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Pain Location and Functioning in Persons With Spinal Cord Injury

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Abstract

Background—The influence of pain location and extent on functioning in persons with spinal cord injury (SCI) and chronic pain is not well understood.

Objective—To investigate the correlations between pain location and extent to determine which pain domains may be important to assess and potentially target in treating chronic pain in SCI populations.

Design—Prospective, observational study.

Setting—University medical center.

Participants—A total of 259 persons with an SCI and chronic pain.

Methods—Postal mail survey questionnaire.

Main Outcome Measurements—Pain sites, pain extent (number of sites), pain intensity in specific body locations, pain interference, and physical and psychological functioning.

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Results—A positive association between pain extent and intensity with pain interference (r = 0.33, P < .01) and a negative association with psychological functioning were noted in the study sample (r = −0.21, P < .01). Pain intensity in the lower back and legs (r = 0.55, P < .01) and a number of other sites showed strong associations with patient functioning. Correlation with psychological functioning was significant but weaker (r = −0.22, P < .01 for the lower back and legs). Ambulatory status had only a small moderating effect on the associations between pain intensity in specific sites and pain interference and no effect on psychological functioning.

Conclusions—The findings support the importance of assessing pain intensity at specific locations as a part of a thorough evaluation of chronic pain, as well as the importance of addressing pain at multiple sites, when managing pain in persons with an SCI.

INTRODUCTION

Research consistently demonstrates strong associations between the severity of pain and measures of the negative effects of pain on the lives of persons with physical disabilities [1–8]. Chronic pain is a particularly prevalent problem for persons with a spinal cord injury (SCI) [9–21]. Recent studies document that chronic musculoskeletal pain, especially low back pain, is a major problem for up to 50% of patients with an SCI [12,15]. These findings support the need to develop and provide effective pain treatments for persons with SCI-related pain to minimize the negative impact of pain on their lives. More intensive pain assessment for people with an SCI should become part of the overall clinical assessment protocol.

The majority of research in this area has focused and relied on measures of global pain intensity as a predictor of pain interference [22–25]. However, pain is a multidimensional phenomenon that encompasses multiple domains beyond intensity; pain also can be experienced and described in terms of its qualities (eg, burning, electrical, and aching), temporal characteristics (eg, constant and intermittent), and location (eg, low back and legs). It is possible that relying only on global or average pain intensity to understand the impact of pain may be inadequate for evaluating and treating persons with an SCI and chronic pain [26]. This inadequacy is particularly true among persons with an SCI, given that they often describe pain as having a variety of characteristics and being present in more than just one location [14,15].

Recently, Miró et al [8] showed that pain intensity at specific sites contributed to the prediction of pain interference and psychological functioning over and above the effects of global pain intensity in a sample of persons with neuromuscular disorders. Specifically, these investigators found that the intensity of head pain made a significant independent contribution to psychological functioning (when controlling for global pain intensity), whereas pain in the legs, feet, hips, and knees made significant independent contributions to pain interference. As a group, these findings indicate that the location of pain should be part of comprehensive assessment protocols of people in pain, particularly those with chronic pain.

Another domain related to pain location is the extent of pain [27–29]. The extent of pain refers to the total area (or number of sites) with pain [29]. Measures of the extent of pain

have shown positive and significant associations with pain duration, sleep problems, depression, poorer physical and psychosocial functioning, and suffering [29–33].

Given the consistent associations found between the extent of pain and different functioning domains in persons with chronic pain, the extent of pain has been suggested as a more important domain than global pain intensity for assessing and understanding the negative impact of pain [24].

Authors of previously cited research regarding the importance of pain site as a predictor of physical and psychological dysfunction have mostly studied patients with chronic musculoskeletal pain problems. As a result, we know very little about the importance of the site of pain in other populations with pain, such as persons with an SCI and chronic pain. Given the fact that people with an SCI often report pain in multiple sites, it would be worthwhile to understand the importance of pain at specific sites, as well as the importance of pain extent, as predictors of patient functioning in persons with an SCI. Furthermore, given the refractory nature of SCI-related pain, this additional information could also be of value to develop new and effective treatments to manage this pain [19].

