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Addressing Content, Convergent and Predictive Validity of Implicit Pain-Related Fear in Chronic Low Back Pain

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ABSTRACT

Chronic low back pain (CLBP) is a common condition that can lead to emotional distress and physical disability. Fear of pain, a phobic-like response to pain, can contribute to significant avoidance behavior and is associated with disrupted physical and emotional functioning. While questionnaires remain the standard for measurement of pain-related fear, recent work has explored the use of implicit methods. This study aimed to use an implicit measure, the Implicit Relational Assessment Procedure (IRAP), to assess convergent and predictive validity of implicit pain-related fear in relation to explicit self-report measures. Seventy-four participants with CLBP were recruited and completed the pain-related fear IRAP, along with self-report measures of pain-related fear, distress, and disability, as well as three physical performance tasks. Both explicit and implicit biases were demonstrated in participants, suggesting the presence of pain-related fear, however, implicit pain-related fear failed to demonstrate convergent and predictive validity. Therefore, implicit pain-related fear, while present in patients with CLBP, may not provide additional utility above and beyond explicit measures of pain-related fear.

Keywords: pain, relational frame theory, movement, language, implicit, explicit, assessment

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Chapter 1

Introduction

Chronic low back pain (CLBP) is a common problem associated with significant socioeconomic burden (Johannes, Le, Zhou, Johnston, & Dworkin, 2010). It accounts for the largest number of years lived with a disability in the US and significant health care expenditures (Martin et al., 2008; Murray et al., 2013). Considerable scientific effort has been devoted to identifying modifiable factors that can lead to effective treatment and reduce disability due to CLBP.

Psychological factors have been shown to play important roles in the process by which CLBP develops into persistent disability (Bener et al., 2013; Gatchel, Polatin, & Mayer, 1995). In particular, fears of pain, physical activity and (re)injury have been identified as key contributors to phobic-like avoidance behavior to pain (Vlaeyen & Linton, 2012). While avoidance behaviors are common and protective during acute pain, persistent avoidance can lead to a disruption of functioning and eventual disability (Schrooten & Vlaeyen, 2010). Research of pain-related fear has focused on the role that attitudes and beliefs about pain, physical activity and re-injury moderate the response to pain. According to this research, having a strong belief that pain or injury are the likely outcomes of an activity will lead to less engagement in that activity and contribute to greater disruptions in functioning over the long term (Crombez, Vlaeyen, Heuts, & Lysens, 1999).

In the past three decades, several psychological instruments have been developed for assessing attitudes and beliefs of pain-related fear (Crombez et al., 1999). These instruments measure pain-related fear by having respondents rate items such as, “physical activity might harm my back" and "my body is telling me I have something dangerously wrong." Questionnaire methods for assessing pain-related fear have been described as explicit methods as they allow respondents to reflect and contemplate their response. In addition to explicit methods, so-called implicit methods have been used to examine pain-related fear. In contrast to explicit methods, implicit methods focus on the immediate or reflexive evaluation of stimuli. By minimizing reflection time, implicit responses are theorized to remove additional influences from other beliefs and contextual stimuli, which may moderate responding.

Pain researchers have made the prediction that implicit pain-related responses should be uniquely informative of pain-related behavior. While this is an intuitive prediction given that the experience of pain often leads to avoidance behaviors which interfere with a person's explicitly stated goals and values, this hypothesis has not been thoroughly evaluated (Brauer, De Jong, Huijding, Laan, & Ter Kuile, 2009; Caneiro, O'Sullivan, Smith, Moseley, & Lipp, 2017; Crombez, Lauwerier, Goubert, & Van Damme, 2016; Eccleston & Crombez, 2007; Van Damme, Crombez, & Eccleston, 2008; Wiers et al., 2010). With regards to implicit assessment of pain-related fear, implicit methods have been used to investigate fear of sexual intercourse in patients with dyspareunia (Brauer et al., 2009), fear of pain and injury (Vancleef, Peters, Gilissen, & De Jong, 2007) and fear of movement (Caneiro et al., 2018, 2017; Leeuw, Peters, Wiers, & Vlaeyen, 2007) in healthy participants and those with CLBP. Only the recent studies by Caneiro and colleagues (2017 & 2018) have demonstrated an implicit fear of movement in CLBP and healthy controls. There are several potential reasons for the discrepancy between previous work and the studies by Caneiro and colleagues, such as, heterogeneity in underlying theory, in the sample, underlying pain conditions, and methodological differences. Thus, it remains difficult to determine if equivocal findings have been due to sample characteristics, methodological factors or a true lack of an implicit effect.

With respect to methodological differences, early studies of implicit pain-related fear used tasks that evaluated associational links between stimuli, such as links between words and images (De Houwer, Gawronski, & Barnes-Holmes, 2013). An increasing focus of implicit research in the last decade has been to examine relations between stimuli (De Houwer, 2014; De Houwer et al., 2013). This development is important as relational implicit tasks focus on the mechanics by which two stimuli are related, which is a step beyond identifying that they are associated. In other words, an associational task establishes that ***some*** relation likely exists, while the relational task identifies the nature of the relation (De Houwer, 2006; De Houwer, Heider, Spruyt, Roets, & Hughes, 2015). To illustrate the methodological differences, an associational task trains a response pairing between two stimuli, for example a participant will learn to respond to a bending image and danger word with the same response key. On the other hand, a relational task requires the participant to differentially respond to stimuli based on the relation between two stimuli, for example responding true when a bending image and a danger word are presented together.

The development of implicit relational tasks has coincided with the advancement of Relational Frame Theory (RFT), a comprehensive theory of language and cognition based on behavioral principles (Barnes-Holmes, Barnes-Holmes, & Cullinan, 2000; Chase & Danforth, 1991). The underlying premise of RFT is that verbal behavior consists of relational responding to arbitrary stimuli based on a history of learned relations among objects and events in the world and images, gestures and sounds. Verbal behavior not only includes communication through language, but any behavior that uses images, words or gestures, and it can be observable or private (i.e., non-observable). Therefore, ratings of surveys, evaluation of implicit stimuli, and private thoughts are examples of verbal behavior. RFT can be considered comprehensive because it aims to explain both how verbal behavior is learned and how it moderates non-verbal behavior. The principles that describe the process by which relational responding is established and the moderation of non-verbal behavior have been derived from experimental analysis of behavior (for a comprehensive review, see: Barnes-Holmes, Barnes-Holmes, Hussey, & Luciano, 2015; Hayes, Barnes-Holmes, & Roche, 2001).

Implicit methodologies have been utilized in the development of RFT for investigating the strength of relational responding histories. For example, a researcher may be interested in determining if people have a history of evaluating insects negatively and fruits positively by using the following stimuli: “Beetles are terrible” and “Apples are delicious.” In this simple example, the relation is established using the word “are” between the insect/fruit and the adjective. This example demonstrates how relations may be specified using RFT theory. More complex relations may also be specified, such as perspective, conditional, causal and temporal relations (Barbero-Rubio, López-López, Luciano, & Eisenbeck, 2016; O’Hora et al., 2008; Raaymakers, 2018). Because implicit relational tasks permit the specification of complex relations, they can accommodate verbal statements similar to questionnaire items.

According to RFT theory, implicit tasks focus on the immediate relational response by minimizing the ability of the respondent to engage in extended relational responding (Barnes-Holmes, Barnes-Holmes, Stewart, & Boles, 2010). Extended relational responding occurs when a respondent is given sufficient response time and results in relating the stimuli with other private thoughts and stimuli in the environment. The sum of these additional influences is theorized to influence the extended relational response so that it may be different than the immediate response (Barnes-Holmes et al., 2006; Barnes-Holmes et al., 2010). To further illustrate this phenomenon, consider this example, a participant weakly endorses the belief on a questionnaire "I'm afraid I might injure myself if I exercise", and he arrives at this summary evaluation through the following steps: first he strongly agrees based on a history of exercise and pain (immediate relational response), but because response time is unconstrainted his endorsement is weakened due to a history of being exposed to the benefits of exercise (extended relational response). Thus, his final response is attenuated based on an evaluative combination of immediate and extended relational responses.

Using RFT to further evaluate the specification and presentation of stimuli during implicit tasks of previous studies of pain-related fear, several limitations can be identified. Associational tasks do not specify relations between stimuli and this may lead to unintentional variation of responding (De Houwer et al., 2015). Also, it has been assumed with associational tasks that words within a category share a similar affective valence (e.g., threat). To illustrate this, the threat stimuli used by Leeuw et al. (2007) were "dangerous" and "mean." While these words may be synonyms of "threat", they may generate differential responding depending on the context in which the words are used. Finally, associational implicit tasks have often used images paired with threat and safety words and this presentation format is different than the explicit statements that are evaluated for the same construct (Brauer et al., 2009; Caneiro et al., 2018, 2017; Leeuw et al., 2007). In summary, these limitations highlight several reasons to be skeptical of the degree of content validity between explicit and implicit measures.

Addressing content validity is challenging given the different forms of stimulus presentation between associative implicit tasks and questionnaire methods. To ensure maximal fidelity between explicit and implicit stimuli a natural language implicit task was used in this study. Using the natural language implicit task had two advantages: (1) it eliminated the potential confound that differences in performance across assessment conditions would arise due to the use of different stimuli in each assessment condition, and (2) it allowed for the specification of the relation between physical activities and danger to the back (e.g., “Moving boxes is dangerous for my back”). Therefore this study ensured a higher level of content validity than previous implicit pain-related fear studies by using identical stimuli across assessment conditions and specified the relation between an activity and threat to the spine.

In addition to addressing issues of content validity, there also exists a need to make basic research of implicit pain-related fear clinically relevant. This entails either establishing convergent validity with commonly used measures of pain-related fear or predictive validity with a criterion of clinical significance, such as physical and psychosocial functioning. While convergent validity would support the implicit instrument, to some extent it is expected that explicit and implicit measures should be discrepant and this divergence supports the purpose of the implicit instrument (Perugini, Richetin, & Zogmaister, 2010). When implicit and explicit measures are discrepant or unrelated, predictive validity remains especially important because it compares both instruments ability to predict a clinically relevant criterion. Up to this point, issues of convergent and predictive validity of implicit pain-related fear have been minimally evaluated. Therefore, testing both the convergent and predictive validity are important next steps in determining measurement properties and clinical utility of implicit pain-related fear.

For this study, an implicit test of pain-related fear was developed to assess if persons with CLBP have a history of evaluating potential threats to their spine as dangerous. Therefore, the immediate response, the one targeted via an implicit instrument, was hypothesized to be indicative of a history of reinforcement of pain-related fear responding. Additionally, the degree to which implicit pain-related fear can predict behavioral performance during pain-provoking activities (e.g., lifting and bending activities) is unclear. While individuals with higher levels of explicit pain-related fear have shown behavioral performance consistent with avoidance, no study has evaluated if implicit pain-related fear can predict behavioral performance (Swinkels-Meewisse, Roelofs, Oostendorp, Verbeek, & Vlaeyen, 2006; Vlaeyen, Kole-Snijders, Boeren, & van Eek, 1995). It appears plausible that implicit-pain related fear may better predict reduced bending and lifting given that implicit instruments are theorized to be predictive of spontaneous, habitual or automatic forms of behavior (Bargh, 1994; Egloff & Schmukle, 2002; Perugini, 2005; Perugini et al., 2010). Given that an implicit response is theorized to be immediate and spontaneous and that the execution of movement is non-conscious and automatic (Morsella & Bargh, 2011; Willingham, 1999), it was hypothesized that behavioral performance would be better predicted by implicit pain-related fear than explicit pain-related fear instruments.

Aims and Hypotheses

To summarize, this study aimed to evaluate implicit pain-related fear in CLBP using RFT as its guiding framework and determine aspects of convergent and predictive validity in relation to explicit measures. The specific aims and hypotheses were the following:

Aim 1: To develop an implicit pain-related fear procedure that addresses content validity with explicit constructs.

- ***Hypothesis 1a: Presence of Explicit Biases.*** Ratings of statements under explicit conditions will demonstrate biases favoring pain-related fear.
- ***Hypothesis 1b: Presence of Implicit Biases.*** Responding to statements during implicit procedures will demonstrate biases favoring pain-related fear.

Aim 2. To examine the convergent validity of implicit pain-related fear with explicit instruments of pain-related fear.

- ***Hypothesis 2: Convergent validity.*** Correlations between implicit and explicit measures of fear of pain will be positive, indicating that higher explicit pain-related fear is related to higher implicit pain-related fear.

Aim 3. To determine the predictive validity of implicit pain-related fear.

- ***Hypothesis 3a: Predictive validity.*** Implicit pain-related fear will be correlated with explicit measures of self-reported psychosocial and physical functioning and directly observed physical functioning.

- ***Hypothesis 3b: Unique predictive validity.*** Implicit pain-related fear will account unique variance of psychosocial and physical functioning after accounting for age, education, sex, and explicit pain-related fear.

Chapter 2

Methodology

Participants & Recruitment

Adults with chronic low back pain (CLBP; *N* = 74) were recruited. Inclusion criteria were that participants must be between the ages of 18 and 65, able to read English, and have CLBP (i.e., pain duration greater than 3 months). Individuals were excluded if they had multiple sclerosis, fibromyalgia, cancer related pain, were exhibiting symptoms of active psychosis or significant active suicidal ideation.

Participants were recruited from the Albuquerque community using fliers and advertisements in local classifieds (Alibi, Craigslist, Facebook and NextDoor) and the undergraduate psychology research pool. Participants received a $40 gift card to either Walmart or Target for their participation in a single experimental session. The duration of each session was one hour. During the session, participants completed tasks in the following order: survey instruments, implicit pain-related fear task, and behavioral tasks.

Pain-related Fear

Implicit Assessment of Pain-Related Fear. The Implicit Relational Assessment Procedure (IRAP; Barnes-Holmes et al., 2006) is a computerized response categorization task based on RFT (Hayes et al., 2001) which is theorized to assess the strength of specific relational responses based on one's language learning history. In this study, participants were presented with statements (e.g., "Moving boxes is dangerous for my back"; "Watching TV is safe for my back") and instructed to make relational responses (i.e., TRUE or FALSE) that were either consistent or inconsistent with instructional rules. The consistent rule, "physical activity is dangerous and sedentary activity is safe for my back", was hypothesized to be consistent with a verbal history of pain-related fear—a historical pattern of evaluating verbal descriptions of activities involving the back as a dangerous to the spine. The inconsistent rule, “physical activity is safe and sedentary activity is dangerous for my back” was specified to be orthogonal from the consistent rule. For each statement, participants were instructed to respond as quickly as possible without making mistakes in categorizing the stimuli. Response latency was recorded for each trial and a difference in response latency between consistent and inconsistent trials indicated the presence of an implicit bias.

The IRAP used software developed by Barnes-Holmes et al. (2006) and is based on a preparation of the IRAP previously used to examine natural language statements (Kavanagh, Hussey, McEnteggart, Barnes-Holmes, & Barnes-Holmes, 2016). To address content validity, natural language statements consistent with explicit measures of pain-related fear were developed. Natural language statements are statements that appear in complete sentence form and thus are representative of how stimuli are used in every-day speech. To assess more complex verbal stimuli, RFT researchers have developed implicit methods for examining natural language statements, which allow for greater conceptual correspondence (i.e., content validity) between implicit and explicit measures (Harte, 2015; Kavanagh et al., 2016).

The IRAP stimuli were developed based on the following considerations. First, negatives and negations (e.g., “not” and “no”) were not used. Prior IRAP research has demonstrated that the use of negations results in a task that is confusing and difficult to complete and therefore is not recommended (Hussey, Thompson, McEnteggart, Barnes-Holmes, & Barnes-Holmes, 2015). Second, activities for the stimuli were selected based on perceived harm to the back. Previous research has shown that persons with CLBP perceive activities that are more demanding of the back as more harmful, particularly when specific activities are identified (e.g., bending at the back to pick up boxes; Trost, France, & Thomas, 2009). To develop stimuli sets that were consistent and inconsistent with pain-related fear, physical and sedentary activities were paired with “dangerous for my back” or “safe for my back.” The stimuli for the physical activity category were activities commonly avoided by individuals with chronic low back pain. Sedentary activities were chosen for their presumed lack of relation to low back pain. Sentence length was minimized and made consistent across all stimuli to reduce variability in response time due to comprehension of the verbal stimuli. The range of number of words per sentence was 6 to 8. Each item was designed to have a consistent structure (activity + “dangerous”/“safe” + “for my low back”). See the “IRAP stimuli and Explicit Survey” appendix for the stimuli used.

During the IRAP, participants completed a maximum of eight block pairs followed by three test block pairs, each block pair contained one block for the consistent and inconsistent rules (32 trials for each rule). Prior to each block, participants were instructed to respond to the consistent or inconsistent rule; “respond AS IF physical activity is dangerous and sedentary activity is safe for your back” or “respond AS IF physical activity is safe and sedentary activity is dangerous for your back,” respectively. For the exact instruction script see Table A2.1 in the “IRAP stimuli and Explicit Survey” appendix. Instructions were alternated for each block.

Each block consisted of 32 trials. During each trial participants were shown a statement (e.g., “Eating is dangerous for my back”). Responses were recorded via a keyboard as “TRUE” or “FALSE” based on the relation of the statement to the instructional rule for that block. See Figure 1 for an example of stimulus presentation on a screen. To obtain reliable and internally consistent scores across trials, it was necessary for participants to meet or exceed a prespecified level of performance. This level of performance was the mastery criteria, which must be met for participants to advance from the practice to test phase of the IRAP. Additionally, the mastery criteria were to be maintained during the test phase for inclusion of the participant’s data. The mastery criteria in this study were similar to previous IRAP studies (>80% accuracy and < 2000 ms reaction time). Participants repeated practice blocks until they met the mastery criteria and then the test blocks began. If participants did not meet the mastery criteria after eight practice block pairs, then the study ended. A maximum eight practice block pairs were used to allow subjects sufficient practice to meet the mastery criteria.

The IRAP generates four different scores, each is based on a specific trial-type. Two of the trial-type scores were consistent with an implicit bias of pain-related fear: physical activity is dangerous (PA = danger) and sedentary activity is safe (SA = safe). The second two were inconsistent: physical activity is safe (PA = safe) and sedentary activity is dangerous (SA = danger). Thus, consistent responses were the following, PA = danger/true, PA = safe/false, SA = danger/false, SA = safe/true as they were congruent with the consistent rule (i.e., “physical activity is dangerous and sedentary activity is safe”).

Prior to scoring the IRAP trials, responses greater than 10000 ms and less than 300 ms were removed. The IRAP was scored using previously established procedures (Hussey et al., 2015). In short, for each trial-type the scoring algorithm produced a Cohen’s *d*, the *D*-score, by subtracting response times for consistent from inconsistent trials and dividing the difference by the standard deviation. This scoring method produces a *D*-score for each trial-type. An “overall” *D*-score is also computed by averaging across trial-type *D*-scores. *D*-scores of inconsistent trial-types were transformed so that positive *D*-scores indicated responding consistent with an implicit bias of pain-related fear and negative *D*-scores indicated inconsistent responding.

Explicit Assessment of Pain-related fear. Three questionnaires were used to assess explicit pain-related fear, the Tampa Scale of Kinesiophobia (TSK), the Pain Anxiety Symptoms Scale (PASS) and an explicit survey (ES) of all IRAP stimuli. The TSK is a 17-item questionnaire that measures fear of movement resulting from a feeling of vulnerability to pain or injury (Miller, Kori, & Todd, 1991). Participants rate their degree of agreement with each statement. Ratings are summed and a higher total score reflects greater pain-related fear. The PASS is a 20-item questionnaire that measures four response modes of pain-related fear: cognitive, behavioral, fear appraisals and physiological anxiety (McCracken & Dhingra, 2002). The PASS items are rated on a frequency scale from 0 (never) to 5 (always), scores are summed, and a higher score indicates greater pain-related fear. The ES was developed to evaluate the IRAP stimuli under explicit conditions. The purpose of the ES was to maintain a high degree of content validity with the pain-related fear IRAP, since items were the same. The ES also allowed the creation of individual scores for each trial type and this permitted tests of convergent validity for each trial-type *D*-score. Similar manipulation check surveys have been used for assessment of convergent validity of the IRAP (Bast, Linares, Gomes, Kovac, & Barnes-Holmes, 2016). Each item on the ES was used in the IRAP and was rated on a 5-item Likert scale (“100% false for me”, “Probably false for me”, “Unsure if it is true or false for me", "Probably true for me", "100% true for me"). Responses were respectively coded as "-2", "-1", "0", "1", "2", and a score of zero represented having zero explicit bias. Scores were averaged for each trial-type creating four *E*-scores (PA = Danger, PA = Safe, SA = Danger, and SA = Safe). An "overall" *E*-score was created by averaging across all the trial-type *E*-scores. Like *D*-scores, for all *E*-scores positive values indicated responding consistent with a bias of pain-related fear and negative *E*-scores indicated inconsistent responding. Under the assumption that *D*-scores and *E*-scores measure the same construct the two conditions were directly compared by using Cohen's *d* of the *D*-scores and *E*-scores (Griffith et al., 2015).

Participant Functioning

Psychosocial Functioning. The Sickness Impact Profile-Chronic Pain (SIP-CP) is a 46-item questionnaire based on the original version of the SIP which was designed to measure areas of life affected by chronic pain (McEntee, Vowles, & McCracken, 2016). This study only used the psychosocial subscale of the SIP-CP.

Physical Functioning. The Modified Oswestry Disability Index (ODI) was used to measure self-reported function specifically related to CLBP (Fritz & Irrgang, 2001). The original Oswestry consisted of ten questions of physical functioning: pain intensity, personal care, lifting, walking, sitting, standing, sleeping, sex life, social life, and traveling (Fairbank, Couper, Davies, & O'Brien, 1980). For each question the participant selects one of five possible levels of functioning. The total score is summed and multiplied by two to create a range from 0 to 100. Participants have demonstrated limited variability with the question related to sex life (Hudson-Cook, Tomes-Nicholson, &

Breen, 1989), therefore, this question was replaced with a question related to employment and homemaking.

Participants also completed three behavioral tasks to assess directly observed behavior, the Timed Up and Go (TUG), Repeated Forward Flexion (RF), and Loaded Forward Reach (LR). These tasks were selected based on their use in functional assessment of CLBP in both research and clinical settings and their correlations with pain-related fear (Ishak, Zahari, & Justine, 2017; Schiphorst et al., 2008; Simmonds et al., 1998).

Timed Up and Go. The TUG was used to assess global functioning. The TUG has been used to measure global physical function in numerous clinical studies and demonstrates excellent reliability (0.98 and 0.99, test-retest and interrater ICCs respectively; Simmonds et al., 1998).

Repeated Forward Flexion. Because CLBP is correlated with decreased velocity and range of motion in the lumbar spine when compared to healthy controls (Marras & Wongsam, 1986), the RF was used as a clinical measure of spine velocity and range of motion. During RF participants bend forward from a standing position to the limit of their range of motion and return to standing five times. The RF was performed three times and the average across trials was used for analyses. This test has previously demonstrated good test-retest (0.89) and excellent interrater (0.99) ICCs (Simmonds et al., 1998).

Loaded Forward Reach. The LR was used to measure ability to bend forward while holding an external weight—a fearful activity in those with high levels of pain-related fear. During the task the participant stood next to a wall on which a ruler was mounted at shoulder height. The participant began with arms outstretched while holding a weight (4.0 kg for men; 3.0 kg for women), and then reached forward as far as possible keeping their arms parallel to the ground (Anderson, Lygren, Magnussen, Eide, & Strand, 2013). Maximum reach was recorded in centimeters as the difference from the final position to the starting position. During the task participants were instructed to keep their knees straight and their heels on the ground. The LR was performed three times and the average across trials was used for analyses. This test has demonstrated excellent test-retest and interrater ICCs (0.99 and 0.99 respectively; Simmonds et al., 1998).

Participant Characteristics

Demographics. Gender, ethnicity, race, education and employment were assessed for all participants.

Pain. The Brief Pain Inventory **(**BPI) assessed average intensity of pain using a 0 to 10 numerical rating scale (Cleeland & Ryan, 1994). Pain duration was assessed by asking how long participants had experienced chronic low back pain. Average days per week with pain was also assessed by asking "How many days a week on average do you experience low back pain?"

Treatment Seeking. The sample was recruited from the community and therefore it is unknown to what extent the sample was seeking active treatment for their CLBP. To assess if participants were seeking active treatment, they were asked the following question, "Are you currently receiving or seeking any form of ACTIVE treatment from a health care provider for your low back pain? For example, going to, or planning on going to the doctor, psychologist, physical therapist, chiropractor, or massage therapist. Taking pain medications is NOT a form of active treatment", participants either responded "Yes" or "No" to this question.

Analytical Plan

Initially, all variables were inspected for normality. Numerous variables demonstrated significant deviations from normality, as defined by obtaining a value greater than two for skew and kurtosis when divided by their respective *SEs* (D'agostino & Belanger, 1990). Therefore, Kendall's tau (r_τ) was used for correlations because it is robust to outliers and deviations from normality (Arndt, Turvey, & Andreasen, 1999). Student's *t*-tests were used for all tests of means and χ^2 was used for testing categorical variables (Fisher's exact tests when cell count was < 5). Hierarchical linear regression was used to test unique predictive ability (ΔR^2) of the overall and PA = Danger *D*-scores. Prior to the last step in the hierarchical regression procedure, previous steps accounted for variance due to baseline characteristics (sex, age, and education) and explicit bias in pain-related fear (TSK and PASS). Crammer's *V* was used for reporting effect sizes of categorical variables, Cohen's *d* for effect sizes between group means and when differences were within participants a within participant modification (d_w) was performed (Cohen, 1988; Gibbons, Hedeker, & Davis, 1993).

Power Analysis. The correlation between explicit and implicit measures of pain-related fear was used for determining the number of subjects necessary to detect a medium-large effect ($r = 0.45$). Forty-four subjects were required to achieve a power of 90% based on this effect size. This effect size was deemed reasonable based on previous estimated effect sizes for bivariate correlations of the IRAP with explicit measures in clinical populations (Vahey, Nicholson, & Barnes-Holmes, 2015). Because the IRAP is a cognitively demanding task, not all subjects were expected to meet the mastery criteria and previous studies have found attrition rates of 8.3% (Harte, 2015). Because chronic pain is associated with cognitive impairment (Moriarty, McGuire, & Finn, 2011), a conservative estimate of 20% attrition was used for this study. Therefore, it was expected that 53 participants would be needed to meet the aim of obtaining 44 subjects with complete data.

Chapter 3

Results

IRAP Performance

A total of 74 subjects were enrolled and 45 (61%) of these subjects were able to meet the mastery criteria and were included in the final analyses. Of those that failed to meet the mastery criteria, 16 failed because they failed to meet the latency criterion (2000ms), three failed because they did not meet the accuracy criterion (80%), and nine failed because they failed to meet both criteria. One participant's data was excluded because of failure to meet the accuracy and latency criteria in at least two of the three test blocks. Six participants had one test block pair dropped because of a failure to meet the mastery criteria for that block pair, however their remaining data were included.

