set and the three BLRI subscales loaded negatively on the second variable set. Positive patient-therapist relationships were correlated with scores for increasingly autonomous types of behavioral regulation.

Mindset and modified BLRI subscales. Canonical correlation analysis was conducted to examine the relationship between a set of four mindset subscales (i.e., stable, gift, learn and improve) and the same set of three modified BLRI relationship subscales. Two canonical variates were significant and interpretable (see Table 4.8). The first variate demonstrated a correlation of .263 (p < .001) and the second variate resulted in a correlation of .233 (p < .001). While these results were statistically significant, the correlations are weak.

The first canonical variate revealed that when fixed subscales were high and growth scores were low, all three relationship variables tended to be low as well, and vise versa. For the second variate, only the improve subscale loaded negatively on the mindset set whereas unconditionality loaded positively and regard negatively on the relationship set, revealing that when the improve subscale is low, regard is also low and unconditionality is high.

Canonical correlations were used to compare the "fixed mindset" subscale set with the relationship subscale (see Table 4.9) as well as "growth mindset" subscales with the relationship set (see Table 4.10). Results revealed that when the fixed mindset set of variables (i.e., stable and gift) were negative they significantly correlated with positive relationship variables, although the overall correlation of .231 was weak. For the growth set, a strong negative improve subscale loading was positively related to negative loadings for regard and congruence, even though the overall correlation of .233 was weak.

Structural Equation Modeling

BLRI and motivation. Structural Equation Modeling (SEM) was conducted using AMOS to determine the relationship between factors from the BLRI and patient motivation (see in Figure 4.3). Variables of the therapeutic relationship accounted for 10% of the variance in patient motivation.

Emerging hypothesis. An emerging hypothesis was tested using SEM to determine whether patient-therapist gender match moderated how the BLRI scores influenced motivation in rehabilitation. To assess gender match as a moderator, four groups were created, including: (1) Female patients with female therapists, (2) female patients with male therapists, (3) male patients with female therapists and (4) male patients with male therapists. For female patients working with female therapists, the relationship accounted for 15% of the variance in

patient motivation (see Figure 4). Among female patients working with male therapists, the

relationship accounted for 3% of the variance in motivation (see Figure 4.5). For male

patients working with female therapists, the relationship accounted for 11% of the variance in

motivation (see Figure 4.6). Finally, for male patients working with male therapists, the

relationship accounted for 41% of the variance in motivation, a finding that is strikingly

different than for the other three groups (see Figure 4.7).

Chapter 5: Discussion

Do Positive Therapeutic Relationships Enhance Rehabilitation Motivation?

Study results provide moderate support for Hypothesis 1. Table 4.7 demonstrates

negative patient-therapist relationships being correlated moderately ($r = .42$; $p < .001$) for

autonomous motivation. The regard aspect of the patient-therapist relationship had the most

negative effect on patient motivation. Accordingly, more autonomous types of motivation

were the most negatively influenced by a poor relationship. These findings make sense

because the nature of intrinsic regulation is its inherent enjoyment and interest in an activity

(Deci & Ryan, 2000). If a therapist fails to be perceived as warm, trustworthy and

unconditional towards their patients, the patients likely would not look forward to their

therapy appointments and be less likely to be motivated and enjoy the process. One survey

participant offered the comment that (she or he) "felt like a number" to their therapist.

Positive or neutral patient-therapist relationships may not have as large of an effect, but

therapists should be careful to ensure that their relationships are not negative because negative

relationships may have a larger more adverse impact on patient rehabilitation motivation.

Do Therapeutic Relationships Enhance Rehabilitation Outcomes?

Hypothesis 2 focused on whether patient-therapist relationships would improve

perceived rehabilitation outcomes. Multiple regression results provided little support for

Hypothesis 2, accounting for only 3% of explained variance (see Table 4.3). Although the

value was statistically significant, it probably is not practically meaningful. However, results

from Table 4.6 demonstrated that motivation can account for up to 14.6% of GRoC scores, so

there may be ways in which a therapist can enhance patient motivation, not measured by the

subscales in the BLRI, which may, in turn, improve GRoC scores for positive rehabilitation

for positive rehabilitation change.

Do Growth-Minded Patients Rate their Therapeutic Relationship More Positively?

The third hypothesis examined whether patients who were more growth-minded would rate the quality of their therapist relationship more positively than would more fixed-mindset patients. Tables 4.8 and 4.9 revealed correlations between mindsets and therapeutic relationship. The results align with the results also found in Table 4.8, supporting more fixed-mindset individuals reporting more negative patient-therapist relationships. Whether mindsets influenced the patient-perceived therapeutic relationship, or vice versa, cannot be determined from the data collected in this study. However, Dweck (2000) discovered that growth-minded individuals were less concerned with validation from their relationships than were their fixed-minded counterparts and they also were more likely to view relationships in a way which helped them to learn and improve.

Do More Autonomous Forms of Behavioral Regulation Promote More Positive Therapeutic Relationships?

Hypothesis 4 predicted that more autonomous types of behavioral regulation would be related to more positive patient-therapist relationships than would the more controlled types of behavioral regulation strategies. Canonical correlation results provide moderate support for this hypothesis by demonstrating that the more negative the therapeutic relationship, the more negatively the three autonomous types of behavioral regulation were rated (see Table 4.6). The relationship variables assessed by the BLRI are passive traits of the relationship, and more active traits such as autonomy supportive behaviors were not included in the instrument. However, autonomy supportive behaviors of exercise professionals have been shown to enhance more autonomous types of behavioral regulation and improve outcomes in exercise interventions (Silva, Vieira, Coutinho, Minderico, Maatos, Sardinha & Teixeira, 2010). Had

the relationship section of the survey contained items relating to autonomy-supportive behaviors, a stronger correlation may have been found. This study's findings show that the more passive variables assessed by the BLRI do not have a large effect on types of behavioral regulation needed in physical rehabilitation.

Do More Autonomous Forms of Behavioral Regulation Enhance Rehabilitation Protocol Adherence?

Hypothesis 5 stated that more autonomous types of behavioral regulation should be related to perceived rehabilitation protocol adherence than more controlled forms. This hypothesis was weakly supported with the results from Table 4.4 which demonstrated identified and intrinsic motivation as accounting for 10.2% of the variance in self-reported adherence. According to Deci and Ryan (2000), the most autonomous form of behavioral regulation, intrinsic regulation, is based on one's enjoyment and engagement of an activity. The results show that when therapy is more enjoyable and engaging, patients are more likely to adhere to the rehabilitation protocol. However, identified regulation was a stronger variable than intrinsic regulation which aligns well with previous research in which identified regulation occurs when one consciously decides that an activity is consistent with their goals (Deci & Ryan, 2000; Standage & Ryan, 2012). When a patient attends therapy, they typically do not do so for recreational purposes and instead primarily participate in order to reach their goals of improving their injured body part, of which enjoyment may be a possible byproduct. Additionally, results from Table 4.5 showed that the BREQ-3 subscales accounted for 8% of the variance in adherence item 2, which asked about how often the patient did their recommended exercises at home.

Do More Autonomous Forms of Behavioral Regulation Promote Positive Patient Rehabilitation?

Hypothesis 6 predicted that autonomous forms of behavioral regulation would be associated with more positive patient-perceived rehabilitation outcomes than would the more controlled forms of behavioral regulation. This hypothesis was moderately supported. Identified and intrinsic behavioral regulation accounted for 14.6% of the variance in GRoC scores (see Table 4.4). Again rehabilitation patients have identified physical therapy as important to achieve their rehabilitation goals. Therefore, it makes sense that identified regulation was the most strongly correlated with outcome scores. Additionally, these results show that when therapy is more enjoyable and engaging (i.e., intrinsic), patients are likely to also report better outcomes. Thus, autonomy supportive therapeutic behaviors enhance more autonomous types of behavioral regulation and promote positive outcomes (Silva, et al., 2010). The results of this study further support SDT tenets that more autonomous regulation should result in better outcomes. Practitioners in rehabilitation fields should consider ways to incorporate autonomy into treatment in order to enhance patient motivation and eventually enhance outcomes.

Emerging Hypotheses

Mindsets and motivation. An emerging hypothesis was created during study analyses that differences might be found in motivation between growth and fixed-mindset individuals. All MANOVA results supported this hypothesis. Not only were growth mindsets associated with more overall motivation, but they were also significantly more positively correlated with more autonomous forms of behavioral regulation than were fixed mindsets (see Table 4.2).

Mindsets and perceived outcomes. T-test results demonstrated that individuals with a growth mindset report significantly better outcomes than did individuals with fixed mindsets. According to Dweck (2000), these results may be partially due to depression, because fixed mindset individuals respond to failure in a similar same way as individuals with depression, are more likely to experience depression, and experience more difficulty "bouncing back" from depression than are those with growth mindsets. Additionally, Patten, Williams, Lavorato and Eliasziw (2010) found that depression not only increased risk of injury, but that injury was also likely to cause major depressive episodes. Conversely, growth minded individuals are more likely to engage in activities directed towards improving and see positive benefits from such activities (Dweck, 2000). Results from this study revealing the enhanced outcomes arising from growth mindsets align with previous research and add to the growing body of knowledge supporting the benefits of a growth mindset (Dweck, 2000).