The purpose of the current work was to determine the extent to which previous findings regarding pain site and pain extent can be generalized to persons with an SCI and chronic pain. On the basis of previous research in other chronic pain populations, we hypothesized that (1) the extent of pain would be significantly negatively correlated with measures of psychological functioning and positively related to pain interference over and above the effects of global pain intensity and (2) certain pain sites would show stronger associations with measures of patient functioning than would pain at other sites; specifically, that pain in the lower back and legs would evidence stronger associations with pain interference and psychological functioning than would pain at other sites.

In addition, given that many, but not all, persons with an SCI are unable to walk, it is possible that ambulatory status could moderate the association between pain at specific sites (eg, legs and low back), and the impact of pain. That is, it is possible that people with an SCI who are able to walk may demonstrate stronger associations between pain in the low back and legs and measures of psychological and physical dysfunction than do people with an SCI who are not ambulatory. Thus a second aim of this study was to test for the potential moderating effects of ambulatory status on the associations between pain intensity in the legs and low back and the study criterion variables.

METHODS

Participants

All protocols were approved by a University of Washington Human Subjects Institutional Review Board Committee before initiation of the study. Participants were persons with an SCI involved in a postal mail survey that studied pain in persons with an SCI. Some findings based on a subset of the current sample (127 participants who completed the first version of the survey who reported experiencing pain) have been described in previous reports [23]. Informed consent was obtained from all subjects before participation. A total of 759 surveys

were mailed along with consent materials to potential participants to be completed via self-report. Forty-nine surveys were returned because the participant no longer lived at the address on record, 4 participants were identified as deceased, and 1 participant was unable to participate because he/she was living outside the country. A total of 332 surveys were returned to researchers for a return rate of 47% (of the 705 surveys sent to participants who had a reasonable chance of completing the survey, 332 were returned). Participants were compensated $25 for completing the survey, which took approximately an hour to be completed.

Of the 332 surveys returned, only 259 were completed by participants (1) who reported they were experiencing or had experienced any pain in the past 3 months (other than occasional headaches or menstrual cramps) and (2) who had valid data (data from 9 participants could not be analyzed for various reasons and consequently were excluded from further analysis). Subsequently, the 259 participants who reported experiencing pain as described previously with analyzable data constitute the sample for the present analyses. Participants had to meet the following inclusion criteria to be included in the study: (1) be at least 18 years of age; (2) possess the ability to read and write English; and (3) be reported to have a diagnosis of SCI.

Measures

Participants were asked to complete a paper-and-pencil survey that included questions assessing demographic information (ie, age, education, employment status, ethnicity, and marital status) and SCI history information (ie, SCI level, completeness of injury, and date of injury), as well as measures of pain intensity, psychological functioning, and pain interference.

Pain Intensity—A 0–10 numerical rating scale was used to assess the participants' average global pain intensity in the past week. A score of "0" indicated "no pain," and "10" indicated "pain as bad as it could be." The reliability and validity of numerical rating scales as measures of pain intensity have been extensively supported across many different pain populations, including persons with an SCI.

Ambulatory Status—Ambulatory status was measured by the participant's answer to the following yes/no question: "Are you ambulatory?/Can you walk?"

Pain Site and Extent of Pain—Participants reported the locations in which they experienced pain, as well as the intensity of pain at each of these locations. Specifically, they were asked to indicate whether they experienced persistent pain in any of a list of 18 body location categories that included 17 specific locations and an "other" category. The 18 location categories were head, neck, shoulder, upper back, lower back, arms, elbows, wrists, hands, buttocks, hips, chest, abdomen/pelvis, legs, knees, ankles, feet, and "other." To determine the pain extent score for each participant, the total number of pain sites was computed (possible range, 0–18).

Pain Interference—A 12-item form of the Brief Pain Inventory Pain Interference scale, modified for persons with disabilities, including persons with an SCI, was used to measure the degree to which pain interfered with daily activities [34–37]. Participants were asked to

indicate the extent to which pain interfered with each of the 12 activity categories using a 0–10 scale, with "0" indicating "pain does not interfere" with the activity and "10" indicating that "pain completely interferes" with the activity. Higher scores indicate greater pain interference. This version of the Brief Pain Inventory has strong reliability and validity properties as shown through associations with related constructs [23].

Psychological Functioning—The 5-item Mental Health scale of the Short Form–36 (SF-36) was used to assess psychological functioning [38–40]. This measure has shown robust psychometric properties [38]. Scores on the SF-36 Psychological Functioning Scale range from 0–100, with higher scores indicating better psychological functioning.