Participants who completed the IRAP needed a median of 3 (M = 3.6, SD = 2.10) practice blocks trials. Median response time was 1669 (SD = 817.86) ms. The internal consistency (split-half reliability) for the four trial-types were as follows, PA = Danger (physical activity is dangerous), 0.46 [0.14, 0.77]; PA = Safe (physical activity is safe), 0.54 [0.27, 0.81]; SA = Danger (sedentary activity is dangerous), 0.22 [-0.23, 0.67]; SA = Safe (sedentary activity is safe), 0.17 [-0.32, 0.65]. The reliability across test blocks for *D*-scores were as follows, PA = Danger, 0.34 [-0.03,0.72]; PA = Safe, 0.42 [0.09, 0.76]; SA = Danger, 0.56 [0.31,0.82]; SA = Safe, 0.15 [-0.34,0.65]; and the overall *D*-score 0.41 [0.07 ,0.75].

Participant Characteristics

Because of the high attrition rate during the IRAP procedure, the characteristics of the sample were analyzed by completion of the IRAP (see Table 1 for this comparison).

Overall, in comparison to those who did not complete the IRAP, completers were younger, more highly educated, and reported lower pain, distress and disability. Additionally, the test-retest reliability of the RF and LR were 0.97 [0.95, 0.99] and 0.97 [0.94, 0.98], respectively.

Presence of Explicit Biases

Explicit biases of pain-related fear were found for the overall *E*-score and trial types SA = Danger and SA = Safe (all *p*-values < 0.001). See Figure 2 for presentation of explicit and implicit biases alongside and Table 2 for reporting of correlations, means and standard deviations. For correlations between *E*-scores, PA = Danger and PA = Safe were correlated, as well as and SA = Danger and SA = Safe. The physical activity *E*-scores (both PA = Danger and PA = Safe) were correlated with other explicit measurements of pain-related fear, and physical functioning (both self-reported and behavioral tasks). The overall *E*-score was only correlated with one measure of pain-related fear (TSK).

Presence of Implicit Biases

An overall implicit bias of pain-related fear was demonstrated (overall *D*-score) as well as for trial-types PA = Danger, and SA = Safe (See Table 2). However, the SA = Danger *D*-score was also significant but discrepant with pain-related fear (i.e., opposite the hypothesized direction).

Convergent Validity

The only evidence of convergent validity was the correlation between the *D*-score SA = Safe and the overall *E*-score. Otherwise, there was no other evidence of convergent validity as none of the other *D*-scores were correlated with pain-related fear. Implicit biases of pain-related fear were significantly different than their explicit counterparts (*E*-

score – *D*-score) for the overall score ($p = 0.009$, $d_w = 0.41$), SA = Danger ($p < 0.001$, $d_w = -1.11$) and SA = Safe ($p < 0.001$, $d_w = 0.60$).

Predictive Validity

There was no evidence of predictive validity as implicit pain-related fear was not correlated with any measure of psychosocial or physical functioning. Additionally, none of the hierarchical regression models demonstrated that implicit pain-related fear uniquely predicted psychosocial or physical functioning. See Tables 3 – 22 for model results at each step. These analyses were also conducted for the remaining trial-type *D*-scores, see the "Supplemental Results" appendix for these results (Tables A1.2 – A1.31).

Chapter 4

Discussion

This study aimed to investigate the presence of implicit pain-related fear and convergent and predictive validity in CLBP. Implicit biases of pain-related fear were demonstrated supporting the hypothesis that individuals with CLBP have a verbal history of being reinforced to regard physical activity as dangerous and sedentary activity as safe. However, this study does not provide evidence that implicit and explicit pain-related fear are correlated or that implicit pain-related fear is predictive of functioning. In contrast, explicit pain-related fear instruments predicted psychosocial and physical functioning (both self-reported and behavioral performance).

When participants explicitly rated pain-related fear IRAP stimuli, they demonstrated an explicit bias consistent with pain-related fear. However, only the sedentary activity *E*-scores were significant, thus indicating that evaluation of sedentary activity as safe was primarily responsible for the overall explicit bias of pain-related fear. Only the overall and the physical activity *E*-scores were correlated with established instruments of pain-related fear and physical functioning. These correlations provide evidence that items developed for testing implicit pain-related fear were sufficient at eliciting responses consistent with pain-related fear, at least under explicit conditions. None of the *E*-scores were correlated with psychosocial functioning and in fact, no study variable correlated with psychosocial functioning. This is not an unexpected finding since all other study variables assessed physical functioning or pain-related fear, which focuses more on attitudes about activity, (re)injury, and pain, than the emotional distress of pain. On the balance, these results support the selection of stimuli used in this study as they were sufficient at eliciting explicit pain-related fear and were correlated with physical functioning.

Turning to implicit pain-related fear biases, results were consistent with recent prior work of implicit pain-related fear (Caneiro et al., 2018, 2017). While both studies by Caneiro and colleagues assessed implicit pain-related fear, they did so with a different task, the IAT, and asked a slightly different question: if the implicit pain-related fear response could be generated by presenting images of lifting movements (lifting with a rounded vs. straight spine). In contrast the current study determined if an implicit bias was elicited with broader categories of activities (physical vs. sedentary). Although these previous studies sought to evaluate an implicit bias that is potentially more subtle than the distinction made in this study, the effect sizes reported in these studies were larger [d = 1.44, and d = 0.90; respectively for Caneiro et al. (2018 & 2017)] than was found in this study (d = 0.56). The differences in the overall implicit effect size between the current study and those by Caneiro et al. might be attributed to implicit biases being better elicited with images of movements than words or methodological differences between the IRAP and IAT.

Despite the recent positive findings of this study and the studies by Caneiro and colleagues, the overall literature on implicit pain-related fear is mixed. Several previous studies have not demonstrated implicit pain-related fear (Brauer et al., 2009; Goubert, Crombez, Hermans, & Vanderstraeten, 2003; Leeuw et al., 2007; Vancleef et al., 2007). The discrepancy between the most recent studies and prior studies may be attributed to the type of implicit measure used. Earlier studies of implicit pain-related fear used the APT and EAST and these tasks differ in their methods and have demonstrated poor internal consistency (LeBel & Paunonen, 2011). Other possible reasons include the use of different stimuli and measuring biases only in healthy controls and sampling populations with different pain conditions. Given the multitude of factors that could explain differences between studies and the lack of systematic exploration of implicit methods within specific pain conditions, it is difficult to reach definitive conclusions for studies that report a lack of an implicit effect.

A unique aspect of this study was the ability to evaluate the components of the implicit bias separately by using the trial-type *D*-scores. Previous studies of implicit pain-related fear have used methods that only permit reporting an overall implicit effect. A limitation in only evaluating the overall implicit effect is that it is not possible to investigate the contributions of trial-type responses to an overall bias. Examining the pattern of implicit trial-type *D*-scores in this study revealed a pattern similar to their explicit counter parts (*E*-scores), with one exception: sedentary activity was evaluated as dangerous implicitly and not dangerous explicitly. On one hand this finding might constitute evidence of avoidance-endurance responding, that is responding to pain with a dysfunctional persistence in physical and social activities (Hasenbring, Chehadi, Titze, & Kreddig, 2014). For example, it might be expected that individuals who persist in activities might hold the belief that sedentary activity is harmful and therefore continue to persist with physical activities without regard to their psychological distress. Alternatively, this response might also reflect a belief that sedentary is harmful due to an awareness of the benefits of physical activity. This seems plausible given that physical activity has been extensively promoted during the last half-century to reduce the burden of many chronic diseases (Manley, 1996). However, neither of these hypotheses were fully supported as participants consistently responded to sedentary activity as safe across both explicit and implicit conditions. In fact, the largest implicit effect was demonstrated when evaluating sedentary activity as safe, indicating that this score had the largest contribution to the significant overall effect. Additionally, correlations between implicit and explicit sedentary activity were not significant, further indicating that there was no relationship between explicit and implicit perceived harm of sedentary activity. In summary, the contradictory findings regarding the perceived harm of sedentary activity were difficult to interpret. Future studies might either explore the possibility of implicit avoidance-endurance responses or beliefs about the benefits of physical activity in conjunction with pain-related fear.

Several previous studies have evaluated the convergent validity between explicit and implicit pain-related fear (Caneiro et al., 2018, 2017; Goubert et al., 2003; Leeuw et al., 2007). Only Caneiro et al. (2018) reported an instance of a significant correlation between an implicit and an explicit measure of pain-related fear. A limitation of this study was that it included only healthy controls. Therefore, while there are several instances of convergent validity between explicit and implicit measures using the IRAP in the literature (Golijani-Moghaddam, Hart, & Dawson, 2013), the lack of convergent validity found in the current study was consistent with previous studies of implicit pain-related fear.

The absence of convergent validity is not necessarily a problematic issue for implicit methods, as theoretically implicit and explicit measures are expected to diverge and this is where their utility lies, in that they are providing a unique form of measurement. However, in the absence of convergent validity then predictive validity remains the only form of measurable validity. The current study sought to establish predictive validity of participant functioning by including both self-reported measures and measuring direct behavioral performance of global mobility, bending and reaching tasks. The results did not support the hypothesis that implicit pain-related fear predicted participant functioning. On the contrary, there were several instances in which explicit pain-related fear did predict psychosocial and physical functioning (both self-reported and behavioral).

The contrast between the predictive ability of explicit and implicit measures for pain-related fear may be due to a dependency on extended relational responding to generate accurate and reliable responses. This observation is contrary to the original hypotheses of the study, therefore, further examination of why this might be the case is warranted. Extended relational responding entails allowing the response to come under the control of additional stimuli. These additional stimuli may be present in the physical environment but may also be private cognitions and emotions; as a group these additional influences are referred to as contextual influences. Examples of contextual influences would be considering one's current level of pain, the movement itself and the context that the movement is occurring (at home, at work, on the sports field, etc.). Stated differently, to respond to a verbal stimulus about pain-related fear may entail an extended response that includes more contextual information than is immediately generated by the verbal stimulus itself. To illustrate this, when responding to: "I am afraid that I might injure myself accidentally" the respondent may have to place themselves (i.e., imagine) in a situation where this occurs, for example, reaching to pick an object up off the floor. An implicit condition which constrains the time to include contextual stimuli may be insufficient at generating an implicit pain-related fear response. Indeed, this interpretation has been gaining support as it appears that implicit measures might be highly sensitive to momentary factors (e.g., recently activated memories, current goals, mood or even race of the experimenter; Ferguson & Bargh, 2007).

Limitations

This work involved an exploratory study of implicit pain-related fear using a relatively new preparation of the IRAP, thus there are several limitations of the current study that should be considered. This study did not include healthy controls. Therefore, it cannot determine if different levels of implicit pain-related fear are to be found in a healthy population. If different levels of implicit pain-related fear were found this would suggest that the language learning histories are different between those with CLBP and those without. Two studies that used similar preparations of an implicit pain-related fear found implicit biases present in both those with CLBP and healthy controls (Caneiro et al., 2017, 2018). Thus, there is some evidence that implicit pain-related fear may be present in both groups. Future work should continue to explore the similarities and differences of implicit pain-related fear between those with CLBP and healthy controls.

This study was the first to use the IRAP within a chronic pain sample. To date, there have been four previous studies of implicit pain-related fear in those with CLBP, each employing different implicit methodologies and stimuli. Therefore, firm conclusions cannot be drawn based on a small group of heterogenous studies. It may be possible that other methodologies or stimuli may better demonstrate convergent or predictive validity than the current study.

The recruitment methods used in this study generated a sample that had lower levels of pain-related fear and disability than have been found in the literature. Two studies have reported mean norms of the TSK as 43.2 for those with CLBP and 41.2 for those with chronic pain across a range of conditions (Nicholas, Asghari, & Blyth, 2008; Roelofs et al., 2011). The current study's participants were significantly lower than these reported norms ($p < 0.001$, $d = 0.71$; and p = 0.006, $d = 0.41$; respectively). However, previous work has demonstrated that levels of pain-related fear similar to the current study are associated with decreased physical functioning (Swinkels-Meewisse et al., 2006). With regards to self-reported functioning, in a meta-analysis Fairbank and Pynsent (2000) reported a mean ODI of 43.3 and in a smaller sample George et al. (2008) reported a mean of 40.2 for individuals with CLBP. Participants in this study had a mean ODI of 26.8 which was significantly lower than both of these prior studies ($p < 0.001$, $d = 1.14$; and p < 0.001, $d = 0.92$; respectively).

Lower scores of pain-related fear and functioning may have been observed in this study because this sample was non-treatment seeking, that is they were not recruited as part of their course of care at a medical clinic. Indeed, there is some evidence for this as Huis in 't Veld et al. (2007) in a sample of individuals with cervical pain reported significantly lower TSK in a non-treatment seeking sample than what have been reported in the normative literature. However, treatment seeking does not appear to moderate the relation between pain-related fear and functioning (Zale, Lange, Fields, & Ditre, 2013). Further support of this is also evident in that self-reported treatment seeking was not associated with completion of the IRAP, pain-related fear or functioning.

A high rate of participant attrition (39.25%) was observed due to participants not meeting the mastery criteria. This rate was considerably higher than what has been reported in the IRAP literature (Harte, 2015; Kavanagh et al., 2016; Kavanagh et al., 2019). Those that did not successfully complete the IRAP had lower levels of education, higher pain intensity, higher pain-related fear, and lower levels of physical functioning. It is possible a high attrition rate led to floor effects between variables. While this remains a possibility, it is important to note that those that passed the IRAP still demonstrated patterns of pain-related fear and functioning consistent with the literature, that is, those with higher levels of pain-related fear had lower levels of functioning (Wicksell, Olsson, & Melin, 2012; Zale et al., 2013).

Participants that failed to meet the mastery criteria did so mostly because they struggled to meet the latency criteria. It has been recommended that IRAP use “the lowest latency criterion that is feasible for the current population and stimulus-set—recognizing, for example, that more complex stimuli (e.g., statements vs. single words) may require a longer response window” (Golijani-Moghaddam et al., 2013, p. 106). A more restrictive IRAP latency criteria was selected for this study to increase the internal consistency of responding (Barnes-Holmes, Murphy, Barnes-Holmes, & Stewart, 2010). Despite using the more restrictive criteria, internal consistency values were still less than that what has been recommended for behavioral instruments ($\alpha > 0.70$; Cortina, 1993). However, internal consistency for the implicit pain-related fear IRAP was generally within the reported to range of α for the IRAP (i.e., between 0.23 and 0.85 with a mean of 0.65; Golijani-Moghaddam et al., 2013).

To further explore the potential influence of using less restrictive mastery criteria on the attrition rate and floor effects, an exploratory analysis was performed by computing practice blocks as test blocks after participants met “relaxed” mastery criteria (i.e., < 3000 ms latency, and > 80% accuracy). To perform this analysis, practice blocks after the participant met relaxed criteria were computed as test blocks across all subjects. The use of the relaxed criteria decreased attrition to 30% (n =52 passed the IRAP) and decreased the median number of practice blocks to 2 (M = 2.00, SD = 1.42) but did not significantly alter the levels of implicit pain-related fear or correlations with explicit pain-related fear or functioning. These results are summarized in Figure A1.1 and Table A1.1 in the “supplemental results” appendix. Cautious interpretation of these results is warranted because this analytical step is not the same as conducting the experiment with the relaxed latency criteria. Participants in the experiment were operating under the instruction and given feedback to keep their responses at or below 2000 ms. It is entirely possible that some participants would make a tradeoff between response time and accuracy to meet the mastery criteria, simply changing the criteria at analysis would not capture these differences in performance. Therefore, these results at a maximum should provide some very preliminary data for researchers who wish to further explore implicit pain-related fear using different mastery criteria.

Several changes to the implicit procedure may have led to lower attrition rates. During associational implicit tasks, participants evaluate images and single words. By including entire sentences, comprehension time was increased. It may be the case that a 2000 ms latency criterion resulted in participants not sufficiently comprehending the stimuli. This issue was likely compounded by the fact that individuals with chronic pain demonstrate comorbid factors that likely affect cognitive function (Moriarty et al., 2011). Cognitive function refers to an individual's ability to process, comprehend and learn, and includes, imagination, intelligence, attention, memory, processing speed, language, perception and decision making. This study did not include any measures of specific cognitive function, but education did significantly predict IRAP attrition and education has been shown to corelate with intelligence abilities specifically related to verbal and reasoning skills (Cliffordson & Gustafsson, 2008; Kaufman, Kaufman, Liu, & Johnson, 2009). Additionally, IRAP performance has been correlated with measures of intelligence (O'Toole, Barnes-Holmes, Murphy, O'Connor, & Barnes-Holmes, 2009). On the balance, it seems reasonable that the high attrition rate was likely due to the complexity of verbal stimuli, restrictive mastery criteria, and cognitive abilities of the CLBP sample. Therefore, future studies might achieve a lower attrition rate by either reducing the complexity of verbal stimuli, using a less restrictive mastery criteria or developing an implicit task that is less cognitively demanding.

Future Directions

Research of implicit biases in clinical pain populations is challenging due to the interaction between reduced cognitive performance of those in chronic pain and the relatively high-level cognitive ability required by implicit tasks (Weiner et al., 2006; Eccleston & Crombez, 1999). Further, cognitive performance may also be limited by attentional interference of persistent high levels of pain (Eccleston, 1995). This interference may place a ceiling on the types of cognitive assessment that clinical pain populations can successfully, and reliability respond to. Therefore, the field of implicit pain-related fear may want to focus on several methodological issues that may address these specific cognitive considerations of participants in order to improve measurement. First, in this study there appears to be a potential confound of the implicit task and the level of pain and disability of the participants. Therefore, future studies should evaluate implicit tasks at alternative levels of mastery criteria (e.g., 80% accuracy and 3000 ms latency criterion). Second, future studies should assess for methodological variance between different implicit tasks, especially for tasks that are potentially less cognitively demanding and thus less likely to create confounds with levels of pain and disability. For example, evaluating the implicit performance on IAT vs. the natural language IRAP would help determine if the methodological differences between assessment methods are confounding results. Related to this, if researchers use several different implicit assessments, they should attempt to have participants evaluate all implicit stimuli under explicit conditions. This recommendation will help researchers determine if differences in responding are due to methodological differences between tasks or stimuli selection. Finally, researchers interested in the implicit evaluation of pain-related fear should attend to methodological advances in the field of implicit cognition. Researchers are continually developing new implicit tasks, scoring algorithms and refining parameters of existing tasks for specific populations. Further, novel implicit tasks such as the one used in this study have not gone through the same systematic methodological advancement as established procedures (e.g., IAT). Therefore, systematically exploring these methodological advancements in chronic pain populations may help researchers identify procedures that are more amenable to chronic pain populations.

Conclusions

In summary there is some evidence that individuals with CLBP demonstrate a bias of implicit pain-related fear (current study; Caneiro et al., 2017). However, there is also evidence that this bias is present in healthy controls (Caneiro et al., 2018), therefore it remains unclear to what degree these biases are different between those with and without CLBP. Implicit pain-related fear biases may reflect a common language history for evaluating certain movements and postures as more threatening to one's spine than others and this bias is present both in healthy controls and those with CLBP. There is limited evidence that implicit scores are related to their explicit counterparts. This is even true when the explicit scores are derived from the exact same stimuli that were presented during the implicit task, as was done in this study. Finally, there is no evidence that implicit pain-related fear predicts physical functioning measured by self-report or behaviorally.

These results beg the question, *what is the utility of implicit pain-related fear for both for basic and clinical science and why go to the trouble of measuring implicit biases*? For basic science, the IRAP and related implicit methodologies have led to a proliferation of hypotheses and methods to test the relationship between cognition, language and behavior (Barnes-Holmes et al., 2010; Gawronski & Payne, 2010; Vahey et al., 2015). However, translating implicit methods from the basic to clinical science remains challenging. Part of this challenge is due to the poor internal consistency and reliability of implicit measures, a ubiquitous issue within the field of implicit measurement (Gawronski & Payne, 2010; Golijani-Moghaddam et al., 2013). Newer generation implicit measures such as the IAT and the IRAP have led to improvements in reliability coefficients (Teige-Mocigemba, Klauer, & Sherman, 2010). However, until there is continued improvement in the psychometric properties of implicit measures translation of findings from basic to clinical science will likely remain challenging (LeBel & Paunonen, 2011). At the present time there is very little that can be concluded from a clinical perspective about the presence of implicit pain-related fear. To increase the relevance to clinical science, future studies will likely have to systematically explore implicit methods across a variety of stimuli preparations and continue to evaluate convergent and predictive validity in conjunction with the general improvement of the psychometric properties of implicit instruments.

In conclusion, while this study's findings are broadly consistent with the literature of implicit pain-related fear—in an area where findings are inconsistent and convergence with explicit constructs remains elusive—these findings can be viewed as exemplar in the challenge of using implicit measures in clinical science. Understanding the role that implicit biases of pain-related fear have in determining pain behaviors is an emerging area in pain science. With respect to pain-related fear there is evidence that biases favoring implicit pain-related fear exist in individuals with CLBP and the results from this study support this finding. However, the lack of convergent and predictive validity found in this study creates doubt about their clinical utility and offers a window into the complex picture of understanding the relation between verbal behavior and pain-related fear avoidance.

Figure 1 Example presentation of IRAP stimuli

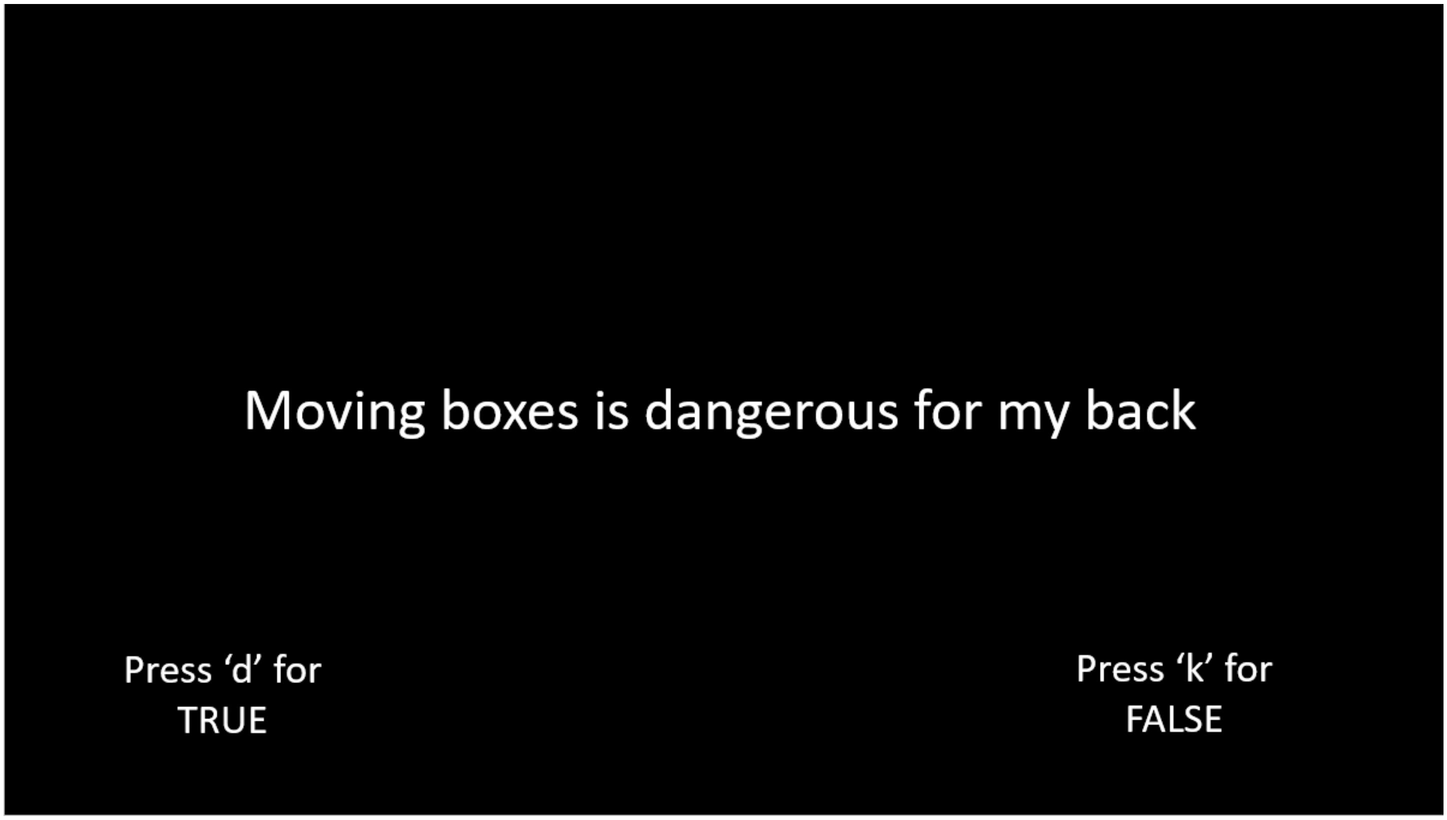
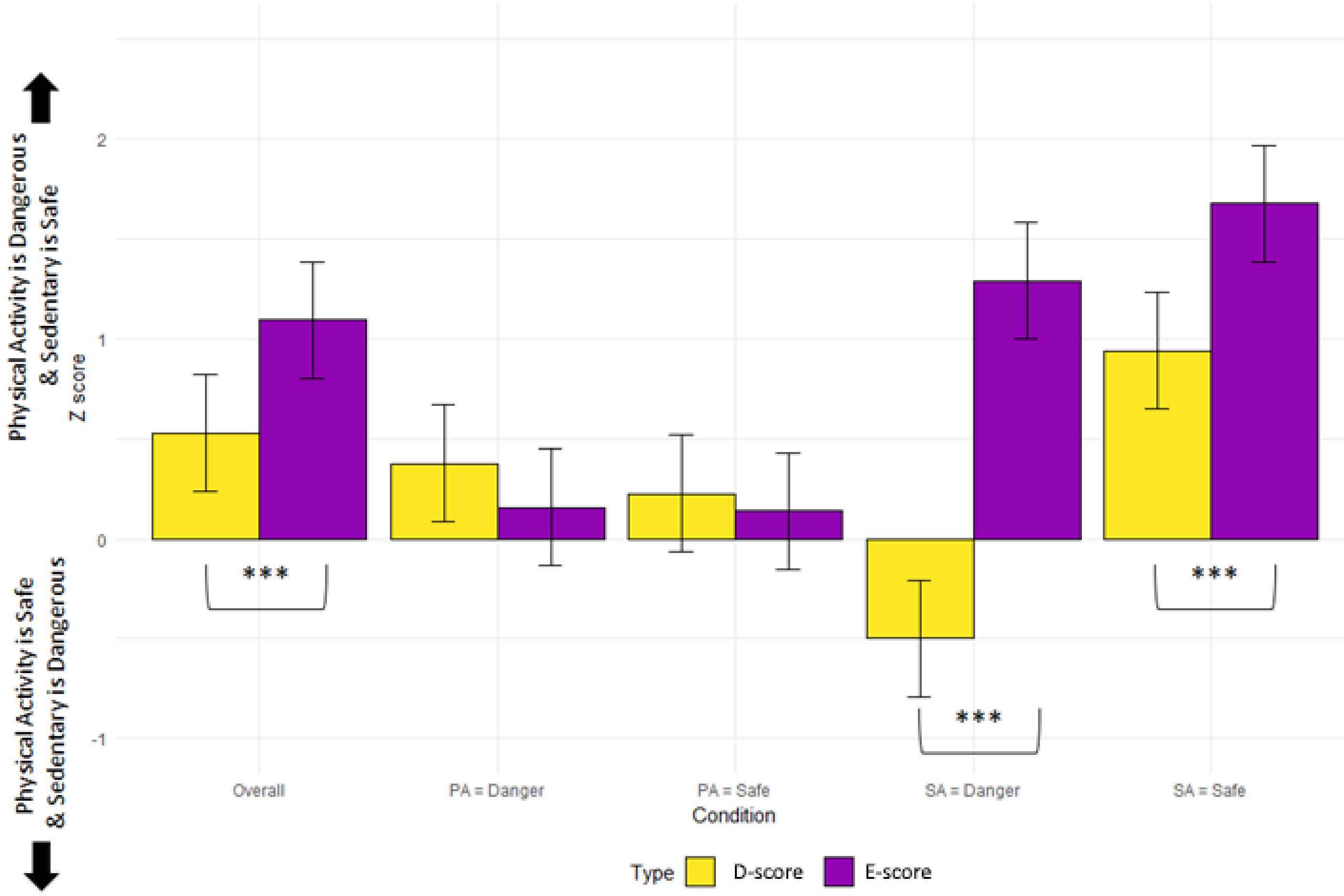


Figure 2 Standardized pain-related fear IRAP (D-scores) and Explicit Survey (E-Scores)



Note. Error bar are a 95% confidence interval. Scores are reported as Cohen's *d* (M/SD). Positive scores indicate responding consistent with "physical activity is dangerous and sedentary activity is safe for my back" while negative scores indicate responding consistent with "physical activity is safe and sedentary activity is dangerous for my back". * indicates $p < .05$. ** indicates $p < .01$. *** indicates $p \leq .001$.