Patient-therapist gender match as a moderator of motivation. During the analysis stage of this study, a hypothesis emerged that patient and therapist gender compatibility may affect how the therapeutic relationship influences motivation. When patients had a female therapist, the variance in motivation explained by the relationship was relatively consistent between female and male patients (i.e., within 4%). One of the more interesting findings of this study was the large difference in variance in motivation accounted for by male and female patients when the therapist was male. The relationship accounted for 3% when the patient was female, but 41% when the patient was male. The results of this analysis show that for male patients, a relationship with a male therapist was vitally important to their motivation whereas for female patients with a male therapist, the relationship did not impact their motivation as much. For both genders, patients who were matched with the same gender therapist were

more motivated by the relationship than those matched with a therapist of the opposite gender. A possible reason was discovered through a comment made by a survey participant: "I feel this therapist is just doing a job and has little interest in helping an older woman. I feel he is only interested in helping those with sports injuries and those with cookie cutter problems." Further research should be conducted to investigate the reasons for these differences. Individual therapists' interests could play a role in their effectiveness. It is possible that males who enter physical rehabilitation professions are more likely to be interested in working with young athletes than with elderly females. Additionally, male therapists may be better able to motivate their male patients than female patients. The reasons for these findings are unclear and should be investigated further.

The answer could also partially be due to males' preferences in therapists. Magnusen and Rhea (2009) found that male athletes preferred male strength coaches and were less comfortable with female strength coaches. Females did not show this bias (Magnusen & Rhea, 2009). However, Fisher, Platts and Stopforth (2013) found that although having a personal trainer of an opposite gender may make concentration on exercise difficult, neither gender showed a preference in gender for their personal trainer. No such research has been conducted in the physical rehabilitation field, so it is difficult to know whether patients may have a bias towards gender in their therapists.

Whatever the reasons may be for these findings, it is important to consider how patients could be affected. Swinkels, Hart, Deutscher, van den Bosch, Dekker, de Bakker, and van den Ende (2008) investigated patient demographics for individuals in the United States being treated for lumbar spine and ankle sprain injuries and found that the mean age was 51.8 years, with 66.1% of all patients being 45 years or older. More women than men were treated

as well, with 62.8% of the patients being female (Swinkels, et al., 2008). Freedman, Wolf and Spillman (2016) found that while women are known to live longer than men, the gap is closing and women are no longer living more disability-free years than men, meaning that more of women's years are spent dealing with disability than men. According to Colby and Ortman (2014), the baby boomer generation, one of the largest generations in history, is about to make up a very large portion of the population aged 65 and older, and late-life disability is predicted to be at a high in the year 2030. These statistics show that disabled older women already make up a moderate portion of the therapy patient population, and their number is going to increase. More research should be conducted to determine the underlying reasons for the results of these gender match analyses in order for treatment providers to best accommodate for the needs of their patients.

Limitations

    BLRI. The BLRI had several limitations that impacted study results. First, the instrument had not previously been analyzed using CFA, which is why the factor analysis was assessed as a preliminary step in data analysis. Once EFA and ECM were conducted, many items had been removed including all items from the empathy subscale. Although the three remaining subscales did factor well and had much better fit indices, it is likely that important patient-therapist relationship dimensions for physical rehabilitation were missing which could have contributed more to the results of this study. Additionally, no CFA has previously been conducted on the BLRI to examine model fit and important factorial validity. Many negative comments were left in the comment box at the end of the BLRI section of the survey, such as "these questions feel like they are about a dating relationship" and "these questions sound more like an intimate relationship than one between a patient and a therapist." The BLRI was

created in 1962, when Cronbach's alpha values were heavily relied upon for assessing the reliability of an instrument and a great number of items increased its internal consistency. Therefore, many of the questions were phrased in strange ways in an effort to ask a number of questions about the same constructs. Additionally the instrument was originally created for a psychotherapy relationship, which is more emotional in nature than a physical rehabilitation relationship.

GRoC. The GRoC is a commonly used instrument to assess patient-perceived outcomes. However, it is only able to measure how well the patient perceives their recovery, and is unable to measure outcomes objectively. Objective outcome measures derived from patient records would have been more accurate in determining rehabilitation outcomes.

Adherence. No appropriate instrument designed to assess self-reported program adherence was found, so four questions were constructed to ask about adherence to the rehabilitation program, two of which were adapted from the SIRAS. When EFA was conducted on the adherence items, no pattern matrix was created. Two of the four items had very low loadings overall, and it is likely that these items may not have been good for measuring adherence.

Future Directions for Research

The original BLRI instrument factored very poorly in this study (i.e., both EFA and ECM), but a set of items was found through factor analysis which worked quite well. However, it is likely that the modified BLRI was unable to measure all contributing factors of the patient-therapist relationship effectively. Additionally, many participants felt the questions asked about intimate, rather than professional, relationships. For future research, the instrument should continue to be improved and refined to develop an instrument that

accurately measures all important aspects of a professional rehabilitation therapy relationship. Additionally, a self-reported rehabilitation adherence instrument was not found for use in this survey. An adherence instrument should be developed to continue survey research about adherence in rehabilitation.

Even though mindsets were an important topic in this study, we did not have the ability to also look at therapist mindsets, which are a potentially important to be investigated in a follow-up study. Dweck (2000) demonstrated that mindsets can be taught, which could play a vitally important role in therapy. Therapists' training and personal development may have an influence on the mindsets of their patients during rehabilitation, and this study showed that mindsets do indeed have a significant impact on patient outcomes. Further research must be conducted to determine whether therapist mindsets have an impact on patient outcomes, and how that process works.

Although the BLRI asked about perceived qualities of the patient-therapist relationship, no questions asked about patients' perceived importance of those qualities. For individuals who place more importance on the qualities of the patient-therapist relationship, the relationship may have greater influence on rehabilitation outcomes.

Patient-therapist gender match as a moderator was investigated as an emerging hypothesis, but many more questions resulted from the findings. More research needs to be conducted to determine if the results are consistent among different survey populations. If the results are consistent, the topic should be further researched to determine the reasons why therapists of some genders may have more or less of an impact on their patients due to gender interactions.

Conclusion

This study contributed to the body of literature surrounding the patient-therapist relationship in rehabilitation therapy. Although most correlations pertaining to the patient-therapist relationship were low to moderate, it does appear that therapists may be able to influence their patients' motivation and outcomes through their relationship. Therapists should take care to not let a negative relationship develop, because it may have a negative effect on patient motivation and outcomes. More research needs to be conducted to investigate this interaction further and more psychometrically-sound instruments are needed to measure therapeutic relationships in physical rehabilitation.

References

Assor, A., Roth, G., & Deci, E. L. (2004, February). The emotional costs of parents' conditional regard: A Self-Determination Theory analysis. *Journal of Personality, 72*(1), 47-88.

Barrett-Lennard, G. (1962). Dimensions of therapist response as causal factors in therapeutic change. *Psychological Monographs: General and Applied, 76*(43), 1-33.

Barrett-Lennard, G. (2015). *The Relationship Inventory: A complete resource and guide.* Hoboken, NJ: Wiley-Blackwell.

Biddle, S., Wang, C., Chatzisarantis, N., & Spray, C. (2003). Motivation for physical activity in young people: Entity and incremental beliefs about athletic ability. *Journal of Sports Sciences, 21*(12), 973-989.

Bordin, E. S. (1979). The generalizability of the psychoanalytic concept of the working alliance. *Psychotherapy: Theory, Research and Practice, 16*(3), 252-260.

Chan, D. K., Lonsdale, C., Ho, P. Y., Yung, P. S., & Chan, K. M. (2009). Patient motivation and adherence to postsurgery rehabilitation exercise recommendations: The influence of physiotherapists' autonomy-supportive behaviors. *Archives of Physical Medicine and Rehabilitation, 90*(12), 1977-1982.

Chu, C. I., & Tseng, C. (2013). A survey of how patient-perceived empathy affects the relationship between health literacy and the understanding of information by orthopedic patients? *BMC Public Health*, *13*, 1-6.

Clement, D., & Shannon, V. R. (2011). Injured athletes' perceptions about social support. *Journal of Sport Rehabilitation, 20*, 457-470.

Colby, S. L., & Ortman, J. M. (2014). The baby boom cohort in the United States: 2012 to 2060. *United States Census Bureau*, 1-16.

Cruz, E. B., Moore, A., & Cross, V. (2012). Clinical reasoning and patient-centered care in musculoskeletal physiotherapy in Portugal: A qualitative study. *Manual Therapy, 17*, 246-250.

David, S., & Larson, M. (in press). Athlete's perception of athletic trainer empathy: How important is it? *Journal of Sport Rehabilitation*.

Deci, E. L., & Ryan, R. M. (2000). The "what" and "why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry, 11*(4), 227-268.

Dweck, C. (2000). *Self-theories: Their role in motivation, personality, and development.* New York: Psychology Press.

Fisher, J. P., Platts, C., & Stopforth, M. (2013). Attitudes toward and preferences for male and female personal trainers. *International Journal of Exercise Science, 6*(4), 256-268.