Statistical Analysis

We first computed the means and standard deviations of the study variables for descriptive purposes. Next, Pearson (zero-order) correlation coefficients among overall (global) pain intensity, pain extent, and pain intensity at each pain site with measures of pain interference and psychological functioning were computed to test the hypothesized associations between the extent of pain and pain intensity at specific sites with the criterion variables. For the correlational analyses involving pain site, we used 2 samples: (1) the sample of SCI participants who reported that they experienced at least *some* pain at the site in question (ranging from 29 participants who reported at least some pain in the chest to 151 who reported at least some pain in the shoulder) and (2) *all* of the study participants, with the pain intensity coded as "0" for each site for participants who did not report any pain at that site. Subsequently, we performed 2 regression analyses to determine whether the extent of pain and pain intensity at specific sites explained unique variance in the criterion variables, as well as to test for the possible moderating influence of ambulatory status on the association between pain intensity in the legs and low back and the criterion variables. The first regression analysis predicted pain interference, and the second one predicted psychological functioning. Global pain intensity was entered in step 1 in these analyses as a control variable. Ambulatory status was entered in step 2. Pain extent and pain intensity at each of the 18 sites were then entered stepwise in step 3 to determine which of these predictors, if any, made unique contributions to the prediction of the criterion variables. If leg pain or low back pain were not entered as predictors in step 3, they were entered in step 4 to allow for a test of the hypothesized Leg Pain × Ambulatory Status and Low Back Pain × Ambulatory Status interactions. Finally, in the last step, we entered the Leg Pain × Ambulatory Status and Low Back Pain × Ambulatory Status interaction terms.

RESULTS

Sample and Study Variable Description

The survey response rate was 37% (259/705); the return rate was 47%. The majority of the study sample were white (90%), male (72%), married or living with a significant other (48%), and had at least a high school education (66% had at least some college education). The average age of the participants when they completed the survey was 46.72 years (SD = 13.24; range = 18–82 years). Demographics are summarized in Table 1. Additional descriptive information about the study sample and variables are presented in Table 2.

The Pearson (zero-order) correlations between pain extent and pain intensity at each of 18 pain sites (17 specific body locations plus the "other" site) and the study criterion variables are presented in Table 3. As can be seen, the first study hypothesis was supported, given that pain extent was positively and statistically significantly correlated with pain interference ($r = 0.33$, $P < .01$) and negatively associated with psychological functioning ($r = -0.21$, $P < .01$). A closer analysis of the correlations showed that the majority were in the moderate range (0.30–0.50). Stronger associations between pain intensity at specific sites and the criterion variables tended to be found in the sample of participants who reported at least some pain at the site in question, although significant associations emerged in both samples. Importantly, many more of the associations were statistically significant (26, or 72% of associations tested) than would be expected based on chance alone if no significant associations were present in the population (ie, 2, or 5% of the associations tested).

Study hypothesis 2 was partially supported. Low back pain showed significant correlations with both outcome measures; the strongest association was with pain interference ($r = 0.55$, $P < .01$), whereas the correlation with psychological functioning, although significant, was relatively weak ($r = -0.22$, $P < .01$). Similarly, pain in the legs showed significant moderate associations with the outcome measures; as was the case for low back pain, the weakest correlation was with the psychological functioning outcome measure.

In the regression analysis predicting pain interference, global pain intensity explained 38% of the variance ($P < .001$; see Table 4). After we controlled for global pain intensity, the patient's ambulatory status predicted a small but statistically significant percent of additional variance in the criterion (1%; $\beta = .11$, $P < .05$). Pain intensity at specific pain sites accounted for an additional 10% of the variance over and above pain intensity and ambulatory status. The sites that contributed significantly to the prediction of pain interference included low back (7% additional variance accounted for), neck (2% additional variance), and legs (1% additional variance).

Multiple regression analyses predicting psychological functioning while controlling for patients' mobility are noted in Table 5. In the regression analysis predicting psychological functioning, overall pain intensity explained 9% of the variance ($P < .001$). Pain intensity at specific pain sites also accounted for an additional 8% of the variance. Ambulatory status contributed an additional 1% of the variance to the prediction of psychological functioning, although this finding was not statistically significant. The sites that contributed significantly to the prediction of psychological functioning after we controlled for pain intensity and ambulatory status included legs (4% additional variance accounted for), neck (2% additional variance), abdomen (1% additional variance), and knee (1% additional variance). No interaction between ambulatory status with leg or low back pain nor pain extent emerged as significant predictors of either criterion variable.