Table 1 Descriptive by passing IRAP mastery criteria

Predictor	Level	Pass IRAP: No *n* = 29	Pass IRAP: Yes *n* = 45	*p*-value	Effect Size
Gender	Female	12 (30.0%)	28 (70.0%)	0.1292	0.20 ^{V}
	Male	17 (50.0%)	17 (50.0%)		
Age		50.7 (8.4)	40.6 (13.3)	**<0.001**	**0.86**
Ethnicity	Hispanic	11 (42.3%)	15 (57.7%)	0.877	0.05 ^{V}
	non-Hispanic	18 (37.5%)	30 (62.5%)		
Race	American Indian or Alaskan Native	2 (66.7%)	1 (33.3%)	0.215	0.31 ^{V}
	Black	3 (75.0%)	1 (25.0%)		
	More than one race	5 (55.6%)	4 (44.4%)		
	Other	4 (57.1%)	3 (42.9%)		
	White	15 (29.4%)	36 (70.6%)		
Education	Less than 12 years	2 (50.0%)	2 (50.0%)	**0.005**	**0.46** ^{V}
	High school diploma or equivalent	8 (88.9%)	1 (11.1%)		
	Some college	8 (33.3%)	16 (66.7%)		
	Associates degree	5 (55.6%)	4 (44.4%)		
	Bachelor's degree	2 (12.5%)	14 (87.5%)		
	Master's degree	3 (33.3%)	6 (66.7%)		
	Doctorate	1 (33.3%)	2 (66.7%)		
Employment	Full-time	5 (27.8%)	13 (72.2%)	0.379	0.29 ^{V}
	Part-time	1 (33.3%)	2 (66.7%)		
	Unemployed	3 (50.0%)	3 (50.0%)		
	Homemaker	1 (33.3%)	2 (66.7%)		
	On disability	7 (58.3%)	5 (41.7%)		
	Retired	5 (50.0%)	5 (50.0%)		

	Student	0 (0.0%)	4 (100.0%)		
Pain Intensity		5.3 (1.6)	4.5 (1.8)	**0.048**	**0.48**
Days/week with pain		6.2 (1.3)	5.7 (1.9)	0.342	0.28
Pain Duration (years)		13.0 (10.3)	11.9 (8.5)	0.618	0.12
Seeking Active Tx₸	No	17 (47.2%)	19 (52.8%)	0.253	0.14 ^{V}
	Yes	10 (33.3%)	20 (66.7%)		
TSK		43.4 (7.4)	38.4 (6.7)	**0.002**	**0.73**
PASS		42.0 (15.8)	30.6 (14.4)	**0.002**	**0.76**
SIP-CP		0.3 (0.2)	0.2 (0.2)	**0.039**	**0.50**
ODI		37.6 (12.7)	26.8 (14.5)	**0.002**	**0.78**
TUG		10.9 (1.5)	10.4 (2.2)	0.382	0.23
RF		13.6 (4.9)	11 (2.5)	**0.004**	**0.74**
LR		22.3 (7.5)	26.2 (6.2)	**0.027**	**-0.58**

Note. Continuous variables are reported as *M(SD)* and were tested using an independent sample t-test, two-sided with 72 *df*. Categorical variables reportedas *n* (% of level total) and were tested by χ^2 test, cell counts were < 5 then they were tested by a fisher exact test. Effect sizes for continuous variables used Cohen's *d*, and for categorical Crammer's *V* (indicated by ^{V}). PASS = Pain Anxiety Symptom Scale, TSK = Tampa Scale of Kinesiophobia, SIP-CP = Sickness Impact Profile-Chronic Pain: Psychosocial Domain, ODI = Oswestry Disability Index, TUG = Timed Up And Go, RF = Repeated Flexion, and LR = Loaded Reach. * indicates $p < .05$. ** indicates $p < .01$. *** indicates $p \leq .0001$. ₸ indicates a variable where there were incomplete responses ($n = 64$)

Table 2 Means, standard deviations, and correlations

Variable	*M*	*SD*	*d*	Correlations 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. TSK	38.36	6.66	--																
2. PASS	30.60	14.40	--	**.39****															
3. SIP-CP: Psychosocial	0.21	0.18	--	.27	**.46****														
4. ODI	26.76	14.51	--	**.39****	**.38***	.25													
5. TUG	10.42	2.24	--	.29	.18	.11	**.33***												
6. RF	10.98	2.50	--	.28	.17	-.04	**.38***	**.46****											
7. LR	26.16	6.17	--	-.22	-.08	.11	-.17	-.18	-.27										
8. *E*: PA = Danger	0.04	0.25	0.16	**.45****	**.33***	.08	**.35***	.28	**.41****	-.28									
9. *E*: PA = Safe	0.03	0.22	0.14	**.48****	**.40****	.12	**.32***	**.32***	**.37***	-.25	**.82****								
10. *E*: SA = Danger	**0.29****	0.23	1.26	.02	-.08	-.16	-.14	-.15	-.10	.16	-.05	-.06							
11. *E*: SA = Safe	**0.31****	0.18	1.72	-.02	-.17	-.21	-.12	-.20	-.11	.16	-.07	-.10	**.74****						
12. *E:* Overall	**0.17****	0.15	1.13	**.40****	.26	.04	.25	.14	.25	-.17	**.59****	**.57****	**.40****	**.34***					
13. *D*: PA = Danger	**0.15***	0.39	0.38	-.10	-.18	-.09	-.14	-.06	.00	-.06	.10	.07	.18	.29	.21				
14. *D*: PA = Safe	0.08	0.37	0.22	.04	.06	.11	.07	-.01	-.11	-.15	-.05	-.04	-.27	-.25	-.16	-.21			
15. *D*: SA = Danger	**-0.19****	0.38	-0.50	-.04	.04	.12	-.12	.01	-.10	-.04	-.01	.04	-.18	-.18	-.10	-.06	.20		
16. *D*: SA = Safe	**0.34****	0.36	0.94	.05	-.02	-.12	.01	.03	.05	-.04	.15	.19	.21	.16	**.31***	.05	-.10	-.05	
17. *D*: Overall	**0.10****	0.18	0.56	-.15	-.07	.01	-.15	-.06	-.11	-.13	.04	.06	-.04	.03	.07	.25	.22	**.42****	**.31***

Note. M, *SD* and *d* are used to represent mean, standard deviation and Cohen's *d*, respectively. Significance is reported for means where zero means no bias (either explicit or implicit). * indicates $p < .05$. ** indicates $p < .001$. TSK = Tampa Scale of Kinesiophobia, PASS = Pain Anxiety Symptoms Scale, SIP-CP = Sickness Impact Profile-Chronic Pain, ODI = Oswestry Disability Index, TUG = Timed Up & Go, RF = Repeated Flexion, LR = Loaded Reach, *D:* = *D*-score and *E:* = E-score. Positive scores for *E*-scores and *D*-scores indicate responding consistent with pain-related fear while negative scores indicate inconsistent responding.

Table 3 Regression results using SIP-CP: Psychosocial as the criterion

Predictor	*b*	*b* 95% CI [LL, UL]	*beta*	*beta* 95% CI [LL, UL]	sr^2	sr^2 95% CI [LL, UL]	*r*	Fit	Difference
(Intercept)	0.24*	[0.01, 0.47]							
Age	0.00	[-0.00, 0.00]	0.00	[-0.32, 0.33]	.00	[-.00, .00]	-.01		
Gender	0.01	[-0.10, 0.13]	0.03	[-0.28, 0.35]	.00	[-.02, .02]	.04		
Education	-0.01	[-0.05, 0.03]	-0.06	[-0.39, 0.26]	.00	[-.03, .04]	-.06		
								R^2 = .005 95% CI[.00,.00]	
(Intercept)	0.01	[-0.18, 0.20]							
Age	-0.00	[-0.00, 0.00]	-0.08	[-0.33, 0.17]	.01	[-.03, .04]	-.01		
Gender	0.02	[-0.07, 0.11]	0.06	[-0.18, 0.30]	.00	[-.02, .03]	.04		
Education	-0.00	[-0.03, 0.03]	-0.02	[-0.27, 0.23]	.00	[-.01, .01]	-.06		
PASS	0.16**	[0.10, 0.22]	0.66	[0.42, 0.90]	.43	[.21, .65]	.65**		
								R^2 = .433** 95% CI[.15,.56]	ΔR^2 = .427** 95% CI[.21, .65]
(Intercept)	0.01	[-0.20, 0.22]							
Age	-0.00	[-0.00, 0.00]	-0.08	[-0.34, 0.17]	.01	[-.03, .04]	-.01		
Gender	0.02	[-0.07, 0.11]	0.06	[-0.18, 0.31]	.00	[-.02, .03]	.04		
Education	-0.00	[-0.03, 0.03]	-0.02	[-0.28, 0.23]	.00	[-.01, .01]	-.06		
PASS	0.16**	[0.10, 0.23]	0.66	[0.41, 0.91]	.42	[.20, .64]	.65**		
Overall *D*-Score	-0.01	[-0.25, 0.24]	-0.01	[-0.25, 0.24]	.00	[-.00, .00]	-.08		
								R^2 = .433** 95% CI[.13,.55]	ΔR^2 = .000 95% CI[-.00, .00]

Note. A significant *b*-weight indicates the beta-weight and semi-partial correlation are also significant. *b* represents unstandardized regression weights. *beta* indicates the standardized regression weights. sr^2 represents the semi-partial correlation squared. *r* represents the zero-order correlation. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively. TSK = Tampa Scale of Kinesiophobia, PASS = Pain Anxiety Symptom Scale, SIP-CP = Sickness Illness Profile-Chronic Pain, ODI = Oswestry Disability Index, TUG = Timed Up and Go, RF = Repeated Flexion Test, and LR = Loaded Reach Test.
* indicates $p < .05$. ** indicates $p < .01$.

Table 4 Regression results using SIP-Psychosocial as the criterion

Predictor	*b*	*b* 95% CI [LL, UL]	*beta*	*beta* 95% CI [LL, UL]	sr^2	sr^2 95% CI [LL, UL]	*r*	Fit	Difference
(Intercept)	0.24*	[0.01, 0.47]							
Age	0.00	[-0.00, 0.00]	0.00	[-0.32, 0.33]	.00	[-.00, .00]	-.01		
Gender	0.01	[-0.10, 0.13]	0.03	[-0.28, 0.35]	.00	[-.02, .02]	.04		
Education	-0.01	[-0.05, 0.03]	-0.06	[-0.39, 0.26]	.00	[-.03, .04]	-.06		
								R^2 = .005 95% CI[.00,.00]	
(Intercept)	0.01	[-0.18, 0.20]							
Age	-0.00	[-0.00, 0.00]	-0.08	[-0.33, 0.17]	.01	[-.03, .04]	-.01		
Gender	0.02	[-0.07, 0.11]	0.06	[-0.18, 0.30]	.00	[-.02, .03]	.04		
Education	-0.00	[-0.03, 0.03]	-0.02	[-0.27, 0.23]	.00	[-.01, .01]	-.06		
PASS	0.16**	[0.10, 0.22]	0.66	[0.42, 0.90]	.43	[.21, .65]	.65**		
								R^2 = .433** 95% CI[.15,.56]	ΔR^2 = .427** 95% CI[.21, .65]
(Intercept)	-0.01	[-0.21, 0.20]							
Age	-0.00	[-0.00, 0.00]	-0.08	[-0.34, 0.17]	.01	[-.03, .04]	-.01		
Gender	0.03	[-0.06, 0.12]	0.08	[-0.18, 0.34]	.01	[-.03, .04]	.04		
Education	-0.00	[-0.03, 0.03]	-0.02	[-0.27, 0.24]	.00	[-.01, .01]	-.06		
PASS	0.17**	[0.10, 0.23]	0.68	[0.42, 0.93]	.42	[.20, .64]	.65**		
PA = Danger	0.03	[-0.09, 0.15]	0.06	[-0.20, 0.33]	.00	[-.02, .03]	-.12		
								R^2 = .436** 95% CI[.13,.55]	ΔR^2 = .003 95% CI[-.02, .03]

Note. A significant *b*-weight indicates the beta-weight and semi-partial correlation are also significant. *b* represents unstandardized regression weights. *beta* indicates the standardized regression weights. sr^2 represents the semi-partial correlation squared. *r* represents the zero-order correlation. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively. TSK = Tampa Scale of Kinesiophobia, PASS = Pain Anxiety Symptom Scale, SIP-CP = Sickness Illness Profile-Chronic Pain, ODI = Oswestry Disability Index, TUG = Timed Up and Go, RF = Repeated Flexion Test, and LR = Loaded Reach Test.
* indicates $p < .05$. ** indicates $p < .01$.

Table 5 Regression results using SIP-Psychosocial as the criterion

Predictor	*b*	*b* 95% CI [LL, UL]	*beta*	*beta* 95% CI [LL, UL]	sr^2	sr^2 95% CI [LL, UL]	*r*	Fit	Difference
(Intercept)	0.24*	[0.01, 0.47]							
Age	0.00	[-0.00, 0.00]	0.00	[-0.32, 0.33]	.00	[-.00, .00]	-.01		
Gender	0.01	[-0.10, 0.13]	0.03	[-0.28, 0.35]	.00	[-.02, .02]	.04		
Education	-0.01	[-0.05, 0.03]	-0.06	[-0.39, 0.26]	.00	[-.03, .04]	-.06		
								R^2 = .005 95% CI[.00,.00]	
(Intercept)	-0.01	[-0.39, 0.37]							
Age	0.00	[-0.00, 0.00]	0.00	[-0.32, 0.32]	.00	[-.00, .00]	-.01		
Gender	0.01	[-0.10, 0.12]	0.02	[-0.29, 0.33]	.00	[-.01, .01]	.04		
Education	-0.01	[-0.05, 0.03]	-0.08	[-0.40, 0.24]	.01	[-.04, .05]	-.06		
TSK	0.01	[-0.00, 0.02]	0.25	[-0.06, 0.56]	.06	[-.07, .20]	.25		
								R^2 = .069 95% CI[.00,.17]	ΔR^2 = .063 95% CI[-.07, .20]
(Intercept)	0.01	[-0.39, 0.40]							
Age	-0.00	[-0.00, 0.00]	-0.00	[-0.32, 0.32]	.00	[-.00, .00]	-.01		
Gender	0.01	[-0.11, 0.12]	0.02	[-0.29, 0.34]	.00	[-.01, .01]	.04		
Education	-0.01	[-0.05, 0.03]	-0.08	[-0.41, 0.24]	.01	[-.04, .05]	-.06		
TSK	0.01	[-0.00, 0.02]	0.25	[-0.07, 0.56]	.06	[-.07, .19]	.25		
Overall *D*-Score	-0.06	[-0.37, 0.26]	-0.06	[-0.38, 0.26]	.00	[-.03, .03]	-.08		
								R^2 = .072 95% CI[.00,.15]	ΔR^2 = .003 95% CI[-.03, .03]

Note. A significant *b*-weight indicates the beta-weight and semi-partial correlation are also significant. *b* represents unstandardized regression weights. *beta* indicates the standardized regression weights. sr^2 represents the semi-partial correlation squared. *r* represents the zero-order correlation. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively. TSK = Tampa Scale of Kinesiophobia, PASS = Pain Anxiety Symptom Scale, SIP-CP = Sickness Illness Profile-Chronic Pain, ODI = Oswestry Disability Index, TUG = Timed Up and Go, RF = Repeated Flexion Test, and LR = Loaded Reach Test.
* indicates $p < .05$. ** indicates $p < .01$.

Table 6 Regression results using SIP-Psychosocial as the criterion

Predictor	*b*	*b* 95% CI [LL, UL]	*beta*	*beta* 95% CI [LL, UL]	sr^2	sr^2 95% CI [LL, UL]	*r*	Fit	Difference
(Intercept)	0.24*	[0.01, 0.47]							
Age	0.00	[-0.00, 0.00]	0.00	[-0.32, 0.33]	.00	[-.00, .00]	-.01		
Gender	0.01	[-0.10, 0.13]	0.03	[-0.28, 0.35]	.00	[-.02, .02]	.04		
Education	-0.01	[-0.05, 0.03]	-0.06	[-0.39, 0.26]	.00	[-.03, .04]	-.06		
								R^2 = .005 95% CI[.00,.00]	
(Intercept)	-0.01	[-0.39, 0.37]							
Age	0.00	[-0.00, 0.00]	0.00	[-0.32, 0.32]	.00	[-.00, .00]	-.01		
Gender	0.01	[-0.10, 0.12]	0.02	[-0.29, 0.33]	.00	[-.01, .01]	.04		
Education	-0.01	[-0.05, 0.03]	-0.08	[-0.40, 0.24]	.01	[-.04, .05]	-.06		
TSK	0.01	[-0.00, 0.02]	0.25	[-0.06, 0.56]	.06	[-.07, .20]	.25		
								R^2 = .069 95% CI[.00,.17]	ΔR^2 = .063 95% CI[-.07, .20]
(Intercept)	0.01	[-0.38, 0.41]							
Age	0.00	[-0.00, 0.00]	0.00	[-0.32, 0.33]	.00	[-.00, .00]	-.01		
Gender	0.00	[-0.12, 0.12]	0.00	[-0.33, 0.33]	.00	[-.00, .00]	.04		
Education	-0.01	[-0.05, 0.03]	-0.08	[-0.41, 0.24]	.01	[-.04, .05]	-.06		
TSK	0.01	[-0.00, 0.01]	0.24	[-0.08, 0.56]	.06	[-.07, .18]	.25		
PA = Danger	-0.04	[-0.19, 0.11]	-0.09	[-0.42, 0.24]	.01	[-.04, .05]	-.12		
								R^2 = .075 95% CI[.00,.16]	ΔR^2 = .007 95% CI[-.04, .05]

Note. A significant *b*-weight indicates the beta-weight and semi-partial correlation are also significant. *b* represents unstandardized regression weights. *beta* indicates the standardized regression weights. sr^2 represents the semi-partial correlation squared. *r* represents the zero-order correlation. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively. TSK = Tampa Scale of Kinesiophobia, PASS = Pain Anxiety Symptom Scale, SIP-CP = Sickness Illness Profile-Chronic Pain, ODI = Oswestry Disability Index, TUG = Timed Up and Go, RF = Repeated Flexion Test, and LR = Loaded Reach Test.
* indicates $p < .05$. ** indicates $p < .01$.

Table 7 Regression results using ODI as the criterion

Predictor	b	b 95% CI [LL, UL]	$beta$	$beta$ 95% CI [LL, UL]	sr^2	sr^2 95% CI [LL, UL]	r	Fit	Difference
(Intercept)	17.54	[-0.57, 35.66]							
Age	0.19	[-0.16, 0.53]	0.17	[-0.15, 0.49]	.03	[-.07, .12]	.19		
Gender	-1.41	[-10.60, 7.77]	-0.05	[-0.36, 0.26]	.00	[-.02, .03]	-.06		
Education	0.51	[-2.69, 3.70]	0.05	[-0.27, 0.37]	.00	[-.03, .03]	.10		
								R^2 = .040 95% CI[.00,.14]	
(Intercept)	2.39	[-14.67, 19.46]							
Age	0.11	[-0.18, 0.41]	0.10	[-0.17, 0.38]	.01	[-.04, .06]	.19		
Gender	-0.70	[-8.50, 7.11]	-0.02	[-0.29, 0.24]	.00	[-.01, .01]	-.06		
Education	0.82	[-1.89, 3.54]	0.08	[-0.19, 0.35]	.01	[-.03, .04]	.10		
PASS	10.87**	[5.55, 16.19]	0.54	[0.28, 0.81]	.29	[.07, .51]	.55**		
								R^2 = .327** 95% CI[.05,.47]	ΔR^2 = .287** 95% CI[.07, .51]
(Intercept)	3.21	[-14.88, 21.29]							
Age	0.11	[-0.19, 0.41]	0.10	[-0.18, 0.38]	.01	[-.04, .06]	.19		
Gender	-0.78	[-8.70, 7.14]	-0.03	[-0.29, 0.24]	.00	[-.01, .01]	-.06		
Education	0.77	[-2.01, 3.54]	0.08	[-0.20, 0.35]	.01	[-.03, .04]	.10		
PASS	10.76**	[5.33, 16.19]	0.54	[0.27, 0.81]	.28	[.06, .49]	.55**		
Overall *D*-Score	-3.30	[-24.92, 18.32]	-0.04	[-0.31, 0.23]	.00	[-.02, .02]	-.12		
								R^2 = .328** 95% CI[.04,.46]	ΔR^2 = .002 95% CI[-.02, .02]

Note. A significant *b*-weight indicates the beta-weight and semi-partial correlation are also significant. *b* represents unstandardized regression weights. *beta* indicates the standardized regression weights. sr^2 represents the semi-partial correlation squared. *r* represents the zero-order correlation. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively. TSK = Tampa Scale of Kinesiophobia, PASS = Pain Anxiety Symptom Scale, SIP-CP = Sickness Illness Profile-Chronic Pain, ODI = Oswestry Disability Index, TUG = Timed Up and Go, RF = Repeated Flexion Test, and LR = Loaded Reach Test.
* indicates $p < .05$. ** indicates $p < .01$.

Table 8 Regression results using ODI as the criterion

Predictor	*b*	*b* 95% CI [LL, UL]	*beta*	*beta* 95% CI [LL, UL]	sr^2	sr^2 95% CI [LL, UL]	*r*	Fit	Difference
(Intercept)	17.54	[-0.57, 35.66]							
Age	0.19	[-0.16, 0.53]	0.17	[-0.15, 0.49]	.03	[-.07, .12]	.19		
Gender	-1.41	[-10.60, 7.77]	-0.05	[-0.36, 0.26]	.00	[-.02, .03]	-.06		
Education	0.51	[-2.69, 3.70]	0.05	[-0.27, 0.37]	.00	[-.03, .03]	.10		
								R^2 = .040 95% CI[.00,.14]	
(Intercept)	2.39	[-14.67, 19.46]							
Age	0.11	[-0.18, 0.41]	0.10	[-0.17, 0.38]	.01	[-.04, .06]	.19		
Gender	-0.70	[-8.50, 7.11]	-0.02	[-0.29, 0.24]	.00	[-.01, .01]	-.06		
Education	0.82	[-1.89, 3.54]	0.08	[-0.19, 0.35]	.01	[-.03, .04]	.10		
PASS	10.87**	[5.55, 16.19]	0.54	[0.28, 0.81]	.29	[.07, .51]	.55**		
								R^2 = .327** 95% CI[.05,.47]	ΔR^2 = .287** 95% CI[.07, .51]
(Intercept)	5.11	[-12.79, 23.01]							
Age	0.12	[-0.18, 0.42]	0.11	[-0.16, 0.38]	.01	[-.04, .06]	.19		
Gender	-1.96	[-10.15, 6.24]	-0.07	[-0.34, 0.21]	.00	[-.03, .03]	-.06		
Education	0.68	[-2.06, 3.41]	0.07	[-0.21, 0.34]	.00	[-.03, .03]	.10		
PASS	10.11**	[4.58, 15.64]	0.50	[0.23, 0.78]	.23	[.03, .43]	.55**		
PA = Danger	-5.41	[-16.13, 5.31]	-0.14	[-0.43, 0.14]	.02	[-.04, .08]	-.25		
								R^2 = .344** 95% CI[.05,.47]	ΔR^2 = .018 95% CI[-.04, .08]

Note. A significant *b*-weight indicates the beta-weight and semi-partial correlation are also significant. *b* represents unstandardized regression weights. *beta* indicates the standardized regression weights. sr^2 represents the semi-partial correlation squared. *r* represents the zero-order correlation. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively. TSK = Tampa Scale of Kinesiophobia, PASS = Pain Anxiety Symptom Scale, SIP-CP = Sickness Illness Profile-Chronic Pain, ODI = Oswestry Disability Index, TUG = Timed Up and Go, RF = Repeated Flexion Test, and LR = Loaded Reach Test.
* indicates $p < .05$. ** indicates $p < .01$.