Freedman, V. A., Wolf, D. A., & Spillman, B. C. (2016). Disability-free life expectancy over 30 years: A growing female disadvantage in the US population. *American Journal of Public Health, 106*(6), 1079-1085.

Hall, A. M., Ferreira, P. H., Maher, C. G., Latimer, J., & Ferreira, M. L. (2010). The influence of the therapist-patient relationship on treatment outcome in physical rehabilitation: A systematic review. *Physical Therapy, 90*(8), 1099-1110.

Horvath, A. O. (2001). The alliance. *Psychotherapy, 38*(4), 365-372.

Jette, A. M. (2016). Trends in late-life disablement: Women are losing ground. *Physical Therapy, 96*(9), 1314-1315.

Kolt, G. S., Brewer, B. W., Pizzari, T., Schoo, A. M., & Garrett, N. (2007). The Sport Injury Rehabilitation Adherence Scale: A reliable scale for use in clinical physiotherapy. *Physiotherapy, 93*, 17-22.

Lee, Y.-Y., & Lin, J. L. (2009). The effects of trust in physician on self-efficacy, adherence and diabetes outcomes. *Social Science and Medicine, 68*, 1060-1068.

Magnusen, M. J., & Rhea, D. J. (2009). Division I athletes' attitudes toward and preferences for male and female strength and conditioning coaches. *Journal of Strength and Conditioning Research, 23*(4), 1084-1090.

Markland, D., & Tobin, V. (2004). A modification to the Behavioral Regulation in Exercise Questionnaire to include an assessment of amotivation. *Journal of Sport and Exercise Psychology, 26*(26), 191-196.

Martin, D. J., Garske, J. P., & Davis, M. K. (2000). Relation of the therapeutic alliance with outcome and other variables: A meta-analytic review. *Journal of Consulting and Clinical Psychology, 68*(3), 438-450.

McCombie, R. P., O'Connor, S. S., & Schumacher, S. D. (2015, August). A comparative investigation of personality traits between two allied health professions: Occupational therapy and physiotherapy. *International Journal of Therapy and Rehabilitation, 22*(8), 377-384.

Moghaddasian, S., Dizaji, S., & Mahmoudi, M. (2013). Nurses empathy and famliy needs in the intensive care units. *Journal of Caring Sciences*, *2*(3), 197-201.

Olán, R. (2007). Patients' expectations, perceptions of their therapist and reasons for attending two or 55 more sessions. *Salud Mental, 30*(5), 55-62.

Patten, S. B., Williams, J. V., Lavorato, D. H., & Eliasziw, M. (2010). Major depression and injury risk. *Canadian Journal of Psychiatry, 55*(5), 313-318.

Pincus, T. (2006). Osteopathy and pain: Does psychology matter? *International Journal of Osteopathic Medicine, 9*, 47-48.

Pinto, R. Z., Ferreira, M. L., Oliveira, V. C., Franco, M. R., Adams, R., Maher, C. G., & Ferreira, P. H. (2012). Patient-centred communication is associated with positive therapeutic alliance: A systematic review. *Journal of Physiotherapy, 58*, 77-87.

Rogers, C. R. (1992). The necessary and sufficient conditions of therapeutic personality change. *Journal of Consulting and Clinical Psychology, 60*(6), 827-832.

Ryan, R. M., & Deci, E. L. (2002). Handbook of self-determination research. Rochester, NY: University of Rochester Press.

Ryan, R. M., & Deci, E. L. (2008). A Self-Determination Theory approach to psychotherapy: The motivational basis for effective change. *Canadian Psychology, 49*(3), 186-193.

Silva, M. N., Vieira, P. N., Coutinho, S. R., Minderico, C. S., Matos, M. G., Sardinha, L. B., & Teixeira, P. J. (2010). Using self-determination theory to promote physical activity and weight control: A randomized controlled trial in women. *Journal of Behavioral Medicine, 33*, 110-122.

Simmons, J., Roberge, L., Kendrick, S., & Richards, B. (1995, March). The interpersonal relationship in clinical practice: The Barrett-Lennard Relationship Inventory as an assessment instrument. *Evaluation and the Health Professions, 18*(1), 103-112.

Standage, M., & Ryan, R. (2012). Self-determination theory and exercise motivation. In G. C. Roberts, & D. C. Treasure, *Advances in motivation in sport and exercise* (3rd ed., pp. 233-270). Champaign, IL: Human Kinetics.

Swinkels, I. C., Hart, D. L., Deutscher, D., van den Bosch, W. J., Dekker, J., de Bakker, D. H., & van den Ende, C. H. (2008). Comparing patient characteristics and treatment processes in patients receiving physical therapy in the United States, Isreal and the Netherlands: Cross sectional analyses of data from three clinical databases. *BMC Health Services Research, 8*(163), 1-12.

Thomson, D., Hassenkamp, A.-M., & Mansbridge, C. (1997, April). The measurement of empathy in a clinical and a non-clinical setting: Does empathy increase with clinical experience? *Physiotherapy, 83*(4), 173-180.

Wang, C., Liu, W., Biddle, S. J., & Spray, C. M. (2005). Cross-cultural validation of the Conceptions of the Nature of Athletic Ability Questionnaire version 2. *Personality and Individual Differences, 38*, 1245-1256.

Wilson, P. M., Rodgers, W. M., Loitz, C. C., & Scime, G. (2006). "It's who I am... Really!" The importance of integrated regulation in exercise contexts. *Journal of Applied Biobehavioral Research, 11*(2), 79-104.

Zuroff, D. C., Blatt, S. J., Sotsky, S. M., Krupnick, J. L., Martin, D. J., Sanislow, C. A., &
Simmens, S. (2000). Relation of therapeutic alliance and perfectionism to outcome in
brief outpatient treatment of depression. *Journal of Consulting and Clinical
Psychology, 68*(1), 114-124.

Table 4.1

Exploratory Factor Analysis Pattern Matrix of the Modified Barrett-Lennard Relationship

Inventory.

	Factors		
	1	2	3
BLRI_regard1	.85		
BLRI_regard4	.83		
BLRI_regard6	.82		
BLRI_regard8	.77		
BLRI_regard2	.62		
BLRI_unconditionality8		.78	
BLRI_unconditionality6		.67	
BLRI_unconitionality9		.54	
BLRI_unconitionality3		.51	
BLRI_congruence8			-.68
BLRI_congruence5			-.68
BLRI_congruence4			.49

Table 4.2

Multivariate Analysis of Variance Comparisons of Growth and Fixed Clusters on Four Behavioral Regulation Subscales.

	Growth Cluster		Fixed Cluster				
Variable	M	SD	M	SD	F	p	eta^2
Intrinsic Regulation	3.33	0.95	2.84	0.93	29.09	0.00	0.06
Integrated Regulation	3.25	0.79	2.95	0.83	14.91	0.00	0.03
Identified Regulation	4.11	0.61	3.74	0.75	34.03	0.00	0.07
Introjected Regulation	2.97	1.06	2.78	0.98	3.98	0.05	0.01

Table 4.3

Multiple Regression Analyses of GRoC Scores with BLRI Subscales of Regard, Congruence, and Unconditionality.

Variables	GRoC	Regard	Congruence	Unconditionality	B	β
GRoC	—					
Regard	.18**	—			.54**	.16
Congruence	.12**	.48**	—		.13	.05
Unconditionality	.10*	.50**	.32**	—	.03	.01
				Intercept = 8.58		
Means	11.82	4.91	3.85	4.58		
Standard Deviations	3.00	.86	1.04	.90		$R^2 = .03$
						Adjusted $R^2 = .03$
						R = .18

**p<.01

*p<.05

Table 4.4

Multiple Regression Analyses Between Four BREQ-3 Behavioral Regulation Subscales and Adherence Scores.

Variables	Adherence	Intrinsic	Integrated	Identified	Introjected	B	β
Adherence	—						
Intrinsic	.23**	—				.05*	.12
Integrated	.19**	.57**	—			-.03	-.05
Identified	.30**	.52**	.65**	—		.18**	.30
Introjected	.06	.26**	.42**	.43**	—	-.03	-.08
					Intercept = 2.30		
Means	1.62	3.13	3.13	3.97	2.90		
Standard Deviations	.41	.98	.82	.70	1.04		$R^2 = .10$
							Adjusted $R^2 = .09$
							R = .32

**p<.01

*p<.05

Table 4.5

Multiple Regression Analyses Between Adherence Item 2 and BREQ-3 Subscales

Variables	Adherence2	Intrinsic	Integrated	Identified	Introjected	B	β
Adherence2	_						
Intrinsic	.11**	_				.01	.01
Integrated	.10*	.57**	_			-.09	-.07
Identified	.25**	.52**	.65**	_		.50**	.35
Introjected	-.02	.25**	.42**	.43**	_	-.14**	-.15
					Intercept = 2.24		
Means	3.57	3.13	3.13	3.97	2.90		
Standard Deviations	.996	.98	.82	.70	1.04		$R^2 = .08$
							Adjusted $R^2 = .08$
							R = .29

** p < .01

* p < .05

Table 4.6

Multiple Regression Analyses Between Motivation Profiles and GRoC Scores.

