Sex Differences in Pain and Psychological Functioning in Persons with Limb Loss

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Abstract

Sex differences in pain are frequently reported in the literature. However, less is known about possible sex differences in the experience of pain secondary to a disability. The current study explored these issues in persons with limb loss (N = 335, 72% men) who were recruited as part of a postal survey. Participants provided ratings of phantom limb pain (PLP), residual limb pain (RLP), and general pain intensity. Participants also completed measures of pain-related interference, catastrophizing, coping, and beliefs. Results indicated that a greater proportion of males than females (86% vs. 77%, respectively) reported the presence of PLP; however, this difference was no longer prominent when cause of limb loss was controlled. No sex differences were found in the presence of RLP, or in average intensity ratings of PLP or RLP. In contrast, females reported greater overall average pain intensity and interference than males. Females also endorsed significantly greater catastrophizing, use of certain pain coping strategies, and beliefs related to several aspects of pain. This study did not find prominent sex differences in pain specific to limb loss. However, several sex differences in the overall biopsychosocial experience of pain did emerge that are consistent with the broader literature.

Perspective—The current study contributes to the literature on sex differences in the experience of pain. Although males and females with limb loss did not significantly differ in their disability-specific pain, sex differences in their broader experience of pain were significant and are worthy of future clinical and empirical attention.

Keywords

Introduction

Pain is common in persons with acquired limb loss and is often present in more than one site[8,31,32,53]. Two types of pain that are a direct consequence of limb loss are phantom limb pain (PLP) and residual limb pain (RLP). PLP refers to painful sensations in the missing portion of the amputated limb. RLP is pain that originates in the residual portion of the limb (i.e., the stump). Prevalence data for PLP and RLP vary across studies; however, several reports suggest that both types of pain occur in 50% or more of persons who undergo amputation[8,32,53,63]. In addition to pain directly associated with amputation, individuals with limb loss frequently experience pain in other areas. In one survey study, participants who had undergone lower limb

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amputation reported pain in the back (52%), non-affected lower extremity (43%), buttocks/hips (37%), neck/shoulders (31%), arms/hands (24%), abdomen (12%), and head (8%)[8].

Pain in persons with limb loss can interfere with valued life activities. Many describe such pain as highly bothersome and disabling[8]. In addition to physiological factors, psychosocial variables are associated with pain and functioning in these individuals. The emergence of biopsychosocial models of chronic pain and disability highlights the importance of such factors[44]. Specifically, an individual's overall emotional health, pain coping responses, and pain-related attitudes and beliefs are especially important in the context of a potentially disabling condition, including limb loss[13,18,19,28].

The broader pain literature has found sex to be important when understanding pain severity and impact. Epidemiologic and experimental studies indicate that a greater proportion of females than males report pain[41,50], although findings concerning sex differences in pain-related functional impairment are less consistent[1,5,17,38]. Sex differences have also been investigated in regards to several important psychosocial factors. In the domain of psychological functioning, some research has found no significant differences between males and females with chronic pain[7,17,43], although when differences are found, females endorse more psychological problems than males[11,37,59]. Females also generally report using a greater number of pain coping strategies[19,59,60] and report engaging in pain catastrophizing more often[35,55,57] than similar males.

Although sex differences in pain and psychosocial factors have been investigated in the broader pain literature, relatively little is known about how males and females with acquired limb loss may differ in this respect. Sex differences are sometimes investigated in secondary and/or exploratory analyses, but these analyses typically lack corresponding *a priori* hypotheses. The available literature does suggest, however, that males and females with limb loss may differ on variables such as pain, physical functioning, and emotional well-being[4,33,65]. Additional research in this area is needed, since identification of systematic sex differences in the experience of pain in persons with limb loss could have valuable theoretical and treatment implications.

The purpose of