Table 9 Regression results using ODI as the criterion

Predictor	*b*	*b* 95% CI [LL, UL]	*beta*	*beta* 95% CI [LL, UL]	sr^2	sr^2 95% CI [LL, UL]	*r*	Fit	Difference
(Intercept)	17.54	[-0.57, 35.66]							
Age	0.19	[-0.16, 0.53]	0.17	[-0.15, 0.49]	.03	[-.07, .12]	.19		
Gender	-1.41	[-10.60, 7.77]	-0.05	[-0.36, 0.26]	.00	[-.02, .03]	-.06		
Education	0.51	[-2.69, 3.70]	0.05	[-0.27, 0.37]	.00	[-.03, .03]	.10		
								R^2 = .040 95% CI[.00,.14]	
(Intercept)	-20.68	[-47.95, 6.59]							
Age	0.19	[-0.12, 0.49]	0.17	[-0.11, 0.45]	.03	[-.05, .11]	.19		
Gender	-1.89	[-10.03, 6.26]	-0.06	[-0.34, 0.21]	.00	[-.03, .04]	-.06		
Education	0.21	[-2.62, 3.05]	0.02	[-0.26, 0.31]	.00	[-.01, .01]	.10		
TSK	1.04**	[0.44, 1.63]	0.48	[0.20, 0.75]	.23	[.01, .44]	.48**		
								R^2 = .266* 95% CI[.01,.41]	ΔR^2 = .225** 95% CI[.01, .44]
(Intercept)	-19.41	[-48.00, 9.18]							
Age	0.18	[-0.13, 0.49]	0.17	[-0.12, 0.45]	.03	[-.05, .11]	.19		
Gender	-1.97	[-10.23, 6.29]	-0.07	[-0.35, 0.21]	.00	[-.03, .04]	-.06		
Education	0.16	[-2.74, 3.05]	0.02	[-0.27, 0.31]	.00	[-.01, .01]	.10		
TSK	1.02**	[0.41, 1.63]	0.47	[0.19, 0.75]	.22	[.01, .42]	.48**		
Overall *D*-Score	-3.84	[-26.43, 18.74]	-0.05	[-0.33, 0.23]	.00	[-.02, .03]	-.12		
								R^2 = .268* 95% CI[.00,.40]	ΔR^2 = .002 95% CI[-.02, .03]

Note. A significant *b*-weight indicates the beta-weight and semi-partial correlation are also significant. *b* represents unstandardized regression weights. *beta* indicates the standardized regression weights. sr^2 represents the semi-partial correlation squared. *r* represents the zero-order correlation. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively. TSK = Tampa Scale of Kinesiophobia, PASS = Pain Anxiety Symptom Scale, SIP-CP = Sickness Illness Profile-Chronic Pain, ODI = Oswestry Disability Index, TUG = Timed Up and Go, RF = Repeated Flexion Test, and LR = Loaded Reach Test.

* indicates $p < .05$. ** indicates $p < .01$.

Table 10 Regression results using ODI as the criterion

Predictor	*b*	*b* 95% CI [LL, UL]	*beta*	*beta* 95% CI [LL, UL]	sr^2	sr^2 95% CI [LL, UL]	*r*	Fit	Difference
(Intercept)	17.54	[-0.57, 35.66]							
Age	0.19	[-0.16, 0.53]	0.17	[-0.15, 0.49]	.03	[-.07, .12]	.19		
Gender	-1.41	[-10.60, 7.77]	-0.05	[-0.36, 0.26]	.00	[-.02, .03]	-.06		
Education	0.51	[-2.69, 3.70]	0.05	[-0.27, 0.37]	.00	[-.03, .03]	.10		
								R^2 = .040 95% CI[.00,.14]	
(Intercept)	-20.68	[-47.95, 6.59]							
Age	0.19	[-0.12, 0.49]	0.17	[-0.11, 0.45]	.03	[-.05, .11]	.19		
Gender	-1.89	[-10.03, 6.26]	-0.06	[-0.34, 0.21]	.00	[-.03, .04]	-.06		
Education	0.21	[-2.62, 3.05]	0.02	[-0.26, 0.31]	.00	[-.01, .01]	.10		
TSK	1.04**	[0.44, 1.63]	0.48	[0.20, 0.75]	.23	[.01, .44]	.48**		
								R^2 = .266* 95% CI[.01,.41]	ΔR^2 = .225** 95% CI[.01, .44]
(Intercept)	-15.63	[-43.40, 12.15]							
Age	0.19	[-0.11, 0.49]	0.17	[-0.10, 0.45]	.03	[-.05, .11]	.19		
Gender	-3.62	[-11.99, 4.76]	-0.12	[-0.41, 0.16]	.01	[-.04, .07]	-.06		
Education	0.05	[-2.76, 2.86]	0.01	[-0.28, 0.29]	.00	[-.00, .00]	.10		
TSK	0.96**	[0.37, 1.56]	0.44	[0.17, 0.72]	.19	[-.00, .39]	.48**		
PA = Danger	-7.87	[-18.64, 2.90]	-0.21	[-0.50, 0.08]	.04	[-.06, .13]	-.25		
								R^2 = .305* 95% CI[.02,.43]	ΔR^2 = .039 95% CI[-.06, .13]

Note. A significant *b*-weight indicates the beta-weight and semi-partial correlation are also significant. *b* represents unstandardized regression weights. *beta* indicates the standardized regression weights. sr^2 represents the semi-partial correlation squared. *r* represents the zero-order correlation. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively. TSK = Tampa Scale of Kinesiophobia, PASS = Pain Anxiety Symptom Scale, SIP-CP = Sickness Illness Profile-Chronic Pain, ODI = Oswestry Disability Index, TUG = Timed Up and Go, RF = Repeated Flexion Test, and LR = Loaded Reach Test.
* indicates $p < .05$. ** indicates $p < .01$.

Table 11 Regression results using TUG as the criterion

Predictor	*b*	*b* 95% CI [LL, UL]	*beta*	*beta* 95% CI [LL, UL]	sr^2	sr^2 95% CI [LL, UL]	*r*	Fit	Difference
(Intercept)	10.57**	[7.74, 13.39]							
Age	0.02	[-0.03, 0.08]	0.13	[-0.19, 0.45]	.02	[-.06, .09]	.08		
Gender	0.30	[-1.13, 1.73]	0.07	[-0.25, 0.38]	.00	[-.03, .04]	.08		
Education	-0.27	[-0.77, 0.23]	-0.18	[-0.50, 0.15]	.03	[-.07, .13]	-.15		
								R^2 = .043 95% CI[.00,.15]	
(Intercept)	9.80**	[6.71, 12.89]							
Age	0.02	[-0.04, 0.07]	0.11	[-0.22, 0.43]	.01	[-.05, .07]	.08		
Gender	0.32	[-1.11, 1.74]	0.07	[-0.24, 0.38]	.00	[-.03, .04]	.08		
Education	-0.26	[-0.76, 0.23]	-0.17	[-0.49, 0.15]	.03	[-.07, .12]	-.15		
PASS	0.59	[-0.40, 1.57]	0.19	[-0.13, 0.50]	.03	[-.07, .14]	.20		
								R^2 = .077 95% CI[.00,.19]	ΔR^2 = .034 95% CI[-.07, .14]
(Intercept)	10.00**	[6.71, 13.29]							
Age	0.02	[-0.04, 0.07]	0.10	[-0.22, 0.43]	.01	[-.05, .07]	.08		
Gender	0.29	[-1.16, 1.74]	0.06	[-0.25, 0.38]	.00	[-.03, .04]	.08		
Education	-0.28	[-0.79, 0.23]	-0.18	[-0.51, 0.15]	.03	[-.07, .13]	-.15		
PASS	0.57	[-0.43, 1.57]	0.18	[-0.14, 0.50]	.03	[-.07, .13]	.20		
Overall *D*-Score	-0.79	[-4.80, 3.21]	-0.06	[-0.39, 0.26]	.00	[-.03, .04]	-.06		
								R^2 = .081 95% CI[.00,.17]	ΔR^2 = .004 95% CI[-.03, .04]

Note. A significant *b*-weight indicates the beta-weight and semi-partial correlation are also significant. *b* represents unstandardized regression weights. *beta* indicates the standardized regression weights. sr^2 represents the semi-partial correlation squared. *r* represents the zero-order correlation. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively. TSK = Tampa Scale of Kinesiophobia, PASS = Pain Anxiety Symptom Scale, SIP-CP = Sickness Illness Profile-Chronic Pain, ODI = Oswestry Disability Index, TUG = Timed Up and Go, RF = Repeated Flexion Test, and LR = Loaded Reach Test.
* indicates $p < .05$. ** indicates $p < .01$.

Table 12 Regression results using TUG as the criterion

Predictor	*b*	*b* 95% CI [LL, UL]	*beta*	*beta* 95% CI [LL, UL]	sr^2	sr^2 95% CI [LL, UL]	*r*	Fit	Difference
(Intercept)	10.57**	[7.74, 13.39]							
Age	0.02	[-0.03, 0.08]	0.13	[-0.19, 0.45]	.02	[-.06, .09]	.08		
Gender	0.30	[-1.13, 1.73]	0.07	[-0.25, 0.38]	.00	[-.03, .04]	.08		
Education	-0.27	[-0.77, 0.23]	-0.18	[-0.50, 0.15]	.03	[-.07, .13]	-.15		
								R^2 = .043 95% CI[.00,.15]	
(Intercept)	9.80**	[6.71, 12.89]							
Age	0.02	[-0.04, 0.07]	0.11	[-0.22, 0.43]	.01	[-.05, .07]	.08		
Gender	0.32	[-1.11, 1.74]	0.07	[-0.24, 0.38]	.00	[-.03, .04]	.08		
Education	-0.26	[-0.76, 0.23]	-0.17	[-0.49, 0.15]	.03	[-.07, .12]	-.15		
PASS	0.59	[-0.40, 1.57]	0.19	[-0.13, 0.50]	.03	[-.07, .14]	.20		
								R^2 = .077 95% CI[.00,.19]	ΔR^2 = .034 95% CI[-.07, .14]
(Intercept)	10.18**	[6.91, 13.45]							
Age	0.02	[-0.04, 0.07]	0.11	[-0.21, 0.44]	.01	[-.05, .07]	.08		
Gender	0.14	[-1.37, 1.65]	0.03	[-0.30, 0.36]	.00	[-.02, .02]	.08		
Education	-0.28	[-0.79, 0.22]	-0.19	[-0.51, 0.14]	.03	[-.07, .13]	-.15		
PASS	0.49	[-0.53, 1.51]	0.16	[-0.17, 0.48]	.02	[-.06, .11]	.20		
PA = Danger	-0.75	[-2.71, 1.21]	-0.13	[-0.47, 0.21]	.01	[-.05, .08]	-.16		
								R^2 = .092 95% CI[.00,.18]	ΔR^2 = .014 95% CI[-.05, .08]

Note. A significant *b*-weight indicates the beta-weight and semi-partial correlation are also significant. *b* represents unstandardized regression weights. *beta* indicates the standardized regression weights. sr^2 represents the semi-partial correlation squared. *r* represents the zero-order correlation. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively. TSK = Tampa Scale of Kinesiophobia, PASS = Pain Anxiety Symptom Scale, SIP-CP = Sickness Illness Profile-Chronic Pain, ODI = Oswestry Disability Index, TUG = Timed Up and Go, RF = Repeated Flexion Test, and LR = Loaded Reach Test.
* indicates $p < .05$. ** indicates $p < .01$.

Table 13 Regression results using TUG as the criterion

Predictor	*b*	*b* 95% CI [LL, UL]	*beta*	*beta* 95% CI [LL, UL]	sr^2	sr^2 95% CI [LL, UL]	*r*	Fit	Difference
(Intercept)	10.57**	[7.74, 13.39]							
Age	0.02	[-0.03, 0.08]	0.13	[-0.19, 0.45]	.02	[-.06, .09]	.08		
Gender	0.30	[-1.13, 1.73]	0.07	[-0.25, 0.38]	.00	[-.03, .04]	.08		
Education	-0.27	[-0.77, 0.23]	-0.18	[-0.50, 0.15]	.03	[-.07, .13]	-.15		
								R^2 = .043 95% CI[.00,.15]	
(Intercept)	4.78*	[0.39, 9.16]							
Age	0.02	[-0.03, 0.07]	0.13	[-0.16, 0.42]	.02	[-.05, .08]	.08		
Gender	0.12	[-1.17, 1.41]	0.03	[-0.26, 0.31]	.00	[-.01, .01]	.08		
Education	-0.36	[-0.81, 0.09]	-0.23	[-0.53, 0.06]	.05	[-.06, .16]	-.15		
TSK	0.16**	[0.06, 0.26]	0.46	[0.18, 0.74]	.21	[-.00, .41]	.44**		
								R^2 = .249* 95% CI[.00,.40]	ΔR^2 = .206** 95% CI[-.00, .41]
(Intercept)	4.98*	[0.43, 9.52]							
Age	0.02	[-0.03, 0.07]	0.13	[-0.16, 0.42]	.02	[-.05, .08]	.08		
Gender	0.09	[-1.22, 1.40]	0.02	[-0.27, 0.31]	.00	[-.01, .01]	.08		
Education	-0.37	[-0.83, 0.09]	-0.24	[-0.54, 0.06]	.05	[-.06, .17]	-.15		
TSK	0.16**	[0.06, 0.26]	0.46	[0.17, 0.74]	.20	[-.00, .41]	.44**		
Overall *D*-Score	-0.72	[-4.33, 2.88]	-0.06	[-0.35, 0.23]	.00	[-.03, .03]	-.06		
								R^2 = .252* 95% CI[.00,.38]	ΔR^2 = .003 95% CI[-.03, .03]

Note. A significant *b*-weight indicates the beta-weight and semi-partial correlation are also significant. *b* represents unstandardized regression weights. *beta* indicates the standardized regression weights. sr^2 represents the semi-partial correlation squared. *r* represents the zero-order correlation. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively. TSK = Tampa Scale of Kinesiophobia, PASS = Pain Anxiety Symptom Scale, SIP-CP = Sickness Illness Profile-Chronic Pain, ODI = Oswestry Disability Index, TUG = Timed Up and Go, RF = Repeated Flexion Test, and LR = Loaded Reach Test.
* indicates $p < .05$. ** indicates $p <$

Table 14 Regression results using TUG as the criterion

Predictor	*b*	*b* 95% CI [LL, UL]	*beta*	*beta* 95% CI [LL, UL]	sr^2	sr^2 95% CI [LL, UL]	*r*	Fit	Difference
(Intercept)	10.57**	[7.74, 13.39]							
Age	0.02	[-0.03, 0.08]	0.13	[-0.19, 0.45]	.02	[-.06, .09]	.08		
Gender	0.30	[-1.13, 1.73]	0.07	[-0.25, 0.38]	.00	[-.03, .04]	.08		
Education	-0.27	[-0.77, 0.23]	-0.18	[-0.50, 0.15]	.03	[-.07, .13]	-.15		
								R^2 = .043 95% CI[.00,.15]	
(Intercept)	4.78*	[0.39, 9.16]							
Age	0.02	[-0.03, 0.07]	0.13	[-0.16, 0.42]	.02	[-.05, .08]	.08		
Gender	0.12	[-1.17, 1.41]	0.03	[-0.26, 0.31]	.00	[-.01, .01]	.08		
Education	-0.36	[-0.81, 0.09]	-0.23	[-0.53, 0.06]	.05	[-.06, .16]	-.15		
TSK	0.16**	[0.06, 0.26]	0.46	[0.18, 0.74]	.21	[-.00, .41]	.44**		
								R^2 = .249* 95% CI[.00,.40]	ΔR^2 = .206** 95% CI[-.00, .41]
(Intercept)	5.17*	[0.64, 9.70]							
Age	0.02	[-0.03, 0.07]	0.14	[-0.16, 0.43]	.02	[-.05, .08]	.08		
Gender	-0.03	[-1.39, 1.32]	-0.01	[-0.31, 0.29]	.00	[-.00, .00]	.08		
Education	-0.37	[-0.83, 0.08]	-0.24	[-0.54, 0.05]	.05	[-.06, .17]	-.15		
TSK	0.16**	[0.06, 0.26]	0.45	[0.16, 0.73]	.19	[-.01, .39]	.44**		
PA = Danger	-0.66	[-2.38, 1.07]	-0.11	[-0.41, 0.19]	.01	[-.04, .07]	-.16		
								R^2 = .261* 95% CI[.00,.39]	ΔR^2 = .012 95% CI[-.04, .07]

Note. A significant *b*-weight indicates the beta-weight and semi-partial correlation are also significant. *b* represents unstandardized regression weights. *beta* indicates the standardized regression weights. sr^2 represents the semi-partial correlation squared. *r* represents the zero-order correlation. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively. TSK = Tampa Scale of Kinesiophobia, PASS = Pain Anxiety Symptom Scale, SIP-CP = Sickness Illness Profile-Chronic Pain, ODI = Oswestry Disability Index, TUG = Timed Up and Go, RF = Repeated Flexion Test, and LR = Loaded Reach Test.
* indicates $p < .05$. ** indicates $p < .01$.

Table 15 Regression results using RF as the criterion

Predictor	*b*	*b* 95% CI [LL, UL]	*beta*	*beta* 95% CI [LL, UL]	sr^2	sr^2 95% CI [LL, UL]	*r*	Fit	Difference
(Intercept)	11.07**	[7.93, 14.21]							
Age	0.01	[-0.05, 0.07]	0.06	[-0.26, 0.38]	.00	[-.03, .04]	.07		
Gender	-1.14	[-2.73, 0.45]	-0.23	[-0.54, 0.09]	.05	[-.08, .18]	-.23		
Education	-0.02	[-0.57, 0.53]	-0.01	[-0.33, 0.31]	.00	[-.01, .01]	.03		
								R^2 = .054 95% CI[.00,.17]	
(Intercept)	9.77**	[6.42, 13.13]							
Age	0.00	[-0.05, 0.06]	0.02	[-0.29, 0.34]	.00	[-.01, .01]	.07		
Gender	-1.12	[-2.66, 0.43]	-0.22	[-0.52, 0.08]	.05	[-.07, .17]	-.23		
Education	-0.01	[-0.54, 0.53]	-0.00	[-0.32, 0.31]	.00	[-.00, .00]	.03		
PASS	0.99	[-0.08, 2.06]	0.28	[-0.02, 0.59]	.08	[-.07, .23]	.29		
								R^2 = .133 95% CI[.00,.27]	ΔR^2 = .078 95% CI[-.07, .23]
(Intercept)	10.17**	[6.62, 13.72]							
Age	0.00	[-0.06, 0.06]	0.02	[-0.30, 0.34]	.00	[-.01, .01]	.07		
Gender	-1.17	[-2.74, 0.39]	-0.23	[-0.54, 0.08]	.05	[-.07, .17]	-.23		
Education	-0.04	[-0.59, 0.51]	-0.02	[-0.34, 0.30]	.00	[-.01, .01]	.03		
PASS	0.96	[-0.12, 2.04]	0.27	[-0.03, 0.58]	.07	[-.07, .22]	.29		
Overall *D*-Score	-1.56	[-5.88, 2.76]	-0.11	[-0.42, 0.20]	.01	[-.05, .07]	-.12		
								R^2 = .145 95% CI[.00,.26]	ΔR^2 = .012 95% CI[-.05, .07]

Note. A significant *b*-weight indicates the beta-weight and semi-partial correlation are also significant. *b* represents unstandardized regression weights. *beta* indicates the standardized regression weights. sr^2 represents the semi-partial correlation squared. *r* represents the zero-order correlation. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively. TSK = Tampa Scale of Kinesiophobia, PASS = Pain Anxiety Symptom Scale, SIP-CP = Sickness Illness Profile-Chronic Pain, ODI = Oswestry Disability Index, TUG = Timed Up and Go, RF = Repeated Flexion Test, and LR = Loaded Reach Test.
* indicates $p < .05$. ** indicates $p < .01$.

Table 16 Regression results using RF as the criterion

Predictor	*b*	*b* 95% CI [LL, UL]	*beta*	*beta* 95% CI [LL, UL]	sr^2	sr^2 95% CI [LL, UL]	*r*	Fit	Difference
(Intercept)	11.07**	[7.93, 14.21]							
Age	0.01	[-0.05, 0.07]	0.06	[-0.26, 0.38]	.00	[-.03, .04]	.07		
Gender	-1.14	[-2.73, 0.45]	-0.23	[-0.54, 0.09]	.05	[-.08, .18]	-.23		
Education	-0.02	[-0.57, 0.53]	-0.01	[-0.33, 0.31]	.00	[-.01, .01]	.03		
								R^2 = .054	
								95% CI[.00,.17]	
(Intercept)	9.77**	[6.42, 13.13]							
Age	0.00	[-0.05, 0.06]	0.02	[-0.29, 0.34]	.00	[-.01, .01]	.07		
Gender	-1.12	[-2.66, 0.43]	-0.22	[-0.52, 0.08]	.05	[-.07, .17]	-.23		
Education	-0.01	[-0.54, 0.53]	-0.00	[-0.32, 0.31]	.00	[-.00, .00]	.03		
PASS	0.99	[-0.08, 2.06]	0.28	[-0.02, 0.59]	.08	[-.07, .23]	.29		
								R^2 = .133	ΔR^2 = .078
								95% CI[.00,.27]	95% CI[-.07, .23]
(Intercept)	10.24**	[6.70, 13.77]							
Age	0.01	[-0.05, 0.06]	0.03	[-0.28, 0.35]	.00	[-.02, .02]	.07		
Gender	-1.34	[-2.97, 0.29]	-0.26	[-0.58, 0.06]	.06	[-.07, .19]	-.23		
Education	-0.03	[-0.58, 0.51]	-0.02	[-0.34, 0.30]	.00	[-.01, .01]	.03		
PASS	0.87	[-0.24, 1.98]	0.25	[-0.07, 0.56]	.06	[-.07, .18]	.29		
PA = Danger	-0.92	[-3.04, 1.20]	-0.14	[-0.47, 0.19]	.02	[-.05, .09]	-.12		
								R^2 = .150	ΔR^2 = .017
								95% CI[.00,.27]	95% CI[-.05, .09]

Note. A significant *b*-weight indicates the beta-weight and semi-partial correlation are also significant. *b* represents unstandardized regression weights. *beta* indicates the standardized regression weights. sr^2 represents the semi-partial correlation squared. *r* represents the zero-order correlation. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively. TSK = Tampa Scale of Kinesiophobia, PASS = Pain Anxiety Symptom Scale, SIP-CP = Sickness Illness Profile-Chronic Pain, ODI = Oswestry Disability Index, TUG = Timed Up and Go, RF = Repeated Flexion Test, and LR = Loaded Reach Test.
* indicates $p < .05$. ** indicates $p < .01$.

Table 17 Regression results using RF as the criterion

Predictor	*b*	*b* 95% CI [LL, UL]	*beta*	*beta* 95% CI [LL, UL]	sr^2	sr^2 95% CI [LL, UL]	*r*	Fit	Difference
(Intercept)	11.07**	[7.93, 14.21]							
Age	0.01	[-0.05, 0.07]	0.06	[-0.26, 0.38]	.00	[-.03, .04]	.07		
Gender	-1.14	[-2.73, 0.45]	-0.23	[-0.54, 0.09]	.05	[-.08, .18]	-.23		
Education	-0.02	[-0.57, 0.53]	-0.01	[-0.33, 0.31]	.00	[-.01, .01]	.03		
								R^2 = .054 95% CI[.00,.17]	
(Intercept)	4.34	[-0.47, 9.15]							
Age	0.01	[-0.04, 0.06]	0.06	[-0.22, 0.35]	.00	[-.03, .03]	.07		
Gender	-1.36	[-2.77, 0.06]	-0.27	[-0.55, 0.01]	.07	[-.06, .20]	-.23		
Education	-0.12	[-0.62, 0.37]	-0.07	[-0.36, 0.22]	.00	[-.03, .04]	.03		
TSK	0.19**	[0.08, 0.30]	0.48	[0.20, 0.76]	.22	[.01, .43]	.45**		
								R^2 = .278* 95% CI[.02,.42]	ΔR^2 = .223** 95% CI[.01, .43]
(Intercept)	4.76	[-0.19, 9.71]							
Age	0.01	[-0.04, 0.06]	0.06	[-0.23, 0.34]	.00	[-.02, .03]	.07		
Gender	-1.41	[-2.84, 0.02]	-0.28	[-0.56, 0.00]	.07	[-.06, .21]	-.23		
Education	-0.15	[-0.66, 0.35]	-0.09	[-0.38, 0.20]	.01	[-.03, .05]	.03		
TSK	0.19**	[0.08, 0.30]	0.47	[0.19, 0.75]	.22	[.01, .43]	.45**		
Overall *D*-Score	-1.58	[-5.50, 2.35]	-0.11	[-0.40, 0.17]	.01	[-.04, .07]	-.12		
								R^2 = .290* 95% CI[.01,.42]	ΔR^2 = .012 95% CI[-.04, .07]

Note. A significant *b*-weight indicates the beta-weight and semi-partial correlation are also significant. *b* represents unstandardized regression weights. *beta* indicates the standardized regression weights. sr^2 represents the semi-partial correlation squared. *r* represents the zero-order correlation. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively. TSK = Tampa Scale of Kinesiophobia, PASS = Pain Anxiety Symptom Scale, SIP-CP = Sickness Illness Profile-Chronic Pain, ODI = Oswestry Disability Index, TUG = Timed Up and Go, RF = Repeated Flexion Test, and LR = Loaded Reach Test.
* indicates $p < .05$. ** indicates $p < .01$.

Table 18 Regression results using RF as the criterion

Predictor	*b*	*b* 95% CI [LL, UL]	*beta*	*beta* 95% CI [LL, UL]	sr^2	sr^2 95% CI [LL, UL]	*r*	Fit	Difference
(Intercept)	11.07**	[7.93, 14.21]							
Age	0.01	[-0.05, 0.07]	0.06	[-0.26, 0.38]	.00	[-.03, .04]	.07		
Gender	-1.14	[-2.73, 0.45]	-0.23	[-0.54, 0.09]	.05	[-.08, .18]	-.23		
Education	-0.02	[-0.57, 0.53]	-0.01	[-0.33, 0.31]	.00	[-.01, .01]	.03		
								R^2 = .054 95% CI[.00,.17]	
(Intercept)	4.34	[-0.47, 9.15]							
Age	0.01	[-0.04, 0.06]	0.06	[-0.22, 0.35]	.00	[-.03, .03]	.07		
Gender	-1.36	[-2.77, 0.06]	-0.27	[-0.55, 0.01]	.07	[-.06, .20]	-.23		
Education	-0.12	[-0.62, 0.37]	-0.07	[-0.36, 0.22]	.00	[-.03, .04]	.03		
TSK	0.19**	[0.08, 0.30]	0.48	[0.20, 0.76]	.22	[.01, .43]	.45**		
								R^2 = .278* 95% CI[.02,.42]	ΔR^2 = .223** 95% CI[.01, .43]
(Intercept)	4.90	[-0.03, 9.84]							
Age	0.01	[-0.04, 0.06]	0.07	[-0.22, 0.35]	.00	[-.03, .04]	.07		
Gender	-1.58*	[-3.06, -0.10]	-0.31	[-0.60, -0.02]	.09	[-.05, .23]	-.23		
Education	-0.14	[-0.64, 0.35]	-0.08	[-0.37, 0.20]	.01	[-.03, .05]	.03		
TSK	0.18**	[0.07, 0.29]	0.46	[0.18, 0.74]	.20	[.00, .41]	.45**		
PA = Danger	-0.95	[-2.83, 0.93]	-0.15	[-0.44, 0.14]	.02	[-.05, .09]	-.12		
								R^2 = .297* 95% CI[.01,.43]	ΔR^2 = .020 95% CI[-.05, .09]

Note. A significant *b*-weight indicates the beta-weight and semi-partial correlation are also significant. *b* represents unstandardized regression weights. *beta* indicates the standardized regression weights. sr^2 represents the semi-partial correlation squared. *r* represents the zero-order correlation. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively. TSK = Tampa Scale of Kinesiophobia, PASS = Pain Anxiety Symptom Scale, SIP-CP = Sickness Illness Profile-Chronic Pain, ODI = Oswestry Disability Index, TUG = Timed Up and Go, RF = Repeated Flexion Test, and LR = Loaded Reach Test.
* indicates $p < .05$. ** indicates $p < .01$.