Variables	GRoC	Intrinsic	Integrated	Identified	Introjected	B	β
GRoC	—						
Intrinsic	.32**	—				.61**	.20
Integrated	.24**	.57**	—			-.16	-.05
Identified	.35**	.52**	.65**	—		1.16**	.27
Introjected	.14**	.26**	.42**	.43**	—	-.032	-.01
					Intercept = 5.943		
Means	11.86	3.13	3.13	3.97	2.89		
Standard Deviations	2.95	.98	.82	.70	1.04		$R^2 = .15$
							Adjusted $R^2 = .14$
							R = .38

** $p < .01$

* $p < .05$

Table 4.7

Canonical Correlation Values Between Four BREQ-3 Subscales and Three BLRI Subscales.

Variable	Correlation/Loading	Canonical Variate Unstandardized Coefficients	Standardized Coefficients
Motivation Set			
Intrinsic	-0.99	-1.11	-1.09
Integrated	-0.46	0.11	0.09
Identified	-0.43	0.08	0.06
Introjected	-0.15	0.07	0.07
Relationship Set			
Regard	-0.96	-0.86	-0.75
Unconditionality	-0.65	-0.20	-0.18
Congruence	-0.66	-0.24	-0.25

Table 4.8

Canonical Correlation Values Between Mindsets and Relationship Variables.

	First Canonical Variate			Second Canonical Variate		
	Correlation / Loading	Unstandardized Coefficients	Standardized Coefficients	Correlation / Loading	Unstandardized Coefficients	Standardized Coefficients
Mindset Set						
Stable	.62	.21	.17	-.16	-.38	-.32
Gift	.76	.96	.64	-.18	-.16	-.11
Learn	-.65	-.66	-.46	.09	.53	.38
Improve	-.49	-.21	-.22	-.84	-1.04	-1.08
Relationship Set						
Regard	-.79	-.40	-.34	-.55	-1.23	-1.04
Unconditionality	-.85	-.63	-.57	.44	1.07	.96
Congruence	-.70	-.34	-.36	-.17	.01	.01

Table 4.9

Canonical Correlations Between Fixed Mindset and Relationship Subscales.

Variable	Correlation/Loading	Unstandardized Coefficients	Standardized Coefficients
Fixed Mindset Set			
Stable	-0.75	-.57	-.47
Gift	-0.90	-1.08	-.72
Relationship Set			
Regard	.70	.28	.24
Unconditionality	.96	.90	.80
Congruence	.49	.11	.12

Table 4.10

Canonical Correlations Between Growth Mindset Factors and Relationship Variables.

	Canonical Variate		
Variable	Correlation/Loading	Unstandardized Coefficients	Standardized Coefficients
Growth Mindset Set			
Learn	-.29	.12	.09
Improve	-.997	-.99	-1.03
Relationship Set			
Regard	-.88	-1.27	-1.08
Unconditionality	- .05	.61	.55
Congruence	-.50	-.16	-.17

Figures

Figure 4.1

Standardized Estimates from Exploratory Covariance Modeling of the BLRI.

chisquare=157.492, df=51, p=.000,
CFI=.955, TLI=.931,
RMSEA=.066, AIC=235.492
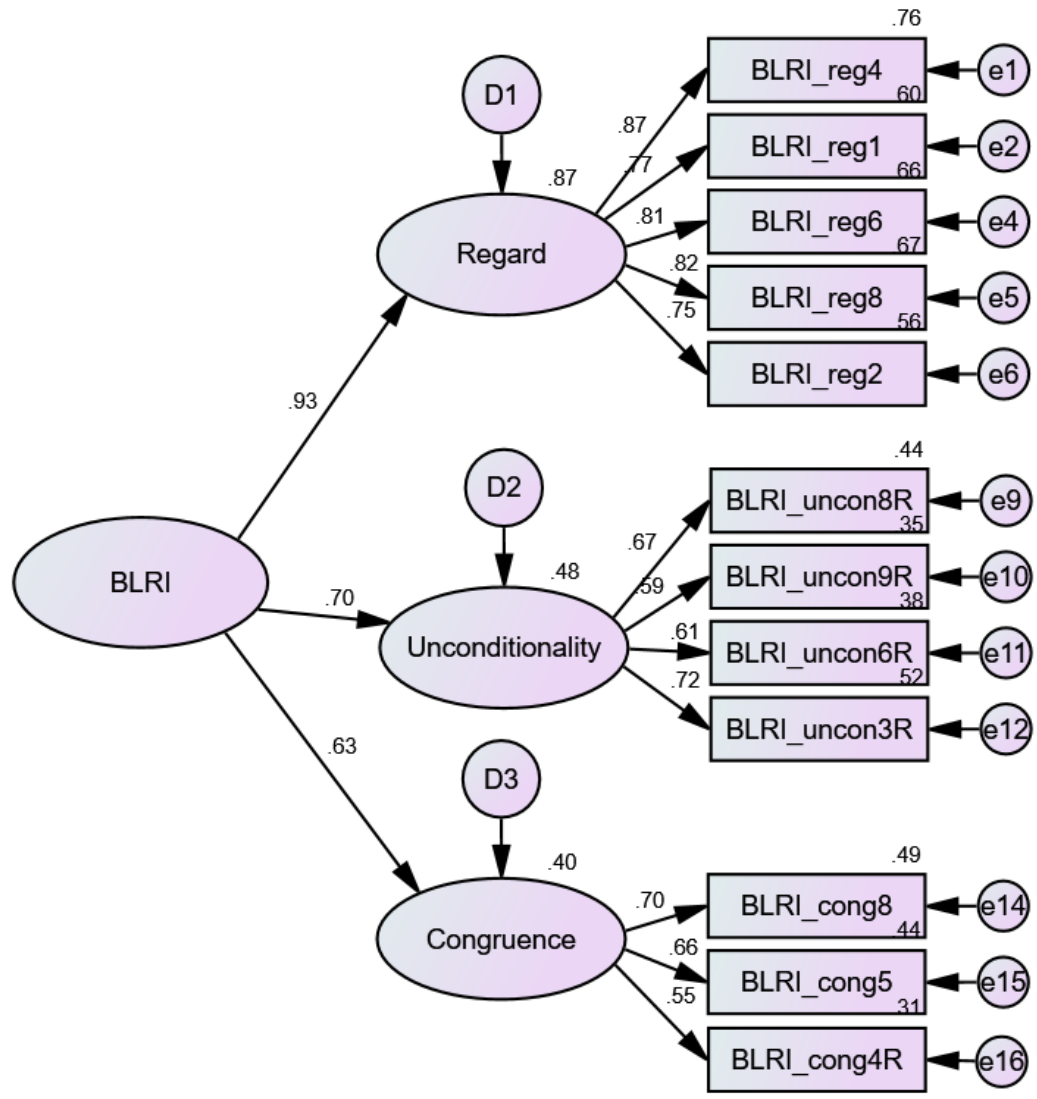
Figure 4.2

Cluster Analysis Results for Growth and Fixed Groups and Scores on the CNAAQ-2.
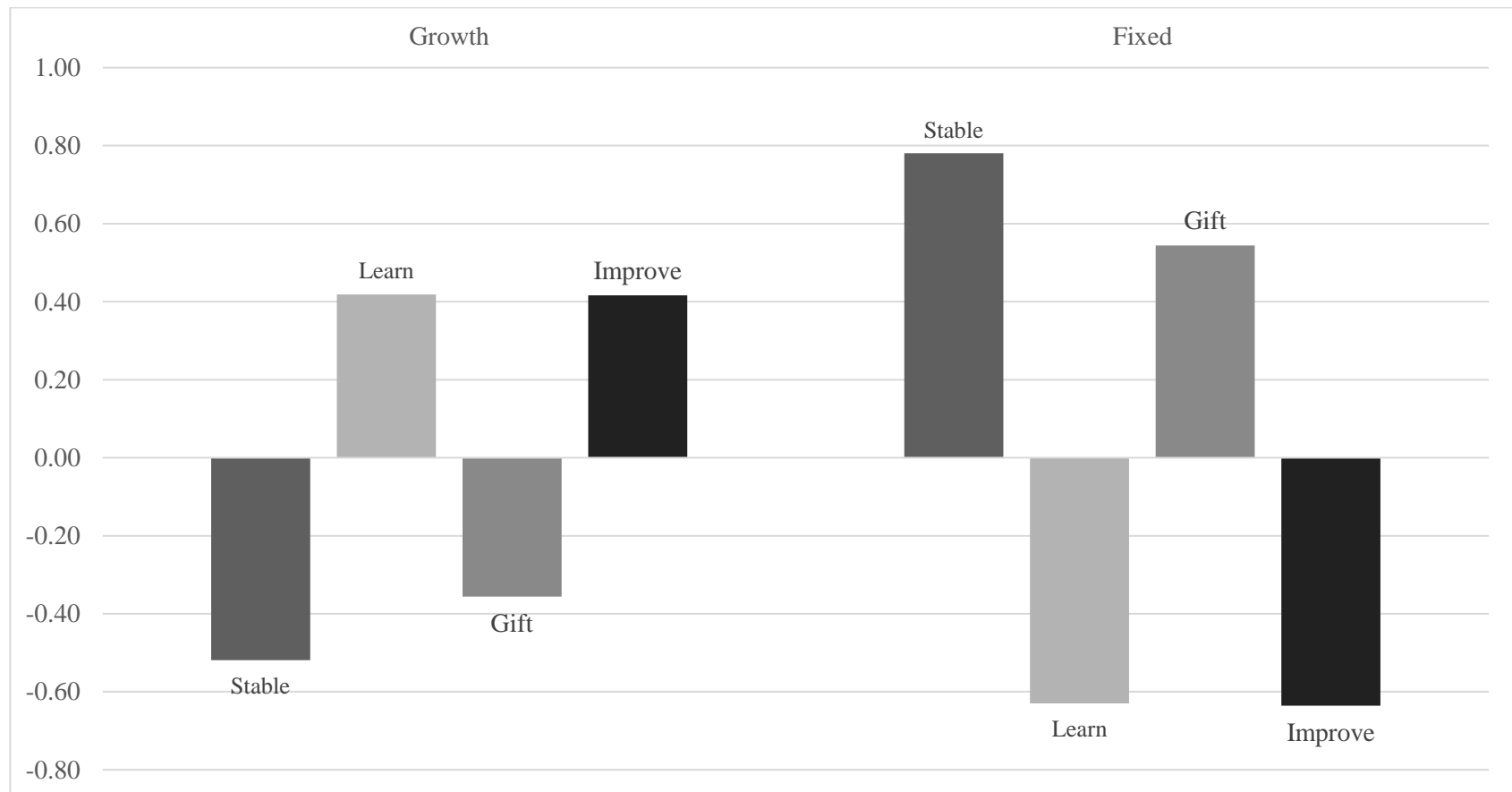
Figure 4.3