DISCUSSION

Although many persons with chronic pain experience pain at more than one location, research that examines the role that pain plays in patient functioning relies almost exclusively on measures of global pain intensity rather than the intensity of pain at multiple

sites [41–45]. Nevertheless, preliminary findings in a number of pain populations indicate that other domains in addition to average pain intensity might be important to consider when one is seeking to understand the effects that chronic pain exerts on a person. The results of this study add to this literature and support the importance of both pain site and the extent of pain as factors to consider when attempting to explain the influence of pain on patient functioning in persons with chronic pain in general and those with an SCI in particular.

The findings supported the study hypotheses for the most part. First, and as predicted, our data show that pain extent is significantly related to psychological dysfunction and pain interference. Second, we hypothesized that pain in the legs and pain in the lower back would show the strongest associations with pain interference and psychological functioning compared with pain at other sites. Pain intensity in both the legs and lower back showed strong associations with both pain interference and psychological functioning as hypothesized; pain in the lower back demonstrated the strongest relationship with pain interference, whereas pain intensity in the legs showed the strongest association with psychological functioning. However, these sites were only one among a number of pain sites that demonstrated significant and strong associations with pain interference and psychological dysfunction in our sample. Nonetheless, our results demonstrate that pain location plays an important role in the understanding of the effects of chronic pain on the lives of persons with an SCI.

Although we anticipated that ambulatory status might play a moderating role in the relationships studied (with persons who are ambulatory showing a higher likelihood of having pain in the legs or low back influence functioning compared with persons who are not ambulatory), the findings indicate that ambulatory status played only a modest moderating role with regard to pain interference and no moderating role with regard to psychological functioning.

This study is unique in that, to the best of our knowledge, it is the first to examine the importance of pain location to patient functioning in a sample of persons with an SCI and chronic pain. Nevertheless, our findings are consistent with those of other investigators that show that other domains beyond global pain intensity should be considered to fully understand chronic pain and its impact on persons with an SCI. The authors of previous studies noted that patients with an SCI consider the pain to be most disturbing on the basis of a combination of characteristics that go beyond pain intensity alone; specifically, pain interference, pain aggravation, and constancy [46–48]. A recent study showed that the adaptation to pain after an SCI not only depends on patients' coping skills and the social support available to them but also on specific characteristics of the pain: a combination of overall pain intensity, pain aggravation, constancy of pain, and the distribution of pain [46].

The findings from the current study, when considered in light of previous research, have important practical implications. Because assessing pain site and pain extent is relatively easy, there should be no reasonable impediment for using and promoting the assessment of these pain domains along with the most traditional one (ie, overall pain intensity) in clinical work. In addition, evidence supports the conclusion that in people with an SCI, pain continues to be refractory to available treatments [47–49]. The refractory nature of SCI-

related pain may be related to the multiple types of pain that people experience. Patients with an SCI often report pain at more than one location, each of which has its own characteristics and is potentially related to different underlying mechanisms [50,51]. Thus the consideration of multiple pain sites—and possible multiple pain mechanisms—in the design and implementation of treatment programs may help improve pain treatment for these persons.

Furthermore, previous research has shown that the extent of pain is related to pain duration in persons with an SCI; that is, the longer the time with a pain problem, the greater the extent of pain [52–55]. Our results demonstrated that pain extent is related to pain interference and psychological dysfunction. Therefore duration of a pain problem may be an additional important issue to consider in the management of pain in people with an SCI. This finding would suggest that when it comes to helping patients recover from an SCI, a prompt approach in terms of pain management is the ideal.

When the results of this study are interpreted, some limitations should be considered. First, all information was collected through the use of self-report measures, and thus it is possible that some of the significant associations found may be the result of shared method variance. The use of more objective measures of functioning (eg, ratings by significant others) would be useful to consider in future work in this area. Second, we entered a relative large number of potential predictors [19] in our regression analyses after controlling for global pain intensity. A linear model with multiple predictors has become a de facto standard method of analysis in behavioral research [56,57]. However, use of such a model may present some problems because of the complexities of multiple hypothesis testing. The probability of finding at least one significant relationship may be fairly high, even if all null hypotheses are true. This probability is close to theoretical expectations when the sample size (N) is large relative to the number of predictors including interactions (k) [56]. Although our N/k ratio needed to trust the stability of the coefficients was maintained, it is possible that some of the significant relationships found were due to chance. However, the number of significant associations we found far exceeds the number of associations that we could have found by chance alone (26 versus 2, respectively).