Table 19 Regression results using LR as the criterion

Predictor	*b*	*b* 95% CI [LL, UL]	*beta*	*beta* 95% CI [LL, UL]	sr^2	sr^2 95% CI [LL, UL]	*r*	Fit	Difference
(Intercept)	29.08**	[21.36, 36.80]							
Age	-0.00	[-0.15, 0.14]	-0.00	[-0.32, 0.32]	.00	[-.00, .00]	-.06		
Gender	1.54	[-2.37, 5.45]	0.12	[-0.19, 0.44]	.01	[-.05, .08]	.14		
Education	-0.82	[-2.18, 0.55]	-0.19	[-0.51, 0.13]	.03	[-.07, .14]	-.21		
								R^2 = .058 95% CI[.00,.18]	
(Intercept)	29.83**	[21.24, 38.42]							
Age	0.00	[-0.15, 0.15]	0.00	[-0.32, 0.33]	.00	[-.00, .00]	-.06		
Gender	1.52	[-2.43, 5.48]	0.12	[-0.19, 0.44]	.01	[-.05, .08]	.14		
Education	-0.82	[-2.20, 0.55]	-0.19	[-0.52, 0.13]	.04	[-.07, .14]	-.21		
PASS	-0.57	[-3.31, 2.16]	-0.07	[-0.38, 0.25]	.00	[-.03, .04]	-.07		
								R^2 = .062 95% CI[.00,.16]	ΔR^2 = .004 95% CI[-.03, .04]
(Intercept)	31.59**	[22.63, 40.55]							
Age	-0.00	[-0.15, 0.15]	-0.00	[-0.33, 0.32]	.00	[-.00, .00]	-.06		
Gender	1.28	[-2.67, 5.22]	0.10	[-0.21, 0.42]	.01	[-.05, .07]	.14		
Education	-0.97	[-2.35, 0.42]	-0.23	[-0.56, 0.10]	.05	[-.07, .17]	-.21		
PASS	-0.71	[-3.44, 2.01]	-0.08	[-0.40, 0.23]	.01	[-.04, .05]	-.07		
Overall *D*-Score	-6.95	[-17.86, 3.95]	-0.20	[-0.52, 0.12]	.04	[-.07, .15]	-.17		
								R^2 = .102 95% CI[.00,.20]	ΔR^2 = .039 95% CI[-.07, .15]

Note. A significant *b*-weight indicates the beta-weight and semi-partial correlation are also significant. *b* represents unstandardized regression weights. *beta* indicates the standardized regression weights. sr^2 represents the semi-partial correlation squared. *r* represents the zero-order correlation. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively. TSK = Tampa Scale of Kinesiophobia, PASS = Pain Anxiety Symptom Scale, SIP-CP = Sickness Illness Profile-Chronic Pain, ODI = Oswestry Disability Index, TUG = Timed Up and Go, RF = Repeated Flexion Test, and LR = Loaded Reach Test.
* indicates $p < .05$. ** indicates $p < .01$.

Table 20 Regression results using LR as the criterion

Predictor	*b*	*b* 95% CI [LL, UL]	*beta*	*beta* 95% CI [LL, UL]	sr^2	sr^2 95% CI [LL, UL]	*r*	Fit	Difference
(Intercept)	29.08**	[21.36, 36.80]							
Age	-0.00	[-0.15, 0.14]	-0.00	[-0.32, 0.32]	.00	[-.00, .00]	-.06		
Gender	1.54	[-2.37, 5.45]	0.12	[-0.19, 0.44]	.01	[-.05, .08]	.14		
Education	-0.82	[-2.18, 0.55]	-0.19	[-0.51, 0.13]	.03	[-.07, .14]	-.21		
								R^2 = .058 95% CI[.00,.18]	
(Intercept)	29.83**	[21.24, 38.42]							
Age	0.00	[-0.15, 0.15]	0.00	[-0.32, 0.33]	.00	[-.00, .00]	-.06		
Gender	1.52	[-2.43, 5.48]	0.12	[-0.19, 0.44]	.01	[-.05, .08]	.14		
Education	-0.82	[-2.20, 0.55]	-0.19	[-0.52, 0.13]	.04	[-.07, .14]	-.21		
PASS	-0.57	[-3.31, 2.16]	-0.07	[-0.38, 0.25]	.00	[-.03, .04]	-.07		
								R^2 = .062 95% CI[.00,.16]	ΔR^2 = .004 95% CI[-.03, .04]
(Intercept)	30.54**	[21.43, 39.65]							
Age	0.00	[-0.15, 0.15]	0.01	[-0.32, 0.34]	.00	[-.00, .00]	-.06		
Gender	1.19	[-3.02, 5.39]	0.09	[-0.24, 0.43]	.01	[-.04, .06]	.14		
Education	-0.87	[-2.27, 0.54]	-0.20	[-0.54, 0.13]	.04	[-.07, .15]	-.21		
PASS	-0.75	[-3.61, 2.10]	-0.09	[-0.42, 0.24]	.01	[-.04, .05]	-.07		
PA = Danger	-1.40	[-6.86, 4.06]	-0.09	[-0.43, 0.26]	.01	[-.04, .05]	-.08		
								R^2 = .069 95% CI[.00,.14]	ΔR^2 = .007 95% CI[-.04, .05]

Note. A significant *b*-weight indicates the beta-weight and semi-partial correlation are also significant. *b* represents unstandardized regression weights. *beta* indicates the standardized regression weights. sr^2 represents the semi-partial correlation squared. *r* represents the zero-order correlation. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively. TSK = Tampa Scale of Kinesiophobia, PASS = Pain Anxiety Symptom Scale, SIP-CP = Sickness Illness Profile-Chronic Pain, ODI = Oswestry Disability Index, TUG = Timed Up and Go, RF = Repeated Flexion Test, and LR = Loaded Reach Test.
* indicates $p < .05$. ** indicates $p < .01$.

Table 21 Regression results using LR as the criterion

Predictor	*b*	*b* 95% CI [LL, UL]	*beta*	*beta* 95% CI [LL, UL]	sr^2	sr^2 95% CI [LL, UL]	*r*	Fit	Difference
(Intercept)	29.08**	[21.36, 36.80]							
Age	-0.00	[-0.15, 0.14]	-0.00	[-0.32, 0.32]	.00	[-.00, .00]	-.06		
Gender	1.54	[-2.37, 5.45]	0.12	[-0.19, 0.44]	.01	[-.05, .08]	.14		
Education	-0.82	[-2.18, 0.55]	-0.19	[-0.51, 0.13]	.03	[-.07, .14]	-.21		
								R^2 = .058 95% CI[.00,.18]	
(Intercept)	39.65**	[26.79, 52.50]							
Age	-0.00	[-0.14, 0.14]	-0.01	[-0.32, 0.30]	.00	[-.00, .00]	-.06		
Gender	1.88	[-1.91, 5.66]	0.15	[-0.15, 0.45]	.02	[-.06, .10]	.14		
Education	-0.66	[-1.98, 0.67]	-0.16	[-0.47, 0.16]	.02	[-.06, .10]	-.21		
TSK	-0.30*	[-0.59, -0.00]	-0.30	[-0.61, -0.00]	.09	[-.07, .25]	-.31*		
								R^2 = .149 95% CI[.00,.29]	ΔR^2 = .091* 95% CI[-.07, .25]
(Intercept)	41.60**	[28.59, 54.61]							
Age	-0.01	[-0.15, 0.13]	-0.02	[-0.32, 0.29]	.00	[-.01, .01]	-.06		
Gender	1.63	[-2.12, 5.39]	0.13	[-0.17, 0.43]	.02	[-.05, .08]	.14		
Education	-0.80	[-2.12, 0.52]	-0.19	[-0.50, 0.12]	.03	[-.06, .13]	-.21		
TSK	-0.31*	[-0.60, -0.01]	-0.31	[-0.61, -0.01]	.10	[-.06, .25]	-.31*		
Overall *D*-Score	-7.20	[-17.53, 3.12]	-0.21	[-0.51, 0.09]	.04	[-.07, .15]	-.17		
								R^2 = .191 95% CI[.00,.32]	ΔR^2 = .042 95% CI[-.07, .15]

Note. A significant *b*-weight indicates the beta-weight and semi-partial correlation are also significant. *b* represents unstandardized regression weights. *beta* indicates the standardized regression weights. sr^2 represents the semi-partial correlation squared. *r* represents the zero-order correlation. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively. TSK = Tampa Scale of Kinesiophobia, PASS = Pain Anxiety Symptom Scale, SIP-CP = Sickness Illness Profile-Chronic Pain, ODI = Oswestry Disability Index, TUG = Timed Up and Go, RF = Repeated Flexion Test, and LR = Loaded Reach Test.
* indicates $p < .05$. ** indicates $p < .01$.

Table 22 Regression results using LR as the criterion

Predictor	*b*	*b* 95% CI [LL, UL]	*beta*	*beta* 95% CI [LL, UL]	sr^2	sr^2 95% CI [LL, UL]	*r*	Fit	Difference
(Intercept)	29.08**	[21.36, 36.80]							
Age	-0.00	[-0.15, 0.14]	-0.00	[-0.32, 0.32]	.00	[-.00, .00]	-.06		
Gender	1.54	[-2.37, 5.45]	0.12	[-0.19, 0.44]	.01	[-.05, .08]	.14		
Education	-0.82	[-2.18, 0.55]	-0.19	[-0.51, 0.13]	.03	[-.07, .14]	-.21		
								R^2 = .058 95% CI[.00,.18]	
(Intercept)	39.65**	[26.79, 52.50]							
Age	-0.00	[-0.14, 0.14]	-0.01	[-0.32, 0.30]	.00	[-.00, .00]	-.06		
Gender	1.88	[-1.91, 5.66]	0.15	[-0.15, 0.45]	.02	[-.06, .10]	.14		
Education	-0.66	[-1.98, 0.67]	-0.16	[-0.47, 0.16]	.02	[-.06, .10]	-.21		
TSK	-0.30*	[-0.59, -0.00]	-0.30	[-0.61, -0.00]	.09	[-.07, .25]	-.31*		
								R^2 = .149 95% CI[.00,.29]	ΔR^2 = .091* 95% CI[-.07, .25]
(Intercept)	40.65**	[27.34, 53.95]							
Age	-0.00	[-0.14, 0.14]	-0.01	[-0.32, 0.31]	.00	[-.00, .00]	-.06		
Gender	1.49	[-2.49, 5.47]	0.12	[-0.20, 0.44]	.01	[-.05, .07]	.14		
Education	-0.70	[-2.04, 0.64]	-0.16	[-0.48, 0.15]	.02	[-.06, .11]	-.21		
TSK	-0.31*	[-0.61, -0.01]	-0.32	[-0.62, -0.01]	.10	[-.06, .26]	-.31*		
PA = Danger	-1.68	[-6.74, 3.38]	-0.11	[-0.42, 0.21]	.01	[-.04, .06]	-.08		
								R^2 = .159 95% CI[.00,.28]	ΔR^2 = .010 95% CI[-.04, .06]

Note. A significant *b*-weight indicates the beta-weight and semi-partial correlation are also significant. *b* represents unstandardized regression weights. *beta* indicates the standardized regression weights. sr^2 represents the semi-partial correlation squared. *r* represents the zero-order correlation. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively. TSK = Tampa Scale of Kinesiophobia, PASS = Pain Anxiety Symptom Scale, SIP-CP = Sickness Illness Profile-Chronic Pain, ODI = Oswestry Disability Index, TUG = Timed Up and Go, RF = Repeated Flexion Test, and LR = Loaded Reach Test.
* indicates $p < .05$. ** indicates $p < .01$.

Chapter 5

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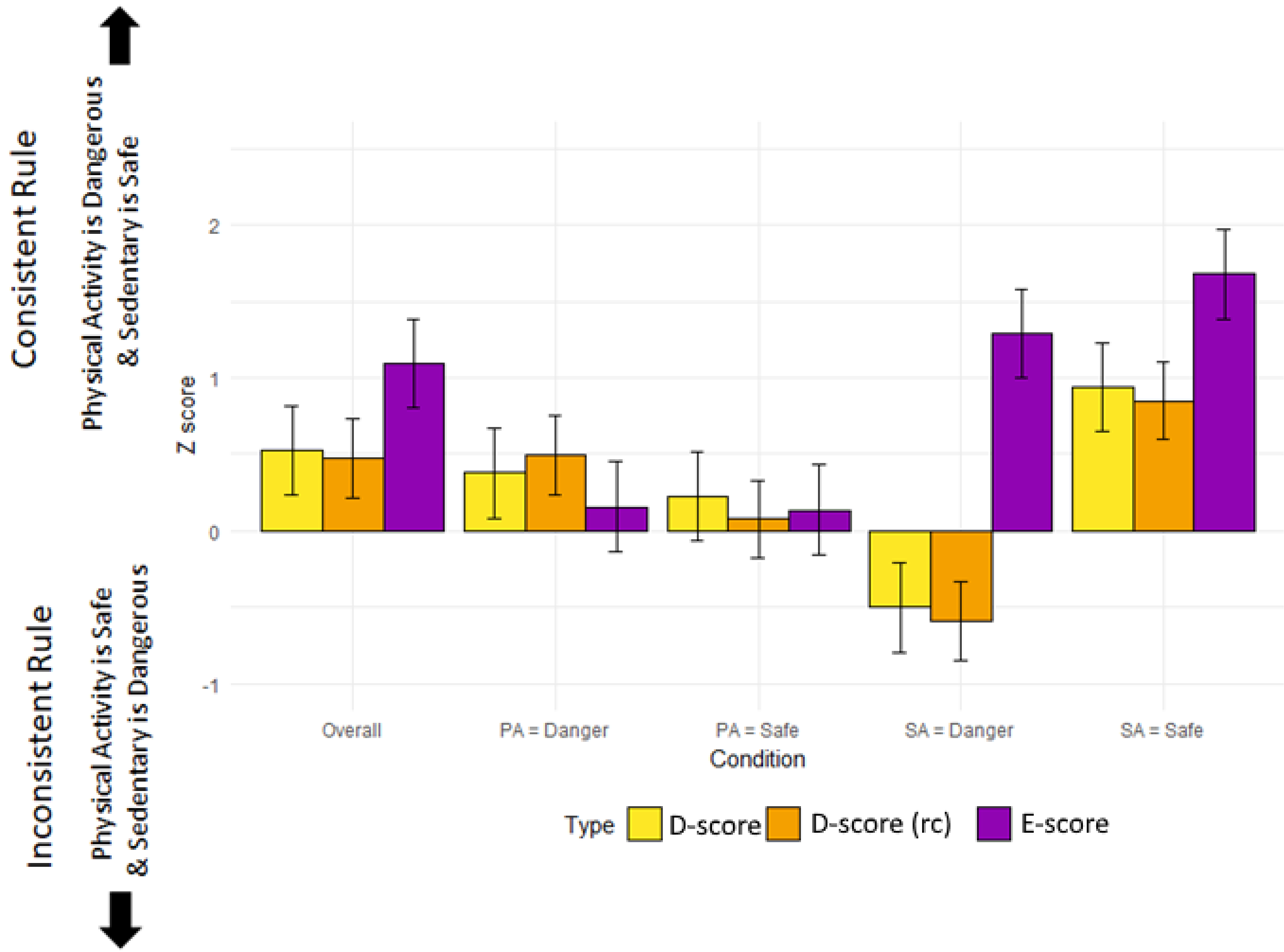
List of Appendicies

Appendix 1: Supplemental Results

Figure A1.1

Standardized pain-related fear IRAP (D-scores for both standard and relaxed mastery criteria) Explicit Survey (E-Scores)



Note. Error bar are a 95% confidence interval. Scores are reported as Cohen's *d* (M/SD). *D*-score (RC) = IRAP using relaxed mastery criteria (latency < 3000 ms and accuracy > 80%). Positive scores indicate responding consistent with "physical activity is dangerous and sedentary activity is safe for my back" while negative scores indicate responding consistent with "physical activity is safe and sedentary activity is dangerous for my back". * indicates $p < .05$. ** indicates $p < .01$. *** indicates $p \leq .001$.

Table A1.1

Means, standard deviations, and correlations using modified mastery criteria

Variable	*M*	*SD*	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. TSK	39.02	7.09																
2. PASS	1.66	0.75	**.38****															
3. SIP-CP: Psychosocial	0.22	0.18	.22	**.41****														
4. ODI	29.77	14.53	.32*	**.40****	**.28***													
5. TUG	10.49	2.17	.26	.23	.11	**.31***												
6. RF	11.27	2.60	.18	.15	-.13	**.28***	.45**											
7. LR	24.95	6.37	-.15	-.09	.15	-.17	-.20	-.27										
8. *E*: PA = Danger	0.05	0.24	**.45****	**.31***	.03	**.32***	.24	**.35***	-.24									
9. *E*: PA = Safe	0.05	0.22	**.42****	**.31***	.03	**.27***	**.29***	**.35***	-.23	.76**								
10. *E*: SA = Danger	**0.32****	0.20	.06	.01	-.13	-.11	.04	.03	.09	.03	.05							
11. *E*: SA = Safe	**0.33****	0.18	.06	.01	-.14	.02	-.04	.03	.03	.03	.05	**.76****						
12. *E:* Overall	**0.19****	0.16	**.36****	.25	-.02	.23	.19	**.29***	-.17	**.60****	**.62****	**.46****	**.45****					
13. *D*: PA = Danger	**0.20****	0.36	.13	.06	.07	-.03	-.05	-.08	-.04	.19	.14	.13	.15	.20				
14. *D*: PA = Safe	0.04	0.41	-.08	.02	-.04	.00	-.07	-.06	-.02	.01	-.00	-.17	-.13	-.08	**-.31***			
15. *D*: SA = Danger	**-0.23****	0.40	-.13	-.00	.09	-.08	.02	-.01	-.03	-.14	-.03	-.09	-.09	-.10	-.09	.15		
16. *D*: SA = Safe	**0.37****	0.43	.15	.06	-.04	.07	.06	.05	-.04	.19	.14	**.33***	**.31***	**.31***	.20	-.25	-.09	
17. *D*: Overall	**0.10****	0.17	.01	.05	.03	-.02	-.01	-.00	-.03	.10	.08	.05	.10	.12	.24	.18	**.41****	**.30***

Note. *M*, *SD* and *d* are used to represent mean, standard deviation and Cohen's *d*, respectively. Significance is reported for means where zero means no bias (either explicit or implicit. * indicates $p < .05$. ** indicates $p < .001$. TSK = Tampa Scale of Kinesiophobia, PASS = Pain Anxiety Symptoms Scale, SIP-CP = Sickness Impact Profile-Chronic Pain, ODI = Oswestry Disability Index, TUG = Timed Up & Go, RF = Repeated Flexion, LR = Loaded Reach, *D:* = *D*-score and *E:* = E-score. Positive scores for *E*-scores and *D*-scores indicate responding consistent with pain-related fear while negative scores indicate inconsistent responding.

Table A1.2

Regression results using SIP-Psychosocial as the criterion

Predictor	*b*	*b* 95% CI [LL, UL]	*beta*	*beta* 95% CI [LL, UL]	sr^2	sr^2 95% CI [LL, UL]	*r*	Fit	Difference
(Intercept)	0.24*	[0.01, 0.47]							
Age	0.00	[-0.00, 0.00]	0.00	[-0.32, 0.33]	.00	[-.00, .00]	-.01		
Gender	0.01	[-0.10, 0.13]	0.03	[-0.28, 0.35]	.00	[-.02, .02]	.04		
Education	-0.01	[-0.05, 0.03]	-0.06	[-0.39, 0.26]	.00	[-.03, .04]	-.06		
								R^2 = .005 95% CI[.00,.00]	
(Intercept)	0.01	[-0.18, 0.20]							
Age	-0.00	[-0.00, 0.00]	-0.08	[-0.33, 0.17]	.01	[-.03, .04]	-.01		
Gender	0.02	[-0.07, 0.11]	0.06	[-0.18, 0.30]	.00	[-.02, .03]	.04		
Education	-0.00	[-0.03, 0.03]	-0.02	[-0.27, 0.23]	.00	[-.01, .01]	-.06		
PASS	0.16**	[0.10, 0.22]	0.66	[0.42, 0.90]	.43	[.21, .65]	.65**		
								R^2 = .433** 95% CI[.15,.56]	ΔR^2 = .427** 95% CI[.21, .65]
(Intercept)	0.01	[-0.19, 0.20]							
Age	-0.00	[-0.00, 0.00]	-0.08	[-0.33, 0.18]	.01	[-.03, .04]	-.01		
Gender	0.02	[-0.07, 0.11]	0.05	[-0.20, 0.30]	.00	[-.02, .02]	.04		
Education	-0.00	[-0.03, 0.03]	-0.03	[-0.28, 0.23]	.00	[-.01, .01]	-.06		
PASS	0.16**	[0.10, 0.22]	0.66	[0.41, 0.90]	.42	[.20, .64]	.65**		
PA = Safe	0.03	[-0.09, 0.15]	0.06	[-0.19, 0.31]	.00	[-.02, .03]	.10		
								R^2 = .436** 95% CI[.13,.55]	ΔR^2 = .003 95% CI[-.02, .03]

Note. A significant *b*-weight indicates the beta-weight and semi-partial correlation are also significant. *b* represents unstandardized regression weights. *beta* indicates the standardized regression weights. sr^2 represents the semi-partial correlation squared. *r* represents the zero-order correlation. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively. TSK = Tampa Scale of Kinesiophobia, PASS = Pain Anxiety Symptom Scale, SIP-CP = Sickness Illness Profile-Chronic Pain, ODI = Oswestry Disability Index, TUG = Timed Up and Go, RF = Repeated Flexion Test, and LR = Loaded Reach Test.
* indicates $p < .05$. ** indicates $p < .01$.

Table A1.3

Regression results using SIP-Psychosocial as the criterion

Predictor	*b*	*b* 95% CI [LL, UL]	*beta*	*beta* 95% CI [LL, UL]	sr^2	sr^2 95% CI [LL, UL]	*r*	Fit	Difference
(Intercept)	0.24*	[0.01, 0.47]							
Age	0.00	[-0.00, 0.00]	0.00	[-0.32, 0.33]	.00	[-.00, .00]	-.01		
Gender	0.01	[-0.10, 0.13]	0.03	[-0.28, 0.35]	.00	[-.02, .02]	.04		
Education	-0.01	[-0.05, 0.03]	-0.06	[-0.39, 0.26]	.00	[-.03, .04]	-.06		
								R^2 = .005 95% CI[.00,.00]	
(Intercept)	0.01	[-0.18, 0.20]							
Age	-0.00	[-0.00, 0.00]	-0.08	[-0.33, 0.17]	.01	[-.03, .04]	-.01		
Gender	0.02	[-0.07, 0.11]	0.06	[-0.18, 0.30]	.00	[-.02, .03]	.04		
Education	-0.00	[-0.03, 0.03]	-0.02	[-0.27, 0.23]	.00	[-.01, .01]	-.06		
PASS	0.16**	[0.10, 0.22]	0.66	[0.42, 0.90]	.43	[.21, .65]	.65**		
								R^2 = .433** 95% CI[.15,.56]	ΔR^2 = .427** 95% CI[.21, .65]
(Intercept)	0.00	[-0.19, 0.19]							
Age	-0.00	[-0.00, 0.00]	-0.01	[-0.27, 0.24]	.00	[-.01, .01]	-.01		
Gender	0.02	[-0.07, 0.11]	0.05	[-0.18, 0.29]	.00	[-.02, .03]	.04		
Education	-0.01	[-0.04, 0.03]	-0.04	[-0.29, 0.21]	.00	[-.02, .02]	-.06		
PASS	0.16**	[0.10, 0.22]	0.66	[0.42, 0.89]	.42	[.20, .64]	.65**		
SA = Danger	0.10	[-0.02, 0.21]	0.20	[-0.05, 0.45]	.04	[-.04, .12]	.19		
								R^2 = .469** 95% CI[.16,.58]	ΔR^2 = .036 95% CI[-.04, .12]

Note. A significant *b*-weight indicates the beta-weight and semi-partial correlation are also significant. *b* represents unstandardized regression weights. *beta* indicates the standardized regression weights. sr^2 represents the semi-partial correlation squared. *r* represents the zero-order correlation. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively. TSK = Tampa Scale of Kinesiophobia, PASS = Pain Anxiety Symptom Scale, SIP-CP = Sickness Illness Profile-Chronic Pain, ODI = Oswestry Disability Index, TUG = Timed Up and Go, RF = Repeated Flexion Test, and LR = Loaded Reach Test.
* indicates $p < .05$. ** indicates $p < .01$.

Table A1.4

Regression results using SIP-Psychosocial as the criterion

Predictor	*b*	*b* 95% CI [LL, UL]	*beta*	*beta* 95% CI [LL, UL]	sr^2	sr^2 95% CI [LL, UL]	*r*	Fit	Difference
(Intercept)	0.24*	[0.01, 0.47]							
Age	0.00	[-0.00, 0.00]	0.00	[-0.32, 0.33]	.00	[-.00, .00]	-.01		
Gender	0.01	[-0.10, 0.13]	0.03	[-0.28, 0.35]	.00	[-.02, .02]	.04		
Education	-0.01	[-0.05, 0.03]	-0.06	[-0.39, 0.26]	.00	[-.03, .04]	-.06		
								R^2 = .005 95% CI[.00,.00]	
(Intercept)	0.01	[-0.18, 0.20]							
Age	-0.00	[-0.00, 0.00]	-0.08	[-0.33, 0.17]	.01	[-.03, .04]	-.01		
Gender	0.02	[-0.07, 0.11]	0.06	[-0.18, 0.30]	.00	[-.02, .03]	.04		
Education	-0.00	[-0.03, 0.03]	-0.02	[-0.27, 0.23]	.00	[-.01, .01]	-.06		
PASS	0.16**	[0.10, 0.22]	0.66	[0.42, 0.90]	.43	[.21, .65]	.65**		
								R^2 = .433** 95% CI[.15,.56]	ΔR^2 = .427** 95% CI[.21, .65]
(Intercept)	0.07	[-0.11, 0.26]							
Age	0.00	[-0.00, 0.00]	0.04	[-0.20, 0.28]	.00	[-.01, .01]	-.01		
Gender	0.01	[-0.07, 0.09]	0.03	[-0.19, 0.25]	.00	[-.01, .01]	.04		
Education	-0.02	[-0.05, 0.01]	-0.13	[-0.37, 0.11]	.01	[-.03, .06]	-.06		
PASS	0.16**	[0.10, 0.21]	0.64	[0.42, 0.86]	.40	[.19, .61]	.65**		
SA = Safe	-0.18**	[-0.30, -0.06]	-0.36	[-0.60, -0.13]	.11	[-.02, .24]	-.34*		
								R^2 = .545** 95% CI[.25,.65]	ΔR^2 = .113** 95% CI[-.02, .24]

Note. A significant *b*-weight indicates the beta-weight and semi-partial correlation are also significant. *b* represents unstandardized regression weights. *beta* indicates the standardized regression weights. sr^2 represents the semi-partial correlation squared. *r* represents the zero-order correlation. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively. TSK = Tampa Scale of Kinesiophobia, PASS = Pain Anxiety Symptom Scale, SIP-CP = Sickness Illness Profile-Chronic Pain, ODI = Oswestry Disability Index, TUG = Timed Up and Go, RF = Repeated Flexion Test, and LR = Loaded Reach Test.
* indicates $p < .05$. ** indicates $p < .01$.