Three-Factor BLRI and Four-Factor BREQ-3.

chisquare=269.858, df=100, p=.000,
CFI=.943, TLI=.923,
RMSEA=.060, AIC=373.858
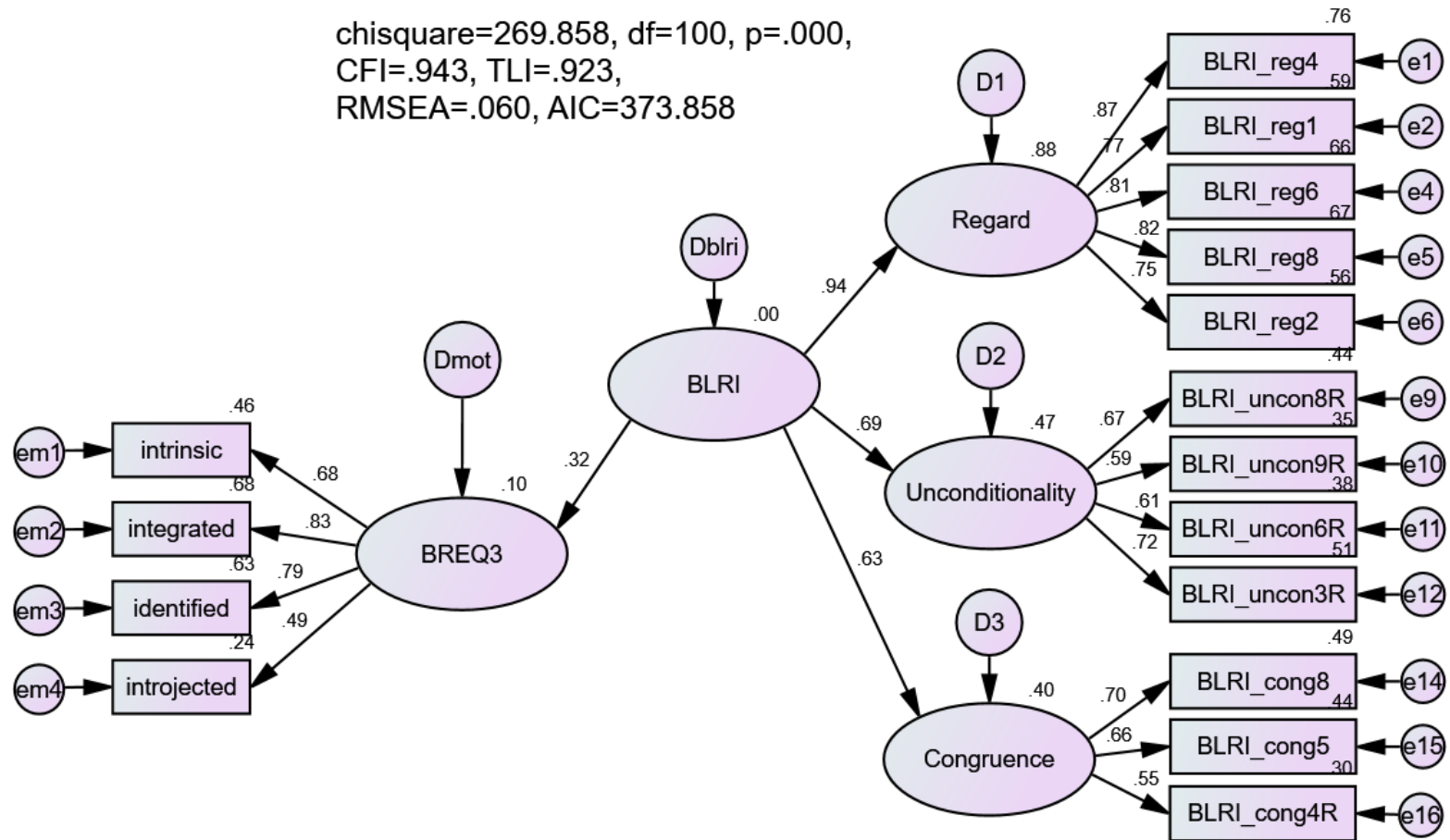
Figure 4.4

Three-Factor Relationship Inventory and BREQ-3 for Female Patient, Female Therapist.
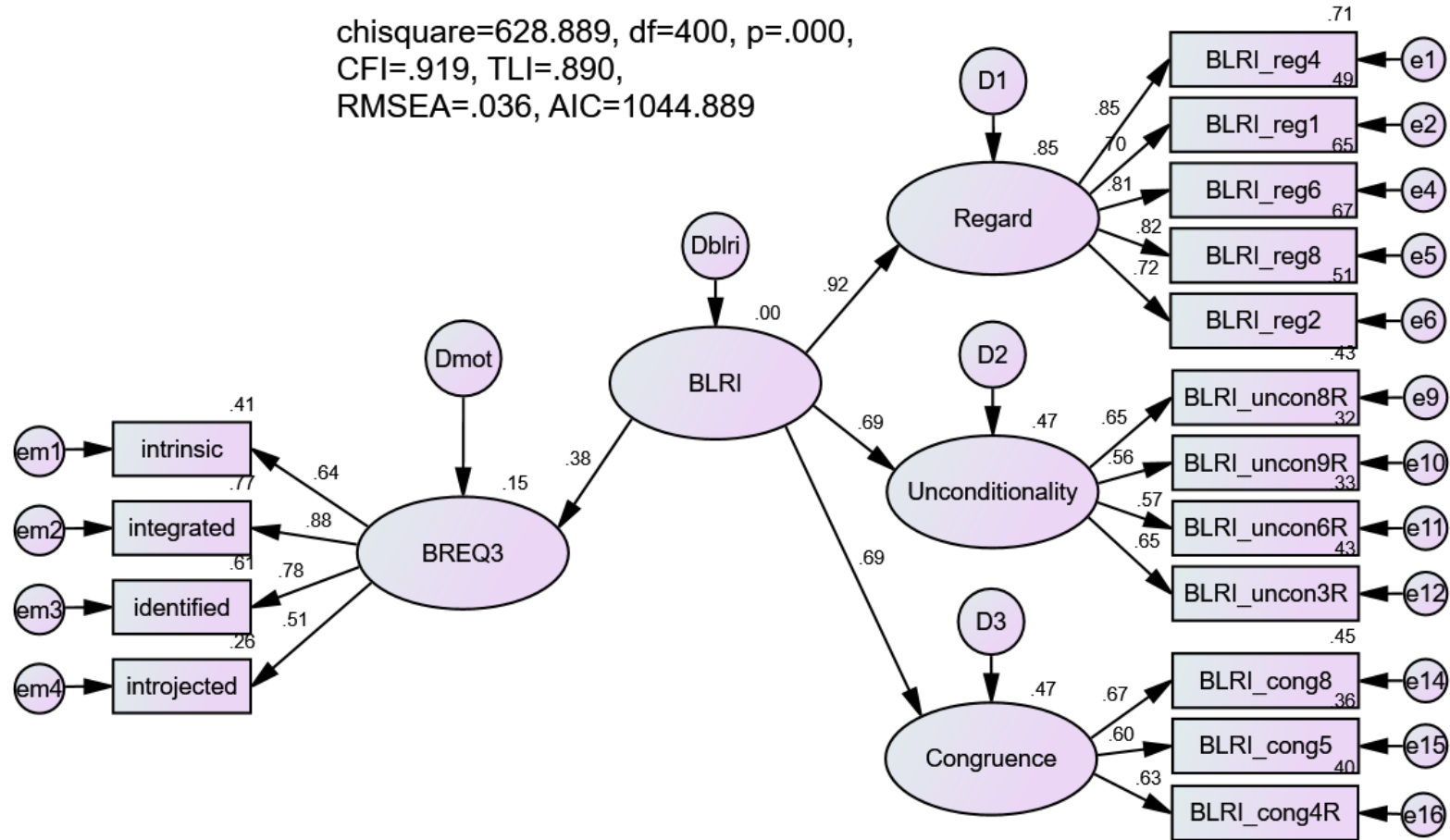
Figure 4.5