Given that site-specific pain intensity data are complicated, we considered that a multivariate analysis may not be optimal for these data. For example, the model may retain lower back pain and not upper back pain, implying that lower back pain is much more important for pain interference. Moreover, the pain intensity scale conflates a binary variable (ie, pain is present or not at a particular site) with a continuous variable (ie, how intense the pain is at that site), making interpretation of results difficult. Rather than 18 unique pain sites, pain at some of the sites could potentially be strongly associated with one another, and therefore the data may provide more useful information if they were combined (via factor analysis) into pain site “clusters.” If so, then having pain in the low back, for example, may be so strongly related to having pain in the upper back that having both is no different than having one. This idea is not entirely consistent with our clinical experience, where it is more typical that persons who report pain in more sites seem to report more disability and distress than do persons who report pain at only one site. However, we thought it would be useful to examine this possibility.

To address these issues and reduce the variable space to a few distinct patterns of pain, the data were subjected to a principal components analysis via 2 strategies. First, a factor analysis was performed, which yielded 6 factors (with Eigen values greater than 1.0). Only the first factor was interpretable. This factor had loadings (>0.30) on all sites, including the "other" site, thus representing overall pain. Thus having pain at any one site appeared to increase the risk for having pain at all other another sites. However, no clear site "clusters" emerged. Factor 2 represented having hip pain but not hand or feet pain (although having hip pain also loaded onto the first factor). Factors 3 and 4 represented having elbow and abdominal pain, respectively (although both also loaded on the first factor). Factors 5 and 6 both represented having "other" pain (ie, pain at a site not specifically listed), while not having neck (factor 5) or elbow (factor 6) pain.

These findings suggest mostly positive but only weak to moderate associations between the individual ratings. We examined this further by computing correlation coefficients between each pair of ratings. As expected, none were so large as to indicate that they represented the same pain problem (all coefficients were <0.60). In fact, only 5 coefficients were larger than 0.50 (hand and wrist, hand and ankle, hand and feet, feet and leg, and feet and ankle pain). On the basis of these findings, which support pain at each site as a distinct measure, we were concerned that including a factor analysis might add more confusion than clarity, and distract from the key finding from our study that the number of sites of pain (even between sites that might show moderate associations) represents a key pain domain with important clinical implications.

A number of pain domains were not included in our assessment in the current study, including pain quality (eg, burning, cold, and itchy pain) and type of pain (eg, peripheral neuropathic, central neuropathic, and nociceptive pain). It is possible and even likely that these pain domains could contribute to patient functioning over and above the domains assessed in the current study. It is also possible that different subjects could have the same pain extent score despite having different types of pain, each of which might affect the subject differently with regard to the temporal course and other characteristics. It is not possible to distinguish the influence of having different types of pains at a given site, given the methodology used. Future research should examine all of these possibilities. Finally, given that the sample was a group of volunteer patients with SCI and chronic pain who were willing to complete a survey, they might differ in some unknown way(s) from persons with SCI who are not willing or interested in participating in a survey study. Thus the extent to which these findings generalize to all patients with SCI and chronic pain is not known. The findings should be replicated in other samples to help establish their generalizability.

CONCLUSIONS

The study findings demonstrate that the characteristics of pain problems of patients with an SCI are heterogeneous and suggest that each pain experienced by the patient should be assessed separately and dealt with appropriately. These findings also support the importance of assessing pain intensity at specific locations as a part of a thorough evaluation of chronic pain in persons with an SCI.

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Table 1

Demographic and clinical characteristics

Age, y	46.72 (SD = 13.24; range = 18–82)
Gender	
Male	72%
Female	28%
Race	
White	90%
Black, Hispanic, Asian, Islander	Each <5%
Marital status	
Married or living with significant other	48%
Education	
High school level	100%
College	66% (at least some or completed)

SD = standard deviation.