Table A1.5

Regression results using SIP-Psychosocial as the criterion

Predictor	*b*	*b* 95% CI [LL, UL]	*beta*	*beta* 95% CI [LL, UL]	sr^2	sr^2 95% CI [LL, UL]	*r*	Fit	Difference
(Intercept)	0.24*	[0.01, 0.47]							
Age	0.00	[-0.00, 0.00]	0.00	[-0.32, 0.33]	.00	[-.00, .00]	-.01		
Gender	0.01	[-0.10, 0.13]	0.03	[-0.28, 0.35]	.00	[-.02, .02]	.04		
Education	-0.01	[-0.05, 0.03]	-0.06	[-0.39, 0.26]	.00	[-.03, .04]	-.06		
								R^2 = .005 95% CI[.00,.00]	
(Intercept)	-0.01	[-0.39, 0.37]							
Age	0.00	[-0.00, 0.00]	0.00	[-0.32, 0.32]	.00	[-.00, .00]	-.01		
Gender	0.01	[-0.10, 0.12]	0.02	[-0.29, 0.33]	.00	[-.01, .01]	.04		
Education	-0.01	[-0.05, 0.03]	-0.08	[-0.40, 0.24]	.01	[-.04, .05]	-.06		
TSK	0.01	[-0.00, 0.02]	0.25	[-0.06, 0.56]	.06	[-.07, .20]	.25		
								R^2 = .069 95% CI[.00,.17]	ΔR^2 = .063 95% CI[-.07, .20]
(Intercept)	-0.03	[-0.41, 0.36]							
Age	0.00	[-0.00, 0.00]	0.02	[-0.31, 0.34]	.00	[-.01, .01]	-.01		
Gender	-0.00	[-0.12, 0.12]	-0.00	[-0.32, 0.32]	.00	[-.00, .00]	.04		
Education	-0.01	[-0.05, 0.03]	-0.08	[-0.41, 0.24]	.01	[-.04, .05]	-.06		
TSK	0.01	[-0.00, 0.02]	0.26	[-0.05, 0.58]	.07	[-.07, .21]	.25		
PA = Safe	0.06	[-0.09, 0.22]	0.13	[-0.19, 0.45]	.01	[-.05, .08]	.10		
								R^2 = .084 95% CI[.00,.17]	ΔR^2 = .015 95% CI[-.05, .08]

Note. A significant *b*-weight indicates the beta-weight and semi-partial correlation are also significant. *b* represents unstandardized regression weights. *beta* indicates the standardized regression weights. sr^2 represents the semi-partial correlation squared. *r* represents the zero-order correlation. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively. TSK = Tampa Scale of Kinesiophobia, PASS = Pain Anxiety Symptom Scale, SIP-CP = Sickness Illness Profile-Chronic Pain, ODI = Oswestry Disability Index, TUG = Timed Up and Go, RF = Repeated Flexion Test, and LR = Loaded Reach Test.
* indicates $p < .05$. ** indicates $p < .01$.

Table A1.6

Regression results using SIP-Psychosocial as the criterion

Predictor	*b*	*b* 95% CI [LL, UL]	*beta*	*beta* 95% CI [LL, UL]	sr^2	sr^2 95% CI [LL, UL]	*r*	Fit	Difference
(Intercept)	0.24*	[0.01, 0.47]							
Age	0.00	[-0.00, 0.00]	0.00	[-0.32, 0.33]	.00	[-.00, .00]	-.01		
Gender	0.01	[-0.10, 0.13]	0.03	[-0.28, 0.35]	.00	[-.02, .02]	.04		
Education	-0.01	[-0.05, 0.03]	-0.06	[-0.39, 0.26]	.00	[-.03, .04]	-.06		
								R^2 = .005 95% CI[.00,.00]	
(Intercept)	-0.01	[-0.39, 0.37]							
Age	0.00	[-0.00, 0.00]	0.00	[-0.32, 0.32]	.00	[-.00, .00]	-.01		
Gender	0.01	[-0.10, 0.12]	0.02	[-0.29, 0.33]	.00	[-.01, .01]	.04		
Education	-0.01	[-0.05, 0.03]	-0.08	[-0.40, 0.24]	.01	[-.04, .05]	-.06		
TSK	0.01	[-0.00, 0.02]	0.25	[-0.06, 0.56]	.06	[-.07, .20]	.25		
								R^2 = .069 95% CI[.00,.17]	ΔR^2 = .063 95% CI[-.07, .20]
(Intercept)	-0.04	[-0.42, 0.33]							
Age	0.00	[-0.00, 0.01]	0.08	[-0.25, 0.41]	.01	[-.04, .05]	-.01		
Gender	0.01	[-0.11, 0.12]	0.01	[-0.29, 0.32]	.00	[-.01, .01]	.04		
Education	-0.01	[-0.05, 0.03]	-0.10	[-0.42, 0.22]	.01	[-.04, .06]	-.06		
TSK	0.01	[-0.00, 0.02]	0.27	[-0.03, 0.58]	.07	[-.07, .22]	.25		
SA = Danger	0.12	[-0.04, 0.27]	0.24	[-0.08, 0.56]	.05	[-.07, .17]	.19		
								R^2 = .121 95% CI[.00,.23]	ΔR^2 = .052 95% CI[-.07, .17]

Note. A significant *b*-weight indicates the beta-weight and semi-partial correlation are also significant. *b* represents unstandardized regression weights. *beta* indicates the standardized regression weights. sr^2 represents the semi-partial correlation squared. *r* represents the zero-order correlation. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively. TSK = Tampa Scale of Kinesiophobia, PASS = Pain Anxiety Symptom Scale, SIP-CP = Sickness Illness Profile-Chronic Pain, ODI = Oswestry Disability Index, TUG = Timed Up and Go, RF = Repeated Flexion Test, and LR = Loaded Reach Test.
* indicates $p < .05$. ** indicates $p < .01$.

Table A1.7

Regression results using SIP-Psychosocial as the criterion

Predictor	*b*	*b* 95% CI [LL, UL]	*beta*	*beta* 95% CI [LL, UL]	sr^2	sr^2 95% CI [LL, UL]	*r*	Fit	Difference
(Intercept)	0.24*	[0.01, 0.47]							
Age	0.00	[-0.00, 0.00]	0.00	[-0.32, 0.33]	.00	[-.00, .00]	-.01		
Gender	0.01	[-0.10, 0.13]	0.03	[-0.28, 0.35]	.00	[-.02, .02]	.04		
Education	-0.01	[-0.05, 0.03]	-0.06	[-0.39, 0.26]	.00	[-.03, .04]	-.06		
								R^2 = .005 95% CI[.00,.00]	
(Intercept)	-0.01	[-0.39, 0.37]							
Age	0.00	[-0.00, 0.00]	0.00	[-0.32, 0.32]	.00	[-.00, .00]	-.01		
Gender	0.01	[-0.10, 0.12]	0.02	[-0.29, 0.33]	.00	[-.01, .01]	.04		
Education	-0.01	[-0.05, 0.03]	-0.08	[-0.40, 0.24]	.01	[-.04, .05]	-.06		
TSK	0.01	[-0.00, 0.02]	0.25	[-0.06, 0.56]	.06	[-.07, .20]	.25		
								R^2 = .069 95% CI[.00,.17]	ΔR^2 = .063 95% CI[-.07, .20]
(Intercept)	0.02	[-0.33, 0.37]							
Age	0.00	[-0.00, 0.01]	0.14	[-0.17, 0.45]	.02	[-.05, .08]	-.01		
Gender	-0.01	[-0.11, 0.10]	-0.02	[-0.30, 0.27]	.00	[-.01, .01]	.04		
Education	-0.03	[-0.06, 0.01]	-0.21	[-0.52, 0.10]	.04	[-.06, .13]	-.06		
TSK	0.01*	[0.00, 0.02]	0.29	[0.01, 0.58]	.08	[-.06, .23]	.25		
SA = Safe	-0.22**	[-0.37, -0.06]	-0.44	[-0.75, -0.13]	.16	[-.03, .35]	-.34*		
								R^2 = .230 95% CI[.00,.36]	ΔR^2 = .162** 95% CI[-.03, .35]

Note. A significant *b*-weight indicates the beta-weight and semi-partial correlation are also significant. *b* represents unstandardized regression weights. *beta* indicates the standardized regression weights. sr^2 represents the semi-partial correlation squared. *r* represents the zero-order correlation. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively. TSK = Tampa Scale of Kinesiophobia, PASS = Pain Anxiety Symptom Scale, SIP-CP = Sickness Illness Profile-Chronic Pain, ODI = Oswestry Disability Index, TUG = Timed Up and Go, RF = Repeated Flexion Test, and LR = Loaded Reach Test.
* indicates $p < .05$. ** indicates $p < .01$.

Table A1.8

Regression results using ODI as the criterion

Predictor	*b*	*b* 95% CI [LL, UL]	*beta*	*beta* 95% CI [LL, UL]	sr^2	sr^2 95% CI [LL, UL]	*r*	Fit	Difference
(Intercept)	17.54	[-0.57, 35.66]							
Age	0.19	[-0.16, 0.53]	0.17	[-0.15, 0.49]	.03	[-.07, .12]	.19		
Gender	-1.41	[-10.60, 7.77]	-0.05	[-0.36, 0.26]	.00	[-.02, .03]	-.06		
Education	0.51	[-2.69, 3.70]	0.05	[-0.27, 0.37]	.00	[-.03, .03]	.10		
								R^2 = .040 95% CI[.00,.14]	
(Intercept)	2.39	[-14.67, 19.46]							
Age	0.11	[-0.18, 0.41]	0.10	[-0.17, 0.38]	.01	[-.04, .06]	.19		
Gender	-0.70	[-8.50, 7.11]	-0.02	[-0.29, 0.24]	.00	[-.01, .01]	-.06		
Education	0.82	[-1.89, 3.54]	0.08	[-0.19, 0.35]	.01	[-.03, .04]	.10		
PASS	10.87**	[5.55, 16.19]	0.54	[0.28, 0.81]	.29	[.07, .51]	.55**		
								R^2 = .327** 95% CI[.05,.47]	ΔR^2 = .287** 95% CI[.07, .51]
(Intercept)	2.30	[-14.98, 19.58]							
Age	0.12	[-0.18, 0.42]	0.11	[-0.17, 0.39]	.01	[-.04, .06]	.19		
Gender	-1.03	[-9.12, 7.07]	-0.03	[-0.31, 0.24]	.00	[-.01, .02]	-.06		
Education	0.80	[-1.95, 3.55]	0.08	[-0.20, 0.36]	.01	[-.03, .04]	.10		
PASS	10.81**	[5.41, 16.20]	0.54	[0.27, 0.81]	.28	[.06, .50]	.55**		
PA = Safe	1.97	[-8.76, 12.69]	0.05	[-0.22, 0.32]	.00	[-.02, .03]	.05		
								R^2 = .329** 95% CI[.04,.46]	ΔR^2 = .002 95% CI[-.02, .03]

Note. A significant *b*-weight indicates the beta-weight and semi-partial correlation are also significant. *b* represents unstandardized regression weights. *beta* indicates the standardized regression weights. sr^2 represents the semi-partial correlation squared. *r* represents the zero-order correlation. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively. TSK = Tampa Scale of Kinesiophobia, PASS = Pain Anxiety Symptom Scale, SIP-CP = Sickness Illness Profile-Chronic Pain, ODI = Oswestry Disability Index, TUG = Timed Up and Go, RF = Repeated Flexion Test, and LR = Loaded Reach Test.
* indicates $p < .05$. ** indicates $p < .01$.

Table A1.9

Regression results using ODI as the criterion

Predictor	*b*	*b* 95% CI [LL, UL]	*beta*	*beta* 95% CI [LL, UL]	sr^2	sr^2 95% CI [LL, UL]	*r*	Fit	Difference
(Intercept)	17.54	[-0.57, 35.66]							
Age	0.19	[-0.16, 0.53]	0.17	[-0.15, 0.49]	.03	[-.07, .12]	.19		
Gender	-1.41	[-10.60, 7.77]	-0.05	[-0.36, 0.26]	.00	[-.02, .03]	-.06		
Education	0.51	[-2.69, 3.70]	0.05	[-0.27, 0.37]	.00	[-.03, .03]	.10		
								R^2 = .040 95% CI[.00,.14]	
(Intercept)	2.39	[-14.67, 19.46]							
Age	0.11	[-0.18, 0.41]	0.10	[-0.17, 0.38]	.01	[-.04, .06]	.19		
Gender	-0.70	[-8.50, 7.11]	-0.02	[-0.29, 0.24]	.00	[-.01, .01]	-.06		
Education	0.82	[-1.89, 3.54]	0.08	[-0.19, 0.35]	.01	[-.03, .04]	.10		
PASS	10.87**	[5.55, 16.19]	0.54	[0.28, 0.81]	.29	[.07, .51]	.55**		
								R^2 = .327** 95% CI[.05,.47]	ΔR^2 = .287** 95% CI[.07, .51]
(Intercept)	2.52	[-14.78, 19.81]							
Age	0.10	[-0.22, 0.41]	0.09	[-0.20, 0.38]	.01	[-.03, .04]	.19		
Gender	-0.64	[-8.55, 7.26]	-0.02	[-0.29, 0.25]	.00	[-.01, .01]	-.06		
Education	0.86	[-1.90, 3.62]	0.09	[-0.19, 0.36]	.01	[-.03, .05]	.10		
PASS	10.89**	[5.50, 16.28]	0.54	[0.27, 0.81]	.29	[.07, .51]	.55**		
SA = Danger	-1.71	[-12.49, 9.08]	-0.04	[-0.32, 0.24]	.00	[-.02, .02]	-.08		
								R^2 = .329** 95% CI[.04,.46]	ΔR^2 = .002 95% CI[-.02, .02]

Note. A significant *b*-weight indicates the beta-weight and semi-partial correlation are also significant. *b* represents unstandardized regression weights. *beta* indicates the standardized regression weights. sr^2 represents the semi-partial correlation squared. *r* represents the zero-order correlation. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively. TSK = Tampa Scale of Kinesiophobia, PASS = Pain Anxiety Symptom Scale, SIP-CP = Sickness Illness Profile-Chronic Pain, ODI = Oswestry Disability Index, TUG = Timed Up and Go, RF = Repeated Flexion Test, and LR = Loaded Reach Test.
* indicates $p < .05$. ** indicates $p < .01$.

Table A1.10

Regression results using ODI as the criterion

Predictor	*b*	*b* 95% CI [LL, UL]	*beta*	*beta* 95% CI [LL, UL]	sr^2	sr^2 95% CI [LL, UL]	*r*	Fit	Difference
(Intercept)	17.54	[-0.57, 35.66]							
Age	0.19	[-0.16, 0.53]	0.17	[-0.15, 0.49]	.03	[-.07, .12]	.19		
Gender	-1.41	[-10.60, 7.77]	-0.05	[-0.36, 0.26]	.00	[-.02, .03]	-.06		
Education	0.51	[-2.69, 3.70]	0.05	[-0.27, 0.37]	.00	[-.03, .03]	.10		
								R^2 = .040 95% CI[.00,.14]	
(Intercept)	2.39	[-14.67, 19.46]							
Age	0.11	[-0.18, 0.41]	0.10	[-0.17, 0.38]	.01	[-.04, .06]	.19		
Gender	-0.70	[-8.50, 7.11]	-0.02	[-0.29, 0.24]	.00	[-.01, .01]	-.06		
Education	0.82	[-1.89, 3.54]	0.08	[-0.19, 0.35]	.01	[-.03, .04]	.10		
PASS	10.87**	[5.55, 16.19]	0.54	[0.28, 0.81]	.29	[.07, .51]	.55**		
								R^2 = .327** 95% CI[.05,.47]	ΔR^2 = .287** 95% CI[.07, .51]
(Intercept)	1.66	[-16.10, 19.43]							
Age	0.09	[-0.22, 0.41]	0.09	[-0.20, 0.38]	.01	[-.03, .04]	.19		
Gender	-0.56	[-8.49, 7.38]	-0.02	[-0.29, 0.25]	.00	[-.01, .01]	-.06		
Education	0.97	[-1.91, 3.85]	0.10	[-0.19, 0.39]	.01	[-.03, .05]	.10		
PASS	10.93**	[5.53, 16.32]	0.54	[0.28, 0.81]	.29	[.07, .51]	.55**		
SA = Safe	2.01	[-9.43, 13.44]	0.05	[-0.24, 0.34]	.00	[-.02, .02]	.05		
								R^2 = .329** 95% CI[.04,.46]	ΔR^2 = .002 95% CI[-.02, .02]

Note. A significant *b*-weight indicates the beta-weight and semi-partial correlation are also significant. *b* represents unstandardized regression weights. *beta* indicates the standardized regression weights. sr^2 represents the semi-partial correlation squared. *r* represents the zero-order correlation. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively. TSK = Tampa Scale of Kinesiophobia, PASS = Pain Anxiety Symptom Scale, SIP-CP = Sickness Illness Profile-Chronic Pain, ODI = Oswestry Disability Index, TUG = Timed Up and Go, RF = Repeated Flexion Test, and LR = Loaded Reach Test.
* indicates $p < .05$. ** indicates $p < .01$.

Table A1.11

Regression results using ODI as the criterion

Predictor	*b*	*b* 95% CI [LL, UL]	*beta*	*beta* 95% CI [LL, UL]	sr^2	sr^2 95% CI [LL, UL]	*r*	Fit	Difference
(Intercept)	17.54	[-0.57, 35.66]							
Age	0.19	[-0.16, 0.53]	0.17	[-0.15, 0.49]	.03	[-.07, .12]	.19		
Gender	-1.41	[-10.60, 7.77]	-0.05	[-0.36, 0.26]	.00	[-.02, .03]	-.06		
Education	0.51	[-2.69, 3.70]	0.05	[-0.27, 0.37]	.00	[-.03, .03]	.10		
								R^2 = .040 95% CI[.00,.14]	
(Intercept)	-20.68	[-47.95, 6.59]							
Age	0.19	[-0.12, 0.49]	0.17	[-0.11, 0.45]	.03	[-.05, .11]	.19		
Gender	-1.89	[-10.03, 6.26]	-0.06	[-0.34, 0.21]	.00	[-.03, .04]	-.06		
Education	0.21	[-2.62, 3.05]	0.02	[-0.26, 0.31]	.00	[-.01, .01]	.10		
TSK	1.04**	[0.44, 1.63]	0.48	[0.20, 0.75]	.23	[.01, .44]	.48**		
								R^2 = .266* 95% CI[.01,.41]	ΔR^2 = .225** 95% CI[.01, .44]
(Intercept)	-22.05	[-49.56, 5.46]							
Age	0.20	[-0.11, 0.51]	0.18	[-0.10, 0.47]	.03	[-.06, .12]	.19		
Gender	-2.73	[-11.11, 5.64]	-0.09	[-0.38, 0.19]	.01	[-.04, .05]	-.06		
Education	0.16	[-2.69, 3.01]	0.02	[-0.27, 0.30]	.00	[-.01, .01]	.10		
TSK	1.06**	[0.46, 1.66]	0.49	[0.21, 0.76]	.23	[.02, .45]	.48**		
PA = Safe	5.06	[-6.06, 16.19]	0.13	[-0.15, 0.41]	.02	[-.05, .08]	.05		
								R^2 = .281* 95% CI[.01,.41]	ΔR^2 = .016 95% CI[-.05, .08]

Note. A significant *b*-weight indicates the beta-weight and semi-partial correlation are also significant. *b* represents unstandardized regression weights. *beta* indicates the standardized regression weights. sr^2 represents the semi-partial correlation squared. *r* represents the zero-order correlation. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively. TSK = Tampa Scale of Kinesiophobia, PASS = Pain Anxiety Symptom Scale, SIP-CP = Sickness Illness Profile-Chronic Pain, ODI = Oswestry Disability Index, TUG = Timed Up and Go, RF = Repeated Flexion Test, and LR = Loaded Reach Test.
* indicates $p < .05$. ** indicates $p < .01$.

Table A1.12

Regression results using ODI as the criterion

Predictor	*b*	*b* 95% CI [LL, UL]	*beta*	*beta* 95% CI [LL, UL]	sr^2	sr^2 95% CI [LL, UL]	*r*	Fit	Difference
(Intercept)	17.54	[-0.57, 35.66]							
Age	0.19	[-0.16, 0.53]	0.17	[-0.15, 0.49]	.03	[-.07, .12]	.19		
Gender	-1.41	[-10.60, 7.77]	-0.05	[-0.36, 0.26]	.00	[-.02, .03]	-.06		
Education	0.51	[-2.69, 3.70]	0.05	[-0.27, 0.37]	.00	[-.03, .03]	.10		
								R^2 = .040 95% CI[.00,.14]	
(Intercept)	-20.68	[-47.95, 6.59]							
Age	0.19	[-0.12, 0.49]	0.17	[-0.11, 0.45]	.03	[-.05, .11]	.19		
Gender	-1.89	[-10.03, 6.26]	-0.06	[-0.34, 0.21]	.00	[-.03, .04]	-.06		
Education	0.21	[-2.62, 3.05]	0.02	[-0.26, 0.31]	.00	[-.01, .01]	.10		
TSK	1.04**	[0.44, 1.63]	0.48	[0.20, 0.75]	.23	[.01, .44]	.48**		
								R^2 = .266* 95% CI[.01,.41]	ΔR^2 = .225** 95% CI[.01, .44]
(Intercept)	-20.82	[-48.62, 6.98]							
Age	0.19	[-0.14, 0.52]	0.17	[-0.13, 0.48]	.03	[-.05, .11]	.19		
Gender	-1.90	[-10.17, 6.36]	-0.06	[-0.34, 0.21]	.00	[-.03, .04]	-.06		
Education	0.20	[-2.69, 3.09]	0.02	[-0.27, 0.31]	.00	[-.01, .01]	.10		
TSK	1.04**	[0.43, 1.65]	0.48	[0.20, 0.76]	.22	[.01, .44]	.48**		
SA = Danger	0.53	[-10.80, 11.85]	0.01	[-0.28, 0.31]	.00	[-.01, .01]	-.08		
								R^2 = .266* 95% CI[.00,.40]	ΔR^2 = .000 95% CI[-.01, .01]

Note. A significant *b*-weight indicates the beta-weight and semi-partial correlation are also significant. *b* represents unstandardized regression weights. *beta* indicates the standardized regression weights. sr^2 represents the semi-partial correlation squared. *r* represents the zero-order correlation. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively. TSK = Tampa Scale of Kinesiophobia, PASS = Pain Anxiety Symptom Scale, SIP-CP = Sickness Illness Profile-Chronic Pain, ODI = Oswestry Disability Index, TUG = Timed Up and Go, RF = Repeated Flexion Test, and LR = Loaded Reach Test.
* indicates $p < .05$. ** indicates $p < .01$.

Table A1.13

Regression results using ODI as the criterion

Predictor	*b*	*b* 95% CI [LL, UL]	*beta*	*beta* 95% CI [LL, UL]	sr^2	sr^2 95% CI [LL, UL]	*r*	Fit	Difference
(Intercept)	17.54	[-0.57, 35.66]							
Age	0.19	[-0.16, 0.53]	0.17	[-0.15, 0.49]	.03	[-.07, .12]	.19		
Gender	-1.41	[-10.60, 7.77]	-0.05	[-0.36, 0.26]	.00	[-.02, .03]	-.06		
Education	0.51	[-2.69, 3.70]	0.05	[-0.27, 0.37]	.00	[-.03, .03]	.10		
								R^2 = .040 95% CI[.00,.14]	
(Intercept)	-20.68	[-47.95, 6.59]							
Age	0.19	[-0.12, 0.49]	0.17	[-0.11, 0.45]	.03	[-.05, .11]	.19		
Gender	-1.89	[-10.03, 6.26]	-0.06	[-0.34, 0.21]	.00	[-.03, .04]	-.06		
Education	0.21	[-2.62, 3.05]	0.02	[-0.26, 0.31]	.00	[-.01, .01]	.10		
TSK	1.04**	[0.44, 1.63]	0.48	[0.20, 0.75]	.23	[.01, .44]	.48**		
								R^2 = .266* 95% CI[.01,.41]	ΔR^2 = .225** 95% CI[.01, .44]
(Intercept)	-20.47	[-48.15, 7.20]							
Age	0.20	[-0.13, 0.53]	0.18	[-0.12, 0.48]	.03	[-.05, .11]	.19		
Gender	-1.99	[-10.28, 6.31]	-0.07	[-0.35, 0.21]	.00	[-.03, .04]	-.06		
Education	0.11	[-2.90, 3.12]	0.01	[-0.29, 0.31]	.00	[-.00, .01]	.10		
TSK	1.04**	[0.43, 1.65]	0.48	[0.20, 0.76]	.23	[.02, .44]	.48**		
SA = Safe	-1.43	[-13.42, 10.56]	-0.04	[-0.34, 0.27]	.00	[-.02, .02]	.05		
								R^2 = .267* 95% CI[.00,.40]	ΔR^2 = .001 95% CI[-.02, .02]

Note. A significant *b*-weight indicates the beta-weight and semi-partial correlation are also significant. *b* represents unstandardized regression weights. *beta* indicates the standardized regression weights. sr^2 represents the semi-partial correlation squared. *r* represents the zero-order correlation. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively. TSK = Tampa Scale of Kinesiophobia, PASS = Pain Anxiety Symptom Scale, SIP-CP = Sickness Illness Profile-Chronic Pain, ODI = Oswestry Disability Index, TUG = Timed Up and Go, RF = Repeated Flexion Test, and LR = Loaded Reach Test.

* indicates $p < .05$. ** indicates $p < .01$.