Three-Factor Relationship Inventory and BREQ-3 for Female Patient, Male Therapist.
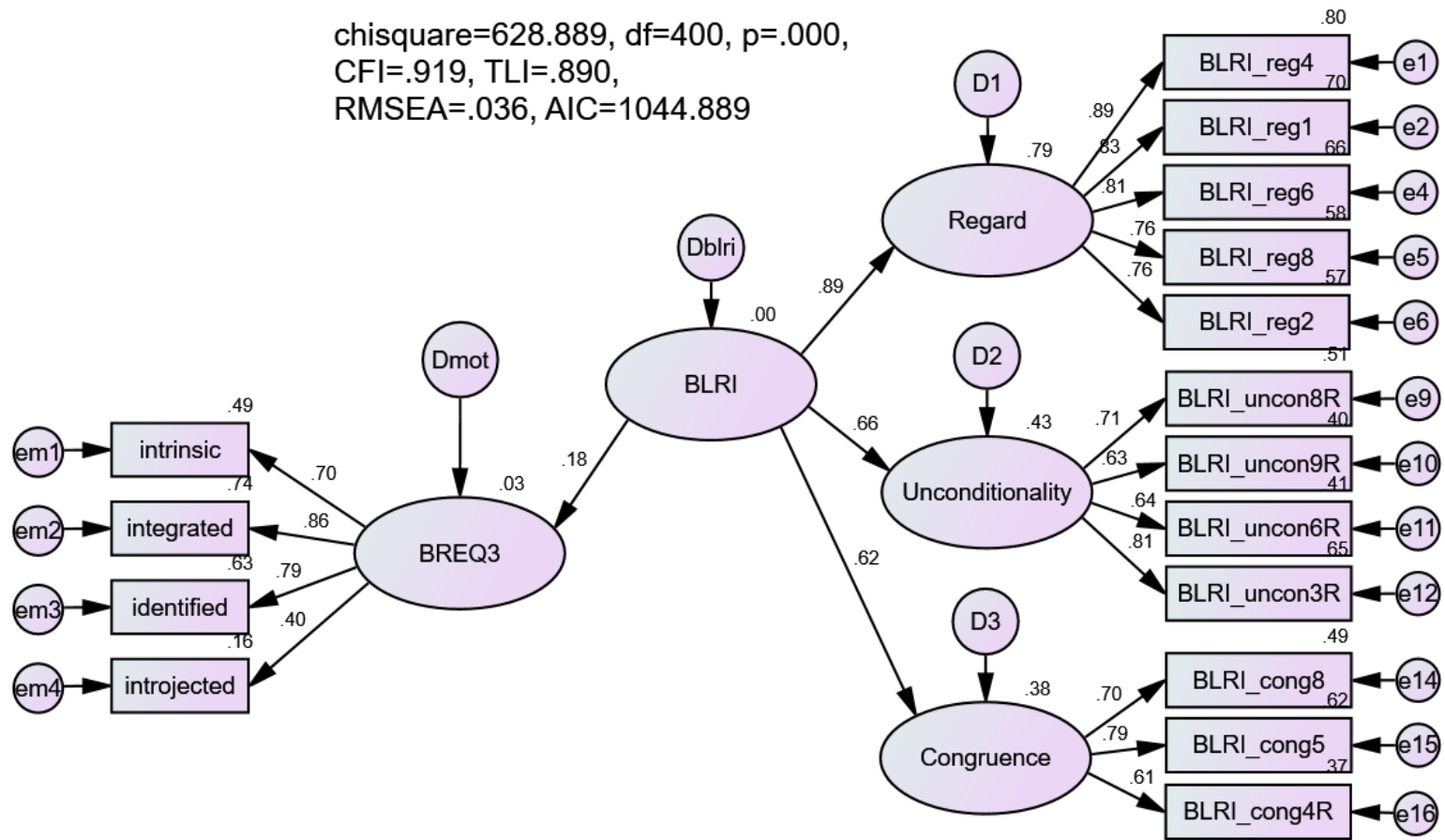
Figure 4.6

Three-Factor Relationship Inventory and BREQ-3 for Male Patient, Female Therapist.

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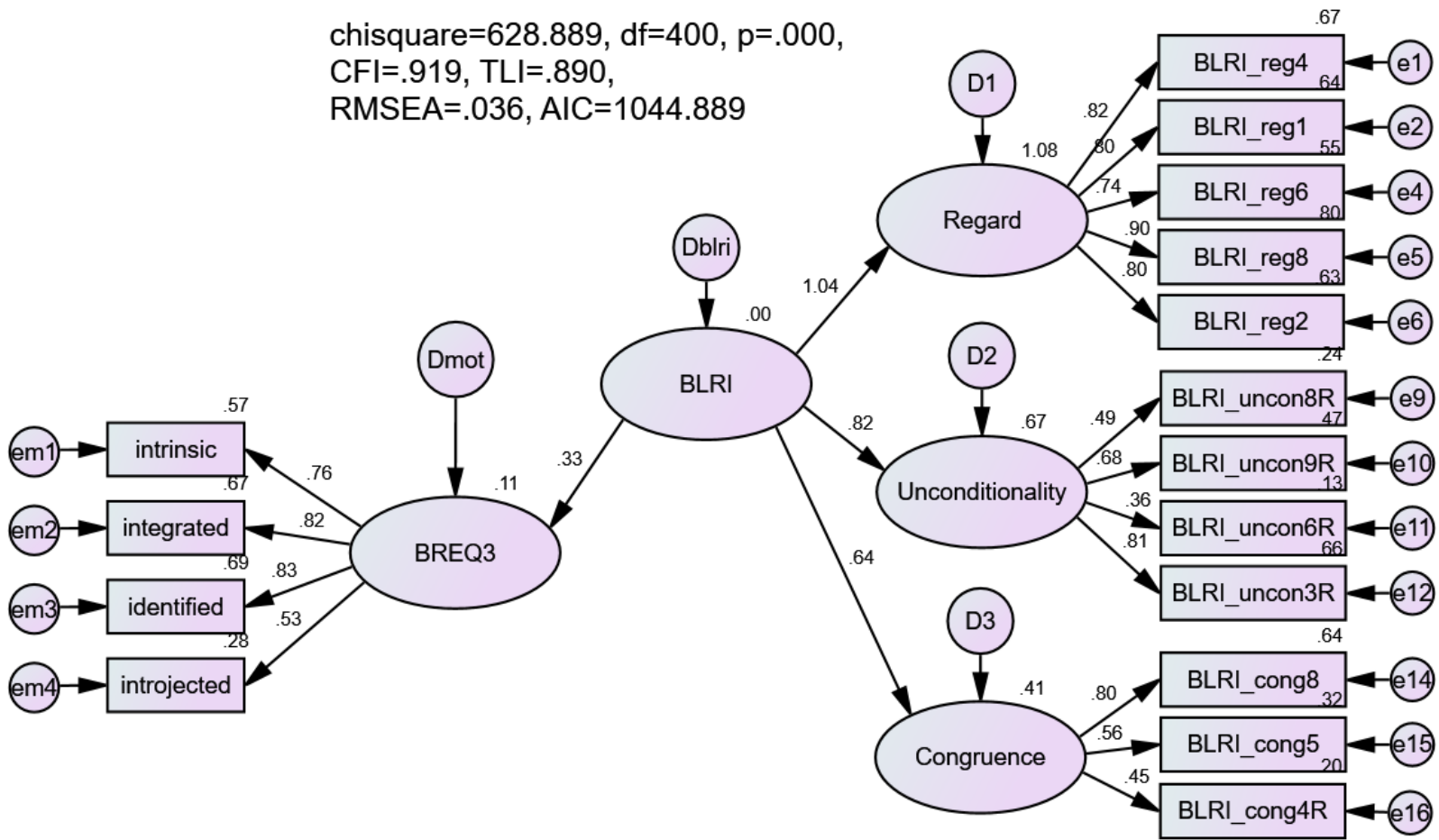
Figure 4.7

Three-Factor Relationship Inventory and BREQ-3 for Male Patient, Male Therapist.