Table 2

Mean and standard deviations for study measures (N = 259)

Variable	Mean (SD)
Pain extent (1–18)	7.21 (3.23)
Global average pain intensity (0–10 NRS, 0–10)	5.21 (2.43)
Psychological functioning (MHI-5, 0–100)	69.36 (18.88)
Pain interference (BPI, 0–10)	3.40 (2.64)
Average pain intensity at each site (0–10)*	
Head	0.73 (2.12)
Neck	1.90 (2.74)
Shoulder	2.94 (3.12)
Upper back	2.15 (2.97)
Lower back	3.21 (3.26)
Arms	1.44 (2.66)
Elbows	0.90 (2.25)
Wrists	1.22 (2.31)
Hands	1.56 (2.66)
Buttocks	2.61 (3.36)
Hips	2.22 (3.18)
Chest	0.55 (1.76)
Abdomen/pelvis	2.08 (3.10)
Legs	2.70 (3.25)
Knees	1.61 (2.88)
Ankles	1.24 (2.58)
Feet	2.20 (3.19)
Other	0.54 (1.93)

SD = standard deviation; 0–10 NRS = 0 to 10 numerical rating scale of pain intensity; MHI-5 = Mental Health Scale from the Short Form–36; BPI = Modified Brief Pain Inventory Pain Interference scale.

*For all (N = 259) study participants, including those who reported no pain at the site.

Table 3

Pearson (zero-order) correlation coefficients between overall (global) pain intensity, pain extent, and pain intensity at each pain site and measures of pain interference and psychological functioning

		Pain Interference (BPI)		Psychological Functioning (MHI-5)
Pain extent		0.33*		−0.21*
Global pain intensity (0–10 NRS)		0.62*		−0.30*
Pain intensity at each pain site (n)	Entire sample (N = 259)	Only those with pain at that site, n	Entire sample (N = 259)	Only those with pain at that site, n
Head (36)	0.29*	0.36†	−0.19*	−0.06
Neck (105)	0.31*	0.44*	−0.20*	−0.22†
Shoulder (151)	0.18*	0.43*	−0.04	−0.23*
Upper back (106)	0.29*	0.38*	−0.16†	−0.13
Lower back (150)	0.46*	0.55*	−0.21*	−0.22*
Arms (75)	0.28*	0.42*	−0.17*	−0.24†
Elbows (48)	0.12	0.46*	−0.02	−0.14
Wrists (68)	0.14†	0.35*	−0.01	−0.21
Hands (85)	0.18*	0.40*	−0.12†	−0.28*
Buttocks (113)	0.36*	0.49*	−0.22*	−0.28*
Hips (99)	0.21*	0.47*	−0.18*	−0.33*
Chest (29)	0.16†	0.34	−0.10	−0.15
Abdomen/pelvis (96)	0.33*	0.35*	−0.24*	−0.27*
Legs (121)	0.39*	0.43*	−0.32*	−0.32*
Knees (74)	0.24*	0.23†	−0.12†	−0.17
Ankles (60)	0.29*	0.30*	−0.20*	−0.21
Feet (103)	0.28*	0.43*	−0.15†	−0.26*
Other (22)	0.12	0.37	−0.13†	−0.24

BPI = Modified Brief Pain Inventory Pain Interference scale; MHI-5 = Mental Health Scale from the Short Form–36; 0–10 NRS = 0 to 10 numerical rating scale of pain intensity.

*$P < .01$.

†$P < .05$.

Table 4

Multiple regression analyses predicting pain interference while controlling for patients' mobility

Step and Variables	Total R^2	R^2 Change	F Change	β
1. Average pain intensity in previous week	0.38	0.38	160.12*	0.62
2. Ambulatory status	0.39	0.01	5.55*	0.11
3. Lower back	0.46	0.07	33.16*	0.28
4. Neck	0.48	0.02	9.47†	0.14
5. Leg	0.49	0.01	6.44†	0.12

*$P < .001$.

†$P < .05$.

Table 5

Multiple regression analyses predicting psychological functioning while controlling for patients' mobility

Step and Variables	Total R^2	R^2 change	F change	β
Average pain in intensity	0.09	0.09	26.01*	−0.30
Ambulatory status	0.10	0.01	3.35	−0.11
Leg	0.14	0.04	13.66*	1.23
Neck	0.16	0.02	5.48†	−0.13
Abdomen	0.18	0.01	4.46†	−0.13
Knee	0.19	0.01	4.09†	0.149

*$P < .001$.

†$P < .05$.