Table A1.14

Regression results using TUG as the criterion

Predictor	*b*	*b* 95% CI [LL, UL]	*beta*	*beta* 95% CI [LL, UL]	sr^2	sr^2 95% CI [LL, UL]	*r*	Fit	Difference
(Intercept)	10.57**	[7.74, 13.39]							
Age	0.02	[-0.03, 0.08]	0.13	[-0.19, 0.45]	.02	[-.06, .09]	.08		
Gender	0.30	[-1.13, 1.73]	0.07	[-0.25, 0.38]	.00	[-.03, .04]	.08		
Education	-0.27	[-0.77, 0.23]	-0.18	[-0.50, 0.15]	.03	[-.07, .13]	-.15		
								R^2 = .043 95% CI[.00,.15]	
(Intercept)	9.80**	[6.71, 12.89]							
Age	0.02	[-0.04, 0.07]	0.11	[-0.22, 0.43]	.01	[-.05, .07]	.08		
Gender	0.32	[-1.11, 1.74]	0.07	[-0.24, 0.38]	.00	[-.03, .04]	.08		
Education	-0.26	[-0.76, 0.23]	-0.17	[-0.49, 0.15]	.03	[-.07, .12]	-.15		
PASS	0.59	[-0.40, 1.57]	0.19	[-0.13, 0.50]	.03	[-.07, .14]	.20		
								R^2 = .077 95% CI[.00,.19]	ΔR^2 = .034 95% CI[-.07, .14]
(Intercept)	9.81**	[6.67, 12.95]							
Age	0.02	[-0.04, 0.07]	0.10	[-0.23, 0.43]	.01	[-.05, .07]	.08		
Gender	0.35	[-1.13, 1.83]	0.08	[-0.25, 0.40]	.01	[-.04, .05]	.08		
Education	-0.26	[-0.76, 0.24]	-0.17	[-0.50, 0.16]	.03	[-.06, .12]	-.15		
PASS	0.59	[-0.41, 1.59]	0.19	[-0.13, 0.51]	.03	[-.07, .14]	.20		
PA = Safe	-0.19	[-2.13, 1.76]	-0.03	[-0.36, 0.29]	.00	[-.02, .02]	-.01		
								R^2 = .078 95% CI[.00,.16]	ΔR^2 = .001 95% CI[-.02, .02]

Note. A significant *b*-weight indicates the beta-weight and semi-partial correlation are also significant. *b* represents unstandardized regression weights. *beta* indicates the standardized regression weights. sr^2 represents the semi-partial correlation squared. *r* represents the zero-order correlation. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively. TSK = Tampa Scale of Kinesiophobia, PASS = Pain Anxiety Symptom Scale, SIP-CP = Sickness Illness Profile-Chronic Pain, ODI = Oswestry Disability Index, TUG = Timed Up and Go, RF = Repeated Flexion Test, and LR = Loaded Reach Test.
* indicates $p < .05$. ** indicates $p < .01$.

Table A1.15

Regression results using TUG as the criterion

Predictor	*b*	*b* 95% CI [LL, UL]	*beta*	*beta* 95% CI [LL, UL]	sr^2	sr^2 95% CI [LL, UL]	*r*	Fit	Difference
(Intercept)	10.57**	[7.74, 13.39]							
Age	0.02	[-0.03, 0.08]	0.13	[-0.19, 0.45]	.02	[-.06, .09]	.08		
Gender	0.30	[-1.13, 1.73]	0.07	[-0.25, 0.38]	.00	[-.03, .04]	.08		
Education	-0.27	[-0.77, 0.23]	-0.18	[-0.50, 0.15]	.03	[-.07, .13]	-.15		
								R^2 = .043 95% CI[.00,.15]	
(Intercept)	9.80**	[6.71, 12.89]							
Age	0.02	[-0.04, 0.07]	0.11	[-0.22, 0.43]	.01	[-.05, .07]	.08		
Gender	0.32	[-1.11, 1.74]	0.07	[-0.24, 0.38]	.00	[-.03, .04]	.08		
Education	-0.26	[-0.76, 0.23]	-0.17	[-0.49, 0.15]	.03	[-.07, .12]	-.15		
PASS	0.59	[-0.40, 1.57]	0.19	[-0.13, 0.50]	.03	[-.07, .14]	.20		
								R^2 = .077 95% CI[.00,.19]	ΔR^2 = .034 95% CI[-.07, .14]
(Intercept)	9.81**	[6.67, 12.95]							
Age	0.02	[-0.04, 0.07]	0.10	[-0.25, 0.45]	.01	[-.04, .06]	.08		
Gender	0.32	[-1.12, 1.76]	0.07	[-0.25, 0.39]	.00	[-.03, .04]	.08		
Education	-0.26	[-0.77, 0.24]	-0.17	[-0.50, 0.16]	.03	[-.06, .12]	-.15		
PASS	0.59	[-0.41, 1.60]	0.19	[-0.13, 0.51]	.03	[-.07, .14]	.20		
SA = Danger	-0.11	[-2.16, 1.94]	-0.02	[-0.35, 0.32]	.00	[-.01, .01]	-.03		
								R^2 = .078 95% CI[.00,.16]	ΔR^2 = .000 95% CI[-.01, .01]

Note. A significant *b*-weight indicates the beta-weight and semi-partial correlation are also significant. *b* represents unstandardized regression weights. *beta* indicates the standardized regression weights. sr^2 represents the semi-partial correlation squared. *r* represents the zero-order correlation. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively. TSK = Tampa Scale of Kinesiophobia, PASS = Pain Anxiety Symptom Scale, SIP-CP = Sickness Illness Profile-Chronic Pain, ODI = Oswestry Disability Index, TUG = Timed Up and Go, RF = Repeated Flexion Test, and LR = Loaded Reach Test.
* indicates $p < .05$. ** indicates $p < .01$.

Table A1.16

Regression results using TUG as the criterion

Predictor	*b*	*b* 95% CI [LL, UL]	*beta*	*beta* 95% CI [LL, UL]	sr^2	sr^2 95% CI [LL, UL]	*r*	Fit	Difference
(Intercept)	10.57**	[7.74, 13.39]							
Age	0.02	[-0.03, 0.08]	0.13	[-0.19, 0.45]	.02	[-.06, .09]	.08		
Gender	0.30	[-1.13, 1.73]	0.07	[-0.25, 0.38]	.00	[-.03, .04]	.08		
Education	-0.27	[-0.77, 0.23]	-0.18	[-0.50, 0.15]	.03	[-.07, .13]	-.15		
								R^2 = .043 95% CI[.00,.15]	
(Intercept)	9.80**	[6.71, 12.89]							
Age	0.02	[-0.04, 0.07]	0.11	[-0.22, 0.43]	.01	[-.05, .07]	.08		
Gender	0.32	[-1.11, 1.74]	0.07	[-0.24, 0.38]	.00	[-.03, .04]	.08		
Education	-0.26	[-0.76, 0.23]	-0.17	[-0.49, 0.15]	.03	[-.07, .12]	-.15		
PASS	0.59	[-0.40, 1.57]	0.19	[-0.13, 0.50]	.03	[-.07, .14]	.20		
								R^2 = .077 95% CI[.00,.19]	ΔR^2 = .034 95% CI[-.07, .14]
(Intercept)	9.69**	[6.47, 12.91]							
Age	0.01	[-0.04, 0.07]	0.09	[-0.26, 0.44]	.01	[-.04, .05]	.08		
Gender	0.34	[-1.11, 1.79]	0.07	[-0.24, 0.39]	.01	[-.04, .05]	.08		
Education	-0.24	[-0.77, 0.29]	-0.16	[-0.50, 0.19]	.02	[-.06, .10]	-.15		
PASS	0.60	[-0.40, 1.60]	0.19	[-0.13, 0.51]	.04	[-.07, .14]	.20		
SA = Safe	0.31	[-1.77, 2.38]	0.05	[-0.29, 0.39]	.00	[-.02, .03]	.10		
								R^2 = .080 95% CI[.00,.16]	ΔR^2 = .002 95% CI[-.02, .03]

Note. A significant *b*-weight indicates the beta-weight and semi-partial correlation are also significant. *b* represents unstandardized regression weights. *beta* indicates the standardized regression weights. sr^2 represents the semi-partial correlation squared. *r* represents the zero-order correlation. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively. TSK = Tampa Scale of Kinesiophobia, PASS = Pain Anxiety Symptom Scale, SIP-CP = Sickness Illness Profile-Chronic Pain, ODI = Oswestry Disability Index, TUG = Timed Up and Go, RF = Repeated Flexion Test, and LR = Loaded Reach Test.
* indicates $p < .05$. ** indicates $p < .01$.

Table A1.17

Regression results using TUG as the criterion

Predictor	*b*	*b* 95% CI [LL, UL]	*beta*	*beta* 95% CI [LL, UL]	sr^2	sr^2 95% CI [LL, UL]	*r*	Fit	Difference
(Intercept)	10.57**	[7.74, 13.39]							
Age	0.02	[-0.03, 0.08]	0.13	[-0.19, 0.45]	.02	[-.06, .09]	.08		
Gender	0.30	[-1.13, 1.73]	0.07	[-0.25, 0.38]	.00	[-.03, .04]	.08		
Education	-0.27	[-0.77, 0.23]	-0.18	[-0.50, 0.15]	.03	[-.07, .13]	-.15		
								R^2 = .043 95% CI[.00,.15]	
(Intercept)	4.78*	[0.39, 9.16]							
Age	0.02	[-0.03, 0.07]	0.13	[-0.16, 0.42]	.02	[-.05, .08]	.08		
Gender	0.12	[-1.17, 1.41]	0.03	[-0.26, 0.31]	.00	[-.01, .01]	.08		
Education	-0.36	[-0.81, 0.09]	-0.23	[-0.53, 0.06]	.05	[-.06, .16]	-.15		
TSK	0.16**	[0.06, 0.26]	0.46	[0.18, 0.74]	.21	[-.00, .41]	.44**		
								R^2 = .249* 95% CI[.00,.40]	ΔR^2 = .206** 95% CI[-.00, .41]
(Intercept)	4.74*	[0.26, 9.21]							
Age	0.02	[-0.03, 0.07]	0.14	[-0.16, 0.43]	.02	[-.05, .08]	.08		
Gender	0.09	[-1.25, 1.43]	0.02	[-0.27, 0.32]	.00	[-.01, .01]	.08		
Education	-0.36	[-0.82, 0.10]	-0.23	[-0.53, 0.06]	.05	[-.06, .16]	-.15		
TSK	0.16**	[0.06, 0.27]	0.46	[0.17, 0.75]	.21	[-.00, .42]	.44**		
PA = Safe	0.15	[-1.61, 1.91]	0.03	[-0.27, 0.32]	.00	[-.01, .01]	-.01		
								R^2 = .250* 95% CI[.00,.38]	ΔR^2 = .001 95% CI[-.01, .01]

Note. A significant *b*-weight indicates the beta-weight and semi-partial correlation are also significant. *b* represents unstandardized regression weights. *beta* indicates the standardized regression weights. sr^2 represents the semi-partial correlation squared. *r* represents the zero-order correlation. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively. TSK = Tampa Scale of Kinesiophobia, PASS = Pain Anxiety Symptom Scale, SIP-CP = Sickness Illness Profile-Chronic Pain, ODI = Oswestry Disability Index, TUG = Timed Up and Go, RF = Repeated Flexion Test, and LR = Loaded Reach Test.
* indicates $p < .05$. ** indicates $p < .01$.

Table A1.18

Regression results using TUG as the criterion

Predictor	*b*	*b* 95% CI [LL, UL]	*beta*	*beta* 95% CI [LL, UL]	sr^2	sr^2 95% CI [LL, UL]	*r*	Fit	Difference
(Intercept)	10.57**	[7.74, 13.39]							
Age	0.02	[-0.03, 0.08]	0.13	[-0.19, 0.45]	.02	[-.06, .09]	.08		
Gender	0.30	[-1.13, 1.73]	0.07	[-0.25, 0.38]	.00	[-.03, .04]	.08		
Education	-0.27	[-0.77, 0.23]	-0.18	[-0.50, 0.15]	.03	[-.07, .13]	-.15		
								R^2 = .043 95% CI[.00,.15]	
(Intercept)	4.78*	[0.39, 9.16]							
Age	0.02	[-0.03, 0.07]	0.13	[-0.16, 0.42]	.02	[-.05, .08]	.08		
Gender	0.12	[-1.17, 1.41]	0.03	[-0.26, 0.31]	.00	[-.01, .01]	.08		
Education	-0.36	[-0.81, 0.09]	-0.23	[-0.53, 0.06]	.05	[-.06, .16]	-.15		
TSK	0.16**	[0.06, 0.26]	0.46	[0.18, 0.74]	.21	[-.00, .41]	.44**		
								R^2 = .249* 95% CI[.00,.40]	ΔR^2 = .206** 95% CI[-.00, .41]
(Intercept)	4.79*	[0.33, 9.24]							
Age	0.02	[-0.03, 0.07]	0.13	[-0.18, 0.44]	.01	[-.05, .07]	.08		
Gender	0.12	[-1.19, 1.43]	0.03	[-0.26, 0.31]	.00	[-.01, .01]	.08		
Education	-0.36	[-0.82, 0.10]	-0.23	[-0.53, 0.07]	.05	[-.06, .16]	-.15		
TSK	0.16**	[0.06, 0.27]	0.46	[0.17, 0.75]	.21	[-.00, .42]	.44**		
SA = Danger	-0.07	[-1.91, 1.78]	-0.01	[-0.31, 0.29]	.00	[-.01, .01]	-.03		
								R^2 = .249* 95% CI[.00,.38]	ΔR^2 = .000 95% CI[-.01, .01]

Note. A significant *b*-weight indicates the beta-weight and semi-partial correlation are also significant. *b* represents unstandardized regression weights. *beta* indicates the standardized regression weights. sr^2 represents the semi-partial correlation squared. *r* represents the zero-order correlation. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively. TSK = Tampa Scale of Kinesiophobia, PASS = Pain Anxiety Symptom Scale, SIP-CP = Sickness Illness Profile-Chronic Pain, ODI = Oswestry Disability Index, TUG = Timed Up and Go, RF = Repeated Flexion Test, and LR = Loaded Reach Test.
* indicates $p < .05$. ** indicates $p < .01$.

Table A1.19

Regression results using TUG as the criterion

Predictor	*b*	*b* 95% CI [LL, UL]	*beta*	*beta* 95% CI [LL, UL]	sr^2	sr^2 95% CI [LL, UL]	*r*	Fit	Difference
(Intercept)	10.57**	[7.74, 13.39]							
Age	0.02	[-0.03, 0.08]	0.13	[-0.19, 0.45]	.02	[-.06, .09]	.08		
Gender	0.30	[-1.13, 1.73]	0.07	[-0.25, 0.38]	.00	[-.03, .04]	.08		
Education	-0.27	[-0.77, 0.23]	-0.18	[-0.50, 0.15]	.03	[-.07, .13]	-.15		
								R^2 = .043 95% CI[.00,.15]	
(Intercept)	4.78*	[0.39, 9.16]							
Age	0.02	[-0.03, 0.07]	0.13	[-0.16, 0.42]	.02	[-.05, .08]	.08		
Gender	0.12	[-1.17, 1.41]	0.03	[-0.26, 0.31]	.00	[-.01, .01]	.08		
Education	-0.36	[-0.81, 0.09]	-0.23	[-0.53, 0.06]	.05	[-.06, .16]	-.15		
TSK	0.16**	[0.06, 0.26]	0.46	[0.18, 0.74]	.21	[-.00, .41]	.44**		
								R^2 = .249* 95% CI[.00,.40]	ΔR^2 = .206** 95% CI[-.00, .41]
(Intercept)	4.79*	[0.34, 9.24]							
Age	0.02	[-0.03, 0.07]	0.14	[-0.17, 0.45]	.02	[-.05, .08]	.08		
Gender	0.11	[-1.21, 1.43]	0.02	[-0.27, 0.31]	.00	[-.01, .01]	.08		
Education	-0.37	[-0.85, 0.11]	-0.24	[-0.55, 0.07]	.05	[-.06, .16]	-.15		
TSK	0.16**	[0.06, 0.27]	0.46	[0.17, 0.75]	.21	[-.00, .41]	.44**		
SA = Safe	-0.12	[-2.00, 1.77]	-0.02	[-0.33, 0.29]	.00	[-.01, .01]	.10		
								R^2 = .250* 95% CI[.00,.38]	ΔR^2 = .000 95% CI[-.01, .01]

Note. A significant *b*-weight indicates the beta-weight and semi-partial correlation are also significant. *b* represents unstandardized regression weights. *beta* indicates the standardized regression weights. sr^2 represents the semi-partial correlation squared. *r* represents the zero-order correlation. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively. TSK = Tampa Scale of Kinesiophobia, PASS = Pain Anxiety Symptom Scale, SIP-CP = Sickness Illness Profile-Chronic Pain, ODI = Oswestry Disability Index, TUG = Timed Up and Go, RF = Repeated Flexion Test, and LR = Loaded Reach Test.
* indicates $p < .05$. ** indicates $p < .01$.

Table A1.20

Regression results using RF as the criterion

Predictor	*b*	*b* 95% CI [LL, UL]	*beta*	*beta* 95% CI [LL, UL]	sr^2	sr^2 95% CI [LL, UL]	*r*	Fit	Difference
(Intercept)	11.07**	[7.93, 14.21]							
Age	0.01	[-0.05, 0.07]	0.06	[-0.26, 0.38]	.00	[-.03, .04]	.07		
Gender	-1.14	[-2.73, 0.45]	-0.23	[-0.54, 0.09]	.05	[-.08, .18]	-.23		
Education	-0.02	[-0.57, 0.53]	-0.01	[-0.33, 0.31]	.00	[-.01, .01]	.03		
								R^2 = .054 95% CI[.00,.17]	
(Intercept)	9.77**	[6.42, 13.13]							
Age	0.00	[-0.05, 0.06]	0.02	[-0.29, 0.34]	.00	[-.01, .01]	.07		
Gender	-1.12	[-2.66, 0.43]	-0.22	[-0.52, 0.08]	.05	[-.07, .17]	-.23		
Education	-0.01	[-0.54, 0.53]	-0.00	[-0.32, 0.31]	.00	[-.00, .00]	.03		
PASS	0.99	[-0.08, 2.06]	0.28	[-0.02, 0.59]	.08	[-.07, .23]	.29		
								R^2 = .133 95% CI[.00,.27]	ΔR^2 = .078 95% CI[-.07, .23]
(Intercept)	9.79**	[6.39, 13.18]							
Age	0.00	[-0.06, 0.06]	0.02	[-0.30, 0.34]	.00	[-.01, .01]	.07		
Gender	-1.07	[-2.68, 0.53]	-0.21	[-0.53, 0.10]	.04	[-.07, .15]	-.23		
Education	-0.00	[-0.55, 0.54]	-0.00	[-0.32, 0.32]	.00	[-.00, .00]	.03		
PASS	1.00	[-0.09, 2.08]	0.28	[-0.02, 0.59]	.08	[-.07, .23]	.29		
PA = Safe	-0.27	[-2.38, 1.84]	-0.04	[-0.36, 0.27]	.00	[-.02, .02]	-.07		
								R^2 = .134 95% CI[.00,.25]	ΔR^2 = .002 95% CI[-.02, .02]

Note. A significant *b*-weight indicates the beta-weight and semi-partial correlation are also significant. *b* represents unstandardized regression weights. *beta* indicates the standardized regression weights. sr^2 represents the semi-partial correlation squared. *r* represents the zero-order correlation. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively. TSK = Tampa Scale of Kinesiophobia, PASS = Pain Anxiety Symptom Scale, SIP-CP = Sickness Illness Profile-Chronic Pain, ODI = Oswestry Disability Index, TUG = Timed Up and Go, RF = Repeated Flexion Test, and LR = Loaded Reach Test.
* indicates $p < .05$. ** indicates $p < .01$.

Table A1.21

Regression results using RF as the criterion

Predictor	*b*	*b* 95% CI [LL, UL]	*beta*	*beta* 95% CI [LL, UL]	sr^2	sr^2 95% CI [LL, UL]	*r*	Fit	Difference
(Intercept)	11.07**	[7.93, 14.21]							
Age	0.01	[-0.05, 0.07]	0.06	[-0.26, 0.38]	.00	[-.03, .04]	.07		
Gender	-1.14	[-2.73, 0.45]	-0.23	[-0.54, 0.09]	.05	[-.08, .18]	-.23		
Education	-0.02	[-0.57, 0.53]	-0.01	[-0.33, 0.31]	.00	[-.01, .01]	.03		
								R^2 = .054 95% CI[.00,.17]	
(Intercept)	9.77**	[6.42, 13.13]							
Age	0.00	[-0.05, 0.06]	0.02	[-0.29, 0.34]	.00	[-.01, .01]	.07		
Gender	-1.12	[-2.66, 0.43]	-0.22	[-0.52, 0.08]	.05	[-.07, .17]	-.23		
Education	-0.01	[-0.54, 0.53]	-0.00	[-0.32, 0.31]	.00	[-.00, .00]	.03		
PASS	0.99	[-0.08, 2.06]	0.28	[-0.02, 0.59]	.08	[-.07, .23]	.29		
								R^2 = .133 95% CI[.00,.27]	ΔR^2 = .078 95% CI[-.07, .23]
(Intercept)	9.86**	[6.49, 13.23]							
Age	-0.00	[-0.07, 0.06]	-0.03	[-0.36, 0.31]	.00	[-.01, .01]	.07		
Gender	-1.11	[-2.66, 0.44]	-0.22	[-0.52, 0.09]	.05	[-.07, .16]	-.23		
Education	0.01	[-0.54, 0.55]	0.00	[-0.31, 0.32]	.00	[-.00, .00]	.03		
PASS	1.03	[-0.04, 2.11]	0.29	[-0.01, 0.60]	.08	[-.07, .24]	.29		
SA = Danger	-0.97	[-3.17, 1.24]	-0.14	[-0.46, 0.18]	.02	[-.05, .09]	-.12		
								R^2 = .150 95% CI[.00,.27]	ΔR^2 = .018 95% CI[-.05, .09]

Note. A significant *b*-weight indicates the beta-weight and semi-partial correlation are also significant. *b* represents unstandardized regression weights. *beta* indicates the standardized regression weights. sr^2 represents the semi-partial correlation squared. *r* represents the zero-order correlation. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively. TSK = Tampa Scale of Kinesiophobia, PASS = Pain Anxiety Symptom Scale, SIP-CP = Sickness Illness Profile-Chronic Pain, ODI = Oswestry Disability Index, TUG = Timed Up and Go, RF = Repeated Flexion Test, and LR = Loaded Reach Test.
* indicates $p < .05$. ** indicates $p < .01$.

Table A1.22

Regression results using RF as the criterion

Predictor	*b*	*b* 95% CI [LL, UL]	*beta*	*beta* 95% CI [LL, UL]	sr^2	sr^2 95% CI [LL, UL]	*r*	Fit	Difference
(Intercept)	11.07**	[7.93, 14.21]							
Age	0.01	[-0.05, 0.07]	0.06	[-0.26, 0.38]	.00	[-.03, .04]	.07		
Gender	-1.14	[-2.73, 0.45]	-0.23	[-0.54, 0.09]	.05	[-.08, .18]	-.23		
Education	-0.02	[-0.57, 0.53]	-0.01	[-0.33, 0.31]	.00	[-.01, .01]	.03		
								R^2 = .054 95% CI[.00,.17]	
(Intercept)	9.77**	[6.42, 13.13]							
Age	0.00	[-0.05, 0.06]	0.02	[-0.29, 0.34]	.00	[-.01, .01]	.07		
Gender	-1.12	[-2.66, 0.43]	-0.22	[-0.52, 0.08]	.05	[-.07, .17]	-.23		
Education	-0.01	[-0.54, 0.53]	-0.00	[-0.32, 0.31]	.00	[-.00, .00]	.03		
PASS	0.99	[-0.08, 2.06]	0.28	[-0.02, 0.59]	.08	[-.07, .23]	.29		
								R^2 = .133 95% CI[.00,.27]	ΔR^2 = .078 95% CI[-.07, .23]
(Intercept)	9.54**	[6.06, 13.02]							
Age	-0.00	[-0.06, 0.06]	-0.01	[-0.34, 0.33]	.00	[-.00, .00]	.07		
Gender	-1.07	[-2.64, 0.49]	-0.21	[-0.52, 0.10]	.04	[-.07, .16]	-.23		
Education	0.04	[-0.53, 0.61]	0.02	[-0.31, 0.35]	.00	[-.01, .01]	.03		
PASS	1.01	[-0.07, 2.09]	0.29	[-0.02, 0.59]	.08	[-.07, .23]	.29		
SA = Safe	0.64	[-1.60, 2.88]	0.09	[-0.24, 0.42]	.01	[-.04, .06]	.10		
								R^2 = .140 95% CI[.00,.25]	ΔR^2 = .008 95% CI[-.04, .06]

Note. A significant *b*-weight indicates the beta-weight and semi-partial correlation are also significant. *b* represents unstandardized regression weights. *beta* indicates the standardized regression weights. sr^2 represents the semi-partial correlation squared. *r* represents the zero-order correlation. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively. TSK = Tampa Scale of Kinesiophobia, PASS = Pain Anxiety Symptom Scale, SIP-CP = Sickness Illness Profile-Chronic Pain, ODI = Oswestry Disability Index, TUG = Timed Up and Go, RF = Repeated Flexion Test, and LR = Loaded Reach Test.
* indicates $p < .05$. ** indicates $p < .01$.

Table A1.23

Regression results using RF as the criterion

Predictor	*b*	*b* 95% CI [LL, UL]	*beta*	*beta* 95% CI [LL, UL]	sr^2	sr^2 95% CI [LL, UL]	*r*	Fit	Difference
(Intercept)	11.07**	[7.93, 14.21]							
Age	0.01	[-0.05, 0.07]	0.06	[-0.26, 0.38]	.00	[-.03, .04]	.07		
Gender	-1.14	[-2.73, 0.45]	-0.23	[-0.54, 0.09]	.05	[-.08, .18]	-.23		
Education	-0.02	[-0.57, 0.53]	-0.01	[-0.33, 0.31]	.00	[-.01, .01]	.03		
								R^2 = .054 95% CI[.00,.17]	
(Intercept)	4.34	[-0.47, 9.15]							
Age	0.01	[-0.04, 0.06]	0.06	[-0.22, 0.35]	.00	[-.03, .03]	.07		
Gender	-1.36	[-2.77, 0.06]	-0.27	[-0.55, 0.01]	.07	[-.06, .20]	-.23		
Education	-0.12	[-0.62, 0.37]	-0.07	[-0.36, 0.22]	.00	[-.03, .04]	.03		
TSK	0.19**	[0.08, 0.30]	0.48	[0.20, 0.76]	.22	[.01, .43]	.45**		
								R^2 = .278* 95% CI[.02,.42]	ΔR^2 = .223** 95% CI[.01, .43]
(Intercept)	4.29	[-0.62, 9.20]							
Age	0.01	[-0.04, 0.07]	0.07	[-0.22, 0.35]	.00	[-.03, .04]	.07		
Gender	-1.39	[-2.86, 0.08]	-0.27	[-0.56, 0.02]	.07	[-.06, .20]	-.23		
Education	-0.12	[-0.63, 0.38]	-0.07	[-0.36, 0.22]	.00	[-.03, .04]	.03		
TSK	0.19**	[0.08, 0.30]	0.48	[0.20, 0.76]	.22	[.01, .43]	.45**		
PA = Safe	0.16	[-1.77, 2.09]	0.02	[-0.26, 0.31]	.00	[-.01, .01]	-.07		
								R^2 = .278* 95% CI[.00,.41]	ΔR^2 = .001 95% CI[-.01, .01]

Note. A significant *b*-weight indicates the beta-weight and semi-partial correlation are also significant. *b* represents unstandardized regression weights. *beta* indicates the standardized regression weights. sr^2 represents the semi-partial correlation squared. *r* represents the zero-order correlation. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively. TSK = Tampa Scale of Kinesiophobia, PASS = Pain Anxiety Symptom Scale, SIP-CP = Sickness Illness Profile-Chronic Pain, ODI = Oswestry Disability Index, TUG = Timed Up and Go, RF = Repeated Flexion Test, and LR = Loaded Reach Test.
* indicates $p < .05$. ** indicates $p < .01$.