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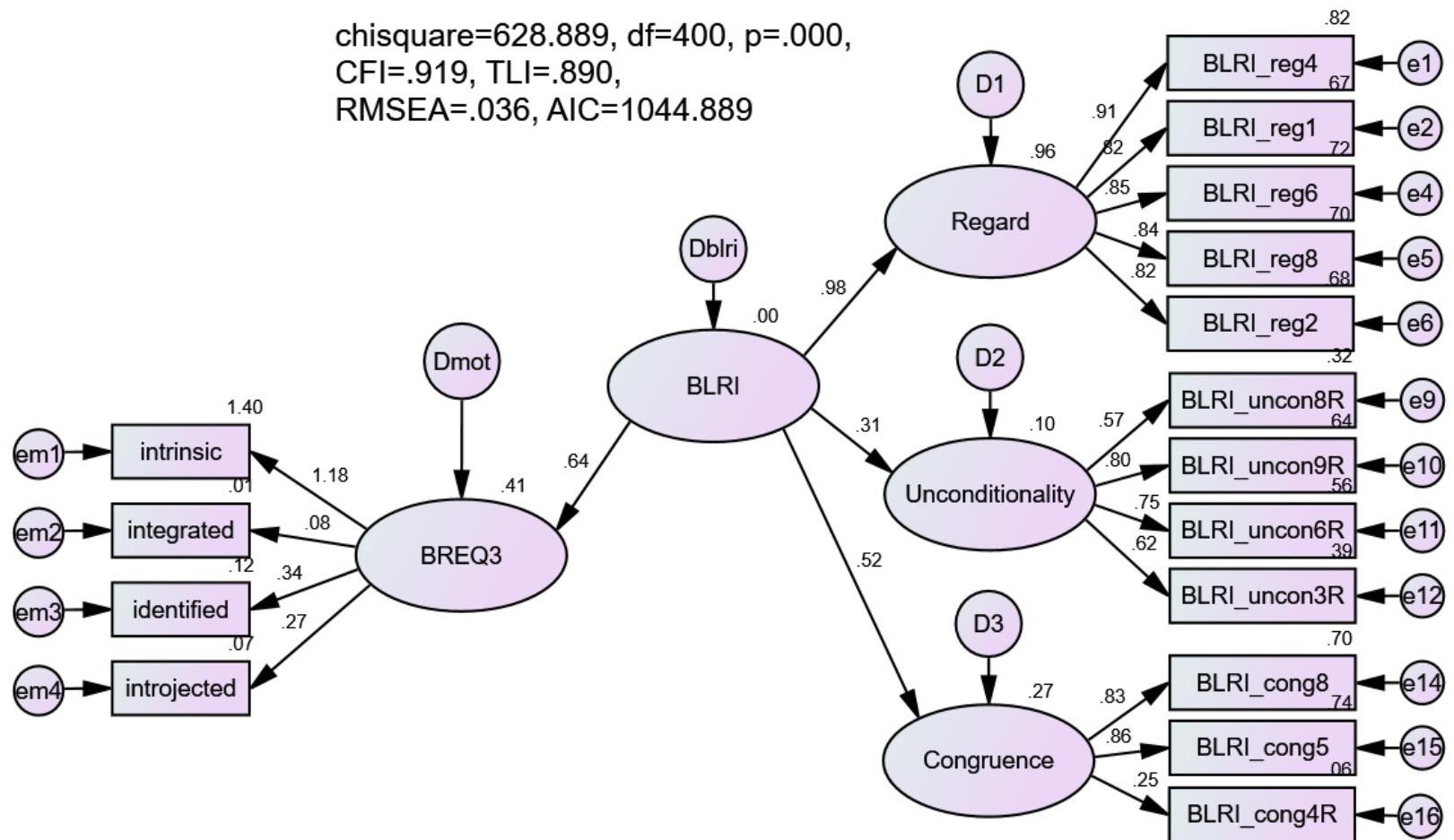
Appendix A

IRB Approval Letter

University *of* Idaho
Office of Research Assurances
Institutional Review Board
875 Perimeter Drive, MS 3010
Moscow ID 83844-3010
Phone: 208-885-6162
Fax: 208-885-5752
irb@uidaho.edu

To: Damon Burton

Cc: Katherine Adams

From: Jennifer Walker, IRB Coordinator

Approval   March 20, 2017
Date:

Title: Effects of Perceptions of Patient-Therapist Relationship on Physical Therapy
Rehabilitation Motivation

Project: 17-058
Certified: Certified as exempt under category 2 at 45 CFR 46.101(b)(2).

On behalf of the Institutional Review Board at the University of Idaho, I am pleased to inform you that the protocol for the research project Effects of Perceptions of Patient-Therapist Relationship on Physical Therapy Rehabilitation Motivation has been certified as exempt under the category and reference number listed above.

This certification is valid only for the study protocol as it was submitted. Studies certified as Exempt are not subject to continuing review and this certification does not expire. However, if changes are made to the study protocol, you must submit the changes through VERAS for review before implementing the changes. Amendments may include but are not limited to, changes in study population, study personnel, study instruments, consent documents, recruitment materials, sites of research, etc. If you have any additional questions, please contact me through the VERAS messaging system by clicking the 'Reply' button.

As Principal Investigator, you are responsible for ensuring compliance with all applicable FERPA regulations, University of Idaho policies, state and federal regulations. Every effort should be made to ensure that the project is conducted in a manner consistent with the three fundamental principles identified in the Belmont Report: respect for persons; beneficence; and justice. The Principal Investigator is responsible for ensuring that all study personnel have completed the online human subjects training requirement.

You are required to timely notify the IRB if any unanticipated or adverse events occur during the study, if you experience and increased risk to the participants, or if you have participants withdraw or register complaints about the study.

Appendix B

Informed Consent

Physical Rehabilitation Survey

The purpose of this investigation is to learn about psychological factors that enhance physical rehabilitation, including the patient-therapist relationship, motivation, and mindsets. The information gained from this study can be important to improving patient care and treatment satisfaction. We are seeking input from individuals who are currently participating in or have recently completed a rehabilitation program in physical therapy (PT), occupational therapy (OT), or athletic training (AT).

The survey should be completed by individuals at least 18 years of age who have participated in a physical rehabilitation program and worked exclusively with one healthcare professional for at least three visits. Physical therapists, occupational therapists, or athletic trainers should not complete the survey on behalf of their patients. Your input will be important to identifying patient characteristics that will enhance rehabilitation outcomes and make your voice heard.

Participation in this survey is voluntary and a decision not to participate will not result in any negative consequences. Your responses will remain anonymous, and nobody will know you participated in this survey or the responses you selected. Please answer all questions in the context of participation in your rehabilitation program. However, there are no right or wrong answers to these items, so choose the answer that first comes to your mind. Although we hope you will respond to most of the questions, you may skip any questions you wish to not answer. Additionally, if you would like a copy of the results please provide your email address at the end of the survey. Once received, your contact information will be separated from the survey to remove identifying information and kept confidential

This study has been certified as exempt by the University of Idaho Institutional Review Board, which found no foreseeable risks associated with the study. If you would like more information or have questions concerning the survey, please contact graduate student Katie Adams (sout7824@vandals.uidaho.edu). You may also contact the primary investigator of this study, Dr. Damon Burton (dburton@uidaho.edu) 208-885-2186. Thank you for your participation in this important research.

Thank you,

Katie Adams
Damon Burton

Appendix C

Barrett-Lennard Relationship Inventory

Indicate how strongly you feel each statement is true or not true.

	NO, I strongly feel that it is not true (-3)	No, I feel it is not true (-2)	(No) I feel that it is probably untrue, or more untrue than true (-1)	(Yes) I feel that it is probably true, or more true than untrue (+1)	Yes, I feel it is true (+2)	YES, I strongly feel that it is true (+3)
1. _____ respects me.	❍	❍	❍	❍	❍	❍
2. _____usually senses or realizes what I am feeling.	❍	❍	❍	❍	❍	❍
3. _____'s interest in me depends on my words and actions (or how I perform).	❍	❍	❍	❍	❍	❍
4. I feel that _____ puts on a role or front with me.	❍	❍	❍	❍	❍	❍
5. _____ feels a true liking for me.	❍	❍	❍	❍	❍	❍
6. _____ reacts to my words but does not see the way I feel.	❍	❍	❍	❍	❍	❍
7. Whether I am feeling happy or unhappy with myself makes no real difference to the way _____ feels about me.	❍	❍	❍	❍	❍	❍
8. _____ doesn't avoid or go round anything that matters between us.	❍	❍	❍	❍	❍	❍
9. _____is indifferent to me.	❍	❍	❍	❍	❍	❍
10. _____ nearly always sees exactly what I mean.	❍	❍	❍	❍	❍	❍

Indicate how strongly you feel each statement is true or not true.

	NO, I strongly feel that it is not true (-3)	No, I feel it is not true (-2)	(No) I feel that it is probably untrue, or more untrue than true (-1)	(Yes) I feel that it is probably true, or more true than untrue (+1)	Yes, I feel it is true (+2)	YES, I strongly feel that it is true (+3)
11. Depending on my behavior, _____ has a better (or worse) opinion of me sometimes than s/he has at other times.	○	○	○	○	○	○
12. I feel that _____ is genuine with me.	○	○	○	○	○	○
13. I know I'm valued and appreciated by _____.	○	○	○	○	○	○
14. _____'s own attitudes get in the way of understanding me.	○	○	○	○	○	○
15. No matter what I tell myself about myself, _____ likes (or dislikes) me just the same.	○	○	○	○	○	○
16. _____ keeps quiet about his/her real inner impressions and feelings.	○	○	○	○	○	○
17. _____ finds me rather dull and uninteresting.	○	○	○	○	○	○
18. _____ realizes what I mean even when I have difficulty in saying it.	○	○	○	○	○	○
19. _____ wants me to be a certain kind of person.	○	○	○	○	○	○
20. _____ is willing to say whatever is on his/her mind with me, including feelings about either of us or how we are getting along.	○	○	○	○	○	○

Indicate how strongly you feel each statement is true or not true.

	NO, I strongly feel that it is not true (-3)	No, I feel it is not true (-2)	(No) I feel that it is probably untrue, or more untrue than true (-1)	(Yes) I feel that it is probably true, or more true than untrue (+1)	Yes, I feel it is true (+2)	YES, I strongly feel that it is true (+3)
21. _____ cares for me.	◯	◯	◯	◯	◯	◯
22. _____ doesn't listen and pick up on what I think and feel.	◯	◯	◯	◯	◯	◯
23. _____ likes certain things about me, and there are other things he/she does not like in me.	◯	◯	◯	◯	◯	◯
24. _____ is openly himself (herself) in our relationship.	◯	◯	◯	◯	◯	◯
25. I feel that _____ disapproves of me.	◯	◯	◯	◯	◯	◯
26. _____ usually understands the whole of what I mean.	◯	◯	◯	◯	◯	◯
27. Whether thoughts or feelings I express are 'good' or 'bad' makes no difference to _____'s feeling toward me.	◯	◯	◯	◯	◯	◯
28. Sometimes _____ is not at all comfortable but we go on, outwardly ignoring it.	◯	◯	◯	◯	◯	◯
29. _____ is friendly and warm toward me.	◯	◯	◯	◯	◯	◯
30. _____ does not understand me.	◯	◯	◯	◯	◯	◯

Indicate how strongly you feel each statement is true or not true.

	NO, I strongly feel that it is not true (-3)	No, I feel it is not true (-2)	(No) I feel that it is probably untrue, or more untrue than true (-1)	(Yes) I feel that it is probably true, or more true than untrue (+1)	Yes, I feel it is true (+2)	YES, I strongly feel that it is true (+3)
31. _____ approves of some things about me (or some of my ways), and plainly disapproves of other things (or ways I act and express myself).	❍	❍	❍	❍	❍	❍
32. I think _____ always knows exactly what s/he feels with me: s/he doesn't cover up inside.	❍	❍	❍	❍	❍	❍
33. _____ just tolerates or puts up with me.	❍	❍	❍	❍	❍	❍
34. _____ appreciates exactly how the things I experience feel to me.	❍	❍	❍	❍	❍	❍
35. Sometimes I am more worthwhile in _____'s eyes than I am at other times.	❍	❍	❍	❍	❍	❍
36. At moments I feel that _____'s outward response to me is quite different from the way s/he feels underneath.	❍	❍	❍	❍	❍	❍
37. _____ feels affection for me.	❍	❍	❍	❍	❍	❍
38. _____'s response to me is so fixed and automatic that I don't get through to him/her.	❍	❍	❍	❍	❍	❍
39. I don't think that anything I say or do really changes the way _____ feels toward me.	❍	❍	❍	❍	❍	❍
40. I believe that _____ has feelings s/he does not tell me about that affect our relationship.	❍	❍	❍	❍	❍	❍

Appendix D

Behavioral Regulation in Exercise Questionnaire (BREQ-3) Retooled for Physical

Rehabilitation Populations

	Not true for me		Sometim es true for me		Very true for me
1. It's important for me to go to therapy regularly	❍	❍	❍	❍	❍
2. I don't see why I should have to do therapy	❍	❍	❍	❍	❍
3. I go to therapy because it is fun	❍	❍	❍	❍	❍
4. I feel guilty when I don't go to therapy	❍	❍	❍	❍	❍
5. I go to therapy because it is consistent with my rehabilitation goals	❍	❍	❍	❍	❍
6. I go to therapy because other people say I should	❍	❍	❍	❍	❍
7. I value the benefits of therapy	❍	❍	❍	❍	❍
8. I can't see why I should bother doing therapy	❍	❍	❍	❍	❍
9. I enjoy my therapy sessions	❍	❍	❍	❍	❍
10. I feel ashamed when I miss a therapy session	❍	❍	❍	❍	❍
11. I consider therapy part of my identity	❍	❍	❍	❍	❍
12. I take part in therapy because my friends/family/partner say I should	❍	❍	❍	❍	❍
	Not true for me		Sometim es true for me		Very true for me
13. I think it is important to make the effort to go to therapy regularly	❍	❍	❍	❍	❍
14. I don't see the point in going to therapy	❍	❍	❍	❍	❍
15. I find therapy a pleasurable activity	❍	❍	❍	❍	❍
16. I feel like a failure when I haven't done my therapy exercises in a while	❍	❍	❍	❍	❍
17. I consider therapy a fundamental part of who I am	❍	❍	❍	❍	❍
18. I do therapy because others will not be pleased with me if I don't	❍	❍	❍	❍	❍
19. I get restless if I don't do therapy exercises regularly	❍	❍	❍	❍	❍
20. I think therapy is a waste of time	❍	❍	❍	❍	❍
21. I get pleasure and satisfaction from participating in therapy	❍	❍	❍	❍	❍
22. I would feel bad about myself if I was not making time to go to therapy	❍	❍	❍	❍	❍
23. I consider therapy consistent with my values	❍	❍	❍	❍	❍
24. I feel under pressure from my friends/family to do therapy	❍	❍	❍	❍	❍

Appendix E

Conceptions of the Nature of Athletic Ability Questionnaire Version 2

Adapted for Physical Rehabilitation Population

Choose the degree to which each question best represents your opinions.

	Strongly Disagree		Neutral		Strongly Agree
1. You have a certain level of ability in therapy and you cannot really do much to change that level.	❍	❍	❍	❍	❍
2. To be successful in therapy you need to learn techniques and skills, and practice them regularly.	❍	❍	❍	❍	❍
3. Even if you try, the level you reach in therapy will change very little.	❍	❍	❍	❍	❍
4. You need to have certain "gifts" to be good at therapy.	❍	❍	❍	❍	❍
5. You need to learn and to work hard to be good at therapy.	❍	❍	❍	❍	❍
6. In therapy, if you work hard at it, you WILL ALWAYS get better.	❍	❍	❍	❍	❍
7. To be good at therapy, you need to be born with the basic qualities which allow you success.	❍	❍	❍	❍	❍
8. To reach a high level of performance in therapy, you must go through periods of learning and training.	❍	❍	❍	❍	❍
9. How good you are at therapy will ALWAYS improve if you work at it.	❍	❍	❍	❍	❍
10. It is difficult to change how good you are at therapy.	❍	❍	❍	❍	❍
11. To be good at therapy you need to be naturally gifted.	❍	❍	❍	❍	❍
12. If you put enough effort into it, you will ALWAYS get better at therapy.	❍	❍	❍	❍	❍

Appendix F

Global Rating of Change Scale (GRoC)

Please rate the overall condition of your injured body part or region FROM THE
TIME THAT YOU BEGAN TREATMENT UNTIL NOW

- A very great deal worse (7)
- A little bit worse (2)
- Somewhat better (+3)
- A great deal worse (6)

- A tiny bit worse (1)
- Moderately better (+4)
- Quite a bit worse (5)
- About the same (0)
- Quite a bit better (+5)
- Moderately worse (4)

- A tiny bit better (+1)
- A great deal better (+6)
- Somewhat worse (3)
- A little bit better (+2)
- A very great deal better (+7)

Appendix G

Physical Rehabilitation Adherence Scale

How often do you attend scheduled therapy appointments?

○ Always
○ Most of the time
○ About half the time
○ Sometimes
○ Never

How often do you do the recommended rehab exercises at home?

○ Always
○ Most of the time
○ About half the time
○ Sometimes
○ Never

During your therapy appointments, how frequently do you follow instructions and advice?

○ Always
○ Most of the time
○ About half the time
○ Sometimes
○ Never

During therapy appointments, how much effort do you give during exercises?

○ A great deal
○ A lot
○ A moderate amount
○ A little
○ None at all

Appendix H

Physical Rehabilitation Demographic and Background Questionnaire

The following questions ask about you and your therapist. In these questions, "therapist" refers to your primary physical therapist, occupational therapist, or athletic trainer. Please complete them to the best of your ability.

What is your age?

What is your therapist's age? (If not known, estimate)

What is your gender?

	Female	Male
Me	○	○
My therapist	○	○

How many months have/did you work with your therapist?

On average, how many times per week did you get treatment from your therapist?

How long ago was your most recent visit?

During therapy, how often do you work with...

_____ ... your primary therapist?
_____ ... a therapy assistant?
_____ ... a therapy aide?

What kind of injury did you get treatment for (select all that apply)?

❑ Neurologic (stroke, parkinson's, brain injury, etc.)
❑ Orthopedic (knee replacement, joint sprains, etc.)
❑ Cardiopulmonary (COPD, heart disease, etc.)
❑ Sports therapy
❑ Other _____

When it comes to your expected recovery time, you are...

❍ ... ahead of schedule
❍ ... right on schedule
❍ ... behind schedule

Where did you attend therapy?

❍ Outpatient clinic
❍ Inpatient hospital clinic
❍ Nursing home/skilled nursing facility
❍ Home health
❍ Other _____