Table A1.24

Regression results using RF as the criterion

Predictor	*b*	*b* 95% CI [LL, UL]	*beta*	*beta* 95% CI [LL, UL]	sr^2	sr^2 95% CI [LL, UL]	*r*	Fit	Difference
(Intercept)	11.07**	[7.93, 14.21]							
Age	0.01	[-0.05, 0.07]	0.06	[-0.26, 0.38]	.00	[-.03, .04]	.07		
Gender	-1.14	[-2.73, 0.45]	-0.23	[-0.54, 0.09]	.05	[-.08, .18]	-.23		
Education	-0.02	[-0.57, 0.53]	-0.01	[-0.33, 0.31]	.00	[-.01, .01]	.03		
								R^2 = .054 95% CI[.00,.17]	
(Intercept)	4.34	[-0.47, 9.15]							
Age	0.01	[-0.04, 0.06]	0.06	[-0.22, 0.35]	.00	[-.03, .03]	.07		
Gender	-1.36	[-2.77, 0.06]	-0.27	[-0.55, 0.01]	.07	[-.06, .20]	-.23		
Education	-0.12	[-0.62, 0.37]	-0.07	[-0.36, 0.22]	.00	[-.03, .04]	.03		
TSK	0.19**	[0.08, 0.30]	0.48	[0.20, 0.76]	.22	[.01, .43]	.45**		
								R^2 = .278* 95% CI[.02,.42]	ΔR^2 = .223** 95% CI[.01, .43]
(Intercept)	4.42	[-0.41, 9.26]							
Age	0.00	[-0.05, 0.06]	0.02	[-0.28, 0.32]	.00	[-.01, .01]	.07		
Gender	-1.36	[-2.78, 0.06]	-0.27	[-0.55, 0.01]	.07	[-.06, .20]	-.23		
Education	-0.11	[-0.61, 0.38]	-0.07	[-0.35, 0.22]	.00	[-.03, .04]	.03		
TSK	0.19**	[0.08, 0.30]	0.48	[0.20, 0.76]	.23	[.01, .44]	.45**		
SA = Danger	-0.86	[-2.86, 1.15]	-0.13	[-0.42, 0.17]	.01	[-.04, .07]	-.12		
								R^2 = .292* 95% CI[.01,.42]	ΔR^2 = .014 95% CI[-.04, .07]

Note. A significant *b*-weight indicates the beta-weight and semi-partial correlation are also significant. *b* represents unstandardized regression weights. *beta* indicates the standardized regression weights. sr^2 represents the semi-partial correlation squared. *r* represents the zero-order correlation. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively. TSK = Tampa Scale of Kinesiophobia, PASS = Pain Anxiety Symptom Scale, SIP-CP = Sickness Illness Profile-Chronic Pain, ODI = Oswestry Disability Index, TUG = Timed Up and Go, RF = Repeated Flexion Test, and LR = Loaded Reach Test.
* indicates $p < .05$. ** indicates $p < .01$.

Table A1.25

Regression results using RF as the criterion

Predictor	*b*	*b* 95% CI [LL, UL]	*beta*	*beta* 95% CI [LL, UL]	sr^2	sr^2 95% CI [LL, UL]	*r*	Fit	Difference
(Intercept)	11.07**	[7.93, 14.21]							
Age	0.01	[-0.05, 0.07]	0.06	[-0.26, 0.38]	.00	[-.03, .04]	.07		
Gender	-1.14	[-2.73, 0.45]	-0.23	[-0.54, 0.09]	.05	[-.08, .18]	-.23		
Education	-0.02	[-0.57, 0.53]	-0.01	[-0.33, 0.31]	.00	[-.01, .01]	.03		
								R^2 = .054 95% CI[.00,.17]	
(Intercept)	4.34	[-0.47, 9.15]							
Age	0.01	[-0.04, 0.06]	0.06	[-0.22, 0.35]	.00	[-.03, .03]	.07		
Gender	-1.36	[-2.77, 0.06]	-0.27	[-0.55, 0.01]	.07	[-.06, .20]	-.23		
Education	-0.12	[-0.62, 0.37]	-0.07	[-0.36, 0.22]	.00	[-.03, .04]	.03		
TSK	0.19**	[0.08, 0.30]	0.48	[0.20, 0.76]	.22	[.01, .43]	.45**		
								R^2 = .278* 95% CI[.02,.42]	ΔR^2 = .223** 95% CI[.01, .43]
(Intercept)	4.32	[-0.56, 9.20]							
Age	0.01	[-0.05, 0.07]	0.06	[-0.25, 0.36]	.00	[-.02, .03]	.07		
Gender	-1.35	[-2.79, 0.09]	-0.27	[-0.55, 0.02]	.07	[-.06, .20]	-.23		
Education	-0.11	[-0.64, 0.41]	-0.07	[-0.37, 0.24]	.00	[-.03, .03]	.03		
TSK	0.19**	[0.08, 0.30]	0.48	[0.19, 0.76]	.22	[.01, .43]	.45**		
SA = Safe	0.12	[-1.95, 2.18]	0.02	[-0.29, 0.32]	.00	[-.01, .01]	.10		
								R^2 = .278* 95% CI[.00,.41]	ΔR^2 = .000 95% CI[-.01, .01]

Note. A significant *b*-weight indicates the beta-weight and semi-partial correlation are also significant. *b* represents unstandardized regression weights. *beta* indicates the standardized regression weights. sr^2 represents the semi-partial correlation squared. *r* represents the zero-order correlation. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively. TSK = Tampa Scale of Kinesiophobia, PASS = Pain Anxiety Symptom Scale, SIP-CP = Sickness Illness Profile-Chronic Pain, ODI = Oswestry Disability Index, TUG = Timed Up and Go, RF = Repeated Flexion Test, and LR = Loaded Reach Test.
* indicates $p < .05$. ** indicates $p < .01$.

Table A1.26

Regression results using LR as the criterion

Predictor	*b*	*b* 95% CI [LL, UL]	*beta*	*beta* 95% CI [LL, UL]	sr^2	sr^2 95% CI [LL, UL]	*r*	Fit	Difference
(Intercept)	29.08**	[21.36, 36.80]							
Age	-0.00	[-0.15, 0.14]	-0.00	[-0.32, 0.32]	.00	[-.00, .00]	-.06		
Gender	1.54	[-2.37, 5.45]	0.12	[-0.19, 0.44]	.01	[-.05, .08]	.14		
Education	-0.82	[-2.18, 0.55]	-0.19	[-0.51, 0.13]	.03	[-.07, .14]	-.21		
								R^2 = .058 95% CI[.00,.18]	
(Intercept)	29.83**	[21.24, 38.42]							
Age	0.00	[-0.15, 0.15]	0.00	[-0.32, 0.33]	.00	[-.00, .00]	-.06		
Gender	1.52	[-2.43, 5.48]	0.12	[-0.19, 0.44]	.01	[-.05, .08]	.14		
Education	-0.82	[-2.20, 0.55]	-0.19	[-0.52, 0.13]	.04	[-.07, .14]	-.21		
PASS	-0.57	[-3.31, 2.16]	-0.07	[-0.38, 0.25]	.00	[-.03, .04]	-.07		
								R^2 = .062 95% CI[.00,.16]	ΔR^2 = .004 95% CI[-.03, .04]
(Intercept)	29.93**	[21.29, 38.57]							
Age	-0.00	[-0.16, 0.15]	-0.01	[-0.34, 0.32]	.00	[-.01, .01]	-.06		
Gender	1.86	[-2.21, 5.93]	0.15	[-0.18, 0.47]	.02	[-.06, .10]	.14		
Education	-0.80	[-2.19, 0.58]	-0.19	[-0.52, 0.14]	.03	[-.07, .14]	-.21		
PASS	-0.50	[-3.26, 2.26]	-0.06	[-0.38, 0.26]	.00	[-.03, .04]	-.07		
PA = Safe	-2.05	[-7.41, 3.32]	-0.12	[-0.45, 0.20]	.01	[-.05, .08]	-.09		
								R^2 = .077 95% CI[.00,.16]	ΔR^2 = .014 95% CI[-.05, .08]

Note. A significant *b*-weight indicates the beta-weight and semi-partial correlation are also significant. *b* represents unstandardized regression weights. *beta* indicates the standardized regression weights. sr^2 represents the semi-partial correlation squared. *r* represents the zero-order correlation. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively. TSK = Tampa Scale of Kinesiophobia, PASS = Pain Anxiety Symptom Scale, SIP-CP = Sickness Illness Profile-Chronic Pain, ODI = Oswestry Disability Index, TUG = Timed Up and Go, RF = Repeated Flexion Test, and LR = Loaded Reach Test.
* indicates $p < .05$. ** indicates $p < .01$.

Table A1.27

Regression results using LR as the criterion

Predictor	*b*	*b* 95% CI [LL, UL]	*beta*	*beta* 95% CI [LL, UL]	sr^2	sr^2 95% CI [LL, UL]	*r*	Fit	Difference
(Intercept)	29.08**	[21.36, 36.80]							
Age	-0.00	[-0.15, 0.14]	-0.00	[-0.32, 0.32]	.00	[-.00, .00]	-.06		
Gender	1.54	[-2.37, 5.45]	0.12	[-0.19, 0.44]	.01	[-.05, .08]	.14		
Education	-0.82	[-2.18, 0.55]	-0.19	[-0.51, 0.13]	.03	[-.07, .14]	-.21		
								R^2 = .058 95% CI[.00,.18]	
(Intercept)	29.83**	[21.24, 38.42]							
Age	0.00	[-0.15, 0.15]	0.00	[-0.32, 0.33]	.00	[-.00, .00]	-.06		
Gender	1.52	[-2.43, 5.48]	0.12	[-0.19, 0.44]	.01	[-.05, .08]	.14		
Education	-0.82	[-2.20, 0.55]	-0.19	[-0.52, 0.13]	.04	[-.07, .14]	-.21		
PASS	-0.57	[-3.31, 2.16]	-0.07	[-0.38, 0.25]	.00	[-.03, .04]	-.07		
								R^2 = .062 95% CI[.00,.16]	ΔR^2 = .004 95% CI[-.03, .04]
(Intercept)	30.06**	[21.42, 38.69]							
Age	-0.02	[-0.18, 0.14]	-0.05	[-0.39, 0.30]	.00	[-.02, .03]	-.06		
Gender	1.53	[-2.43, 5.50]	0.12	[-0.19, 0.44]	.01	[-.05, .08]	.14		
Education	-0.80	[-2.18, 0.59]	-0.19	[-0.51, 0.14]	.03	[-.07, .13]	-.21		
PASS	-0.46	[-3.22, 2.29]	-0.05	[-0.37, 0.26]	.00	[-.03, .03]	-.07		
SA = Danger	-2.48	[-8.12, 3.16]	-0.15	[-0.48, 0.19]	.02	[-.06, .10]	-.13		
								R^2 = .082 95% CI[.00,.17]	ΔR^2 = .019 95% CI[-.06, .10]

Note. A significant *b*-weight indicates the beta-weight and semi-partial correlation are also significant. *b* represents unstandardized regression weights. *beta* indicates the standardized regression weights. sr^2 represents the semi-partial correlation squared. *r* represents the zero-order correlation. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively. TSK = Tampa Scale of Kinesiophobia, PASS = Pain Anxiety Symptom Scale, SIP-CP = Sickness Illness Profile-Chronic Pain, ODI = Oswestry Disability Index, TUG = Timed Up and Go, RF = Repeated Flexion Test, and LR = Loaded Reach Test.
* indicates $p < .05$. ** indicates $p < .01$.

Table A1.28

Regression results using LR as the criterion

Predictor	*b*	*b* 95% CI [LL, UL]	*beta*	*beta* 95% CI [LL, UL]	sr^2	sr^2 95% CI [LL, UL]	*r*	Fit	Difference
(Intercept)	29.08**	[21.36, 36.80]							
Age	-0.00	[-0.15, 0.14]	-0.00	[-0.32, 0.32]	.00	[-.00, .00]	-.06		
Gender	1.54	[-2.37, 5.45]	0.12	[-0.19, 0.44]	.01	[-.05, .08]	.14		
Education	-0.82	[-2.18, 0.55]	-0.19	[-0.51, 0.13]	.03	[-.07, .14]	-.21		
								R^2 = .058 95% CI[.00,.18]	
(Intercept)	29.83**	[21.24, 38.42]							
Age	0.00	[-0.15, 0.15]	0.00	[-0.32, 0.33]	.00	[-.00, .00]	-.06		
Gender	1.52	[-2.43, 5.48]	0.12	[-0.19, 0.44]	.01	[-.05, .08]	.14		
Education	-0.82	[-2.20, 0.55]	-0.19	[-0.52, 0.13]	.04	[-.07, .14]	-.21		
PASS	-0.57	[-3.31, 2.16]	-0.07	[-0.38, 0.25]	.00	[-.03, .04]	-.07		
								R^2 = .062 95% CI[.00,.16]	ΔR^2 = .004 95% CI[-.03, .04]
(Intercept)	30.21**	[21.27, 39.15]							
Age	0.01	[-0.15, 0.17]	0.02	[-0.32, 0.37]	.00	[-.01, .01]	-.06		
Gender	1.45	[-2.57, 5.47]	0.12	[-0.21, 0.44]	.01	[-.05, .08]	.14		
Education	-0.90	[-2.36, 0.56]	-0.21	[-0.56, 0.13]	.04	[-.07, .15]	-.21		
PASS	-0.60	[-3.37, 2.17]	-0.07	[-0.39, 0.25]	.00	[-.03, .04]	-.07		
SA = Safe	-1.03	[-6.78, 4.72]	-0.06	[-0.41, 0.28]	.00	[-.03, .04]	-.02		
								R^2 = .066 95% CI[.00,.14]	ΔR^2 = .003 95% CI[-.03, .04]

Note. A significant *b*-weight indicates the beta-weight and semi-partial correlation are also significant. *b* represents unstandardized regression weights. *beta* indicates the standardized regression weights. sr^2 represents the semi-partial correlation squared. *r* represents the zero-order correlation. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively. TSK = Tampa Scale of Kinesiophobia, PASS = Pain Anxiety Symptom Scale, SIP-CP = Sickness Illness Profile-Chronic Pain, ODI = Oswestry Disability Index, TUG = Timed Up and Go, RF = Repeated Flexion Test, and LR = Loaded Reach Test.
* indicates $p < .05$. ** indicates $p < .01$.

Table A1.29

Regression results using LR as the criterion

Predictor	*b*	*b* 95% CI [LL, UL]	*beta*	*beta* 95% CI [LL, UL]	sr^2	sr^2 95% CI [LL, UL]	*r*	Fit	Difference
(Intercept)	29.08**	[21.36, 36.80]							
Age	-0.00	[-0.15, 0.14]	-0.00	[-0.32, 0.32]	.00	[-.00, .00]	-.06		
Gender	1.54	[-2.37, 5.45]	0.12	[-0.19, 0.44]	.01	[-.05, .08]	.14		
Education	-0.82	[-2.18, 0.55]	-0.19	[-0.51, 0.13]	.03	[-.07, .14]	-.21		
								R^2 = .058 95% CI[.00,.18]	
(Intercept)	39.65**	[26.79, 52.50]							
Age	-0.00	[-0.14, 0.14]	-0.01	[-0.32, 0.30]	.00	[-.00, .00]	-.06		
Gender	1.88	[-1.91, 5.66]	0.15	[-0.15, 0.45]	.02	[-.06, .10]	.14		
Education	-0.66	[-1.98, 0.67]	-0.16	[-0.47, 0.16]	.02	[-.06, .10]	-.21		
TSK	-0.30*	[-0.59, -0.00]	-0.30	[-0.61, -0.00]	.09	[-.07, .25]	-.31*		
								R^2 = .149 95% CI[.00,.29]	ΔR^2 = .091* 95% CI[-.07, .25]
(Intercept)	40.39**	[27.45, 53.33]							
Age	-0.01	[-0.15, 0.13]	-0.02	[-0.33, 0.29]	.00	[-.01, .01]	-.06		
Gender	2.32	[-1.56, 6.20]	0.19	[-0.12, 0.49]	.03	[-.06, .13]	.14		
Education	-0.62	[-1.95, 0.70]	-0.15	[-0.46, 0.17]	.02	[-.06, .09]	-.21		
TSK	-0.31*	[-0.61, -0.02]	-0.32	[-0.62, -0.02]	.10	[-.06, .26]	-.31*		
PA = Safe	-2.61	[-7.69, 2.48]	-0.16	[-0.47, 0.15]	.02	[-.06, .10]	-.09		
								R^2 = .172 95% CI[.00,.29]	ΔR^2 = .023 95% CI[-.06, .10]

Note. A significant *b*-weight indicates the beta-weight and semi-partial correlation are also significant. *b* represents unstandardized regression weights. *beta* indicates the standardized regression weights. sr^2 represents the semi-partial correlation squared. *r* represents the zero-order correlation. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively. TSK = Tampa Scale of Kinesiophobia, PASS = Pain Anxiety Symptom Scale, SIP-CP = Sickness Illness Profile-Chronic Pain, ODI = Oswestry Disability Index, TUG = Timed Up and Go, RF = Repeated Flexion Test, and LR = Loaded Reach Test.
* indicates $p < .05$. ** indicates $p < .01$.

Table A1.30

Regression results using LR as the criterion

Predictor	*b*	*b* 95% CI [LL, UL]	*beta*	*beta* 95% CI [LL, UL]	sr^2	sr^2 95% CI [LL, UL]	*r*	Fit	Difference
(Intercept)	29.08**	[21.36, 36.80]							
Age	-0.00	[-0.15, 0.14]	-0.00	[-0.32, 0.32]	.00	[-.00, .00]	-.06		
Gender	1.54	[-2.37, 5.45]	0.12	[-0.19, 0.44]	.01	[-.05, .08]	.14		
Education	-0.82	[-2.18, 0.55]	-0.19	[-0.51, 0.13]	.03	[-.07, .14]	-.21		
								R^2 = .058 95% CI[.00,.18]	
(Intercept)	39.65**	[26.79, 52.50]							
Age	-0.00	[-0.14, 0.14]	-0.01	[-0.32, 0.30]	.00	[-.00, .00]	-.06		
Gender	1.88	[-1.91, 5.66]	0.15	[-0.15, 0.45]	.02	[-.06, .10]	.14		
Education	-0.66	[-1.98, 0.67]	-0.16	[-0.47, 0.16]	.02	[-.06, .10]	-.21		
TSK	-0.30*	[-0.59, -0.00]	-0.30	[-0.61, -0.00]	.09	[-.07, .25]	-.31*		
								R^2 = .149 95% CI[.00,.29]	ΔR^2 = .091* 95% CI[-.07, .25]
(Intercept)	39.90**	[26.99, 52.80]							
Age	-0.03	[-0.17, 0.12]	-0.06	[-0.38, 0.27]	.00	[-.02, .03]	-.06		
Gender	1.88	[-1.91, 5.67]	0.15	[-0.15, 0.45]	.02	[-.06, .10]	.14		
Education	-0.63	[-1.96, 0.70]	-0.15	[-0.46, 0.16]	.02	[-.06, .10]	-.21		
TSK	-0.29	[-0.59, 0.00]	-0.30	[-0.60, 0.00]	.09	[-.07, .24]	-.31*		
SA = Danger	-2.44	[-7.79, 2.91]	-0.14	[-0.46, 0.17]	.02	[-.05, .09]	-.13		
								R^2 = .167 95% CI[.00,.29]	ΔR^2 = .019 95% CI[-.05, .09]

Note. A significant *b*-weight indicates the beta-weight and semi-partial correlation are also significant. *b* represents unstandardized regression weights. *beta* indicates the standardized regression weights. sr^2 represents the semi-partial correlation squared. *r* represents the zero-order correlation. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively. TSK = Tampa Scale of Kinesiophobia, PASS = Pain Anxiety Symptom Scale, SIP-CP = Sickness Illness Profile-Chronic Pain, ODI = Oswestry Disability Index, TUG = Timed Up and Go, RF = Repeated Flexion Test, and LR = Loaded Reach Test.
* indicates $p < .05$. ** indicates $p < .01$.

Table A1.31

Regression results using LR as the criterion

Predictor	*b*	*b* 95% CI [LL, UL]	*beta*	*beta* 95% CI [LL, UL]	sr^2	sr^2 95% CI [LL, UL]	*r*	Fit	Difference
(Intercept)	29.08**	[21.36, 36.80]							
Age	-0.00	[-0.15, 0.14]	-0.00	[-0.32, 0.32]	.00	[-.00, .00]	-.06		
Gender	1.54	[-2.37, 5.45]	0.12	[-0.19, 0.44]	.01	[-.05, .08]	.14		
Education	-0.82	[-2.18, 0.55]	-0.19	[-0.51, 0.13]	.03	[-.07, .14]	-.21		
								R^2 = .058 95% CI[.00,.18]	
(Intercept)	39.65**	[26.79, 52.50]							
Age	-0.00	[-0.14, 0.14]	-0.01	[-0.32, 0.30]	.00	[-.00, .00]	-.06		
Gender	1.88	[-1.91, 5.66]	0.15	[-0.15, 0.45]	.02	[-.06, .10]	.14		
Education	-0.66	[-1.98, 0.67]	-0.16	[-0.47, 0.16]	.02	[-.06, .10]	-.21		
TSK	-0.30*	[-0.59, -0.00]	-0.30	[-0.61, -0.00]	.09	[-.07, .25]	-.31*		
								R^2 = .149 95% CI[.00,.29]	ΔR^2 = .091* 95% CI[-.07, .25]
(Intercept)	39.68**	[26.63, 52.73]							
Age	-0.00	[-0.15, 0.15]	-0.00	[-0.33, 0.33]	.00	[-.00, .00]	-.06		
Gender	1.85	[-2.01, 5.71]	0.15	[-0.16, 0.46]	.02	[-.06, .10]	.14		
Education	-0.68	[-2.09, 0.72]	-0.16	[-0.49, 0.17]	.02	[-.06, .10]	-.21		
TSK	-0.30	[-0.60, 0.01]	-0.30	[-0.61, 0.01]	.09	[-.07, .24]	-.31*		
SA = Safe	-0.33	[-5.85, 5.19]	-0.02	[-0.35, 0.31]	.00	[-.01, .01]	-.02		
								R^2 = .149 95% CI[.00,.27]	ΔR^2 = .000 95% CI[-.01, .01]

Note. A significant *b*-weight indicates the beta-weight and semi-partial correlation are also significant. *b* represents unstandardized regression weights. *beta* indicates the standardized regression weights. sr^2 represents the semi-partial correlation squared. *r* represents the zero-order correlation. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively. TSK = Tampa Scale of Kinesiophobia, PASS = Pain Anxiety Symptom Scale, SIP-CP = Sickness Illness Profile-Chronic Pain, ODI = Oswestry Disability Index, TUG = Timed Up and Go, RF = Repeated Flexion Test, and LR = Loaded Reach Test.
* indicates $p < .05$. ** indicates $p < .01$.

Appendix 2: IRAP stimuli and Explicit Survey

Table A2.1

IRAP Instructions Script

This next task is very different from a questionnaire. Instead of asking you questions about what you personally think or feel, this task asks you to follow a rule and tests how easy or difficult you find it to follow that rule. In a moment you will be given the rule to follow. For example, the rule might be: "Respond AS IF physical activity is dangerous and sedentary activity is safe for your back" When a statement appears on the screen you are to determine if the statement matches the rule. If the statement matches the rule press "TRUE", if not press "FALSE". You might not personally agree with this – that's OK; this is all part of the task. At the bottom of the screen are your two response options, TRUE or FALSE. Press the D key for the left option, and the K key for the right option. Go as slowly as you need to get them all right according to the rule. Once you understand these instructions, press the SPACE BAR to begin.

Note: These instructions appear at the beginning of the IRAP task.

Table A2.2

IRAP Stimuli

Trial-Type	Stimuli
PA = Danger	Yardwork is dangerous for my back
PA = Danger	Heavy lifting is dangerous for my back
PA = Danger	Housework is dangerous for my back
PA = Danger	Moving boxes is dangerous for my back
PA = Danger	For my back, yardwork is dangerous
PA = Danger	For my back, heavy lifting is dangerous
PA = Danger	For my back, housework is dangerous
PA = Danger	For my back, moving boxes is dangerous
PA = Safe	Yardwork is safe for my back
PA = Safe	Heavy lifting is safe for my back
PA = Safe	Housework is safe for my back
PA = Safe	Moving boxes is safe for my back
PA = Safe	For my back, yardwork is safe
PA = Safe	For my back, heavy lifting is safe
PA = Safe	For my back, housework is safe
PA = Safe	For my back, moving boxes is safe
SA = Danger	Eating is dangerous for my back
SA = Danger	Watching TV is dangerous for my back
SA = Danger	Reading is dangerous for my back
SA = Danger	Relaxing is dangerous for my back
SA = Danger	For my back, eating is dangerous
SA = Danger	For my back, watching TV is dangerous
SA = Danger	For my back, reading is dangerous
SA = Danger	For my back, relaxing is dangerous
SA = Safe	Eating is safe for my back
SA = Safe	Watching TV is safe for my back
SA = Safe	Reading is safe for my back
SA = Safe	Relaxing is safe for my back
SA = Safe	For my back, eating is safe
SA = Safe	For my back, watching TV is safe
SA = Safe	For my back, reading is safe
SA = Safe	For my back, relaxing is safe

Table A2.3

Explicit Survey

Please rate the degree that the following statements are true for you.

		100% false for me	Probably false for me	Unsure if it is true or false for me	Probably true for me	100% true for me
1	Doing yardwork is dangerous for my back	-2	-1	0	1	2
2	Heavy lifting is dangerous for my back	-2	-1	0	1	2
3	Walking fast is dangerous for my back	-2	-1	0	1	2
4	Housework is dangerous for my back	-2	-1	0	1	2
5	Doing laundry is dangerous for my back	-2	-1	0	1	2
6	Moving Boxes is dangerous for my back	-2	-1	0	1	2
7	Eating is safe for my back	-2	-1	0	1	2
8	Watching TV is safe for my back	-2	-1	0	1	2
9	Reading is safe for my back	-2	-1	0	1	2
10	Relaxing is safe for my back	-2	-1	0	1	2
11	Using the phone is safe for my back	-2	-1	0	1	2
12	Computer use is safe for my back	-2	-1	0	1	2
13	Doing yardwork is safe for my back	-2	-1	0	1	2
14	Heavy lifting is safe for my back	-2	-1	0	1	2
15	Walking fast is safe for my back	-2	-1	0	1	2
16	Housework is safe for my back	-2	-1	0	1	2
17	Doing laundry is safe for my back	-2	-1	0	1	2
18	Moving boxes is safe for my back	-2	-1	0	1	2
19	Eating is dangerous for my back	-2	-1	0	1	2
20	Watching TV is dangerous for my back	-2	-1	0	1	2
21	Reading is dangerous for my back	-2	-1	0	1	2
22	Relaxing is dangerous for my back	-2	-1	0	1	2
23	Using the phone is dangerous for my back	-2	-1	0	1	2
24	Computer use is dangerous for my back	-2	-1	0	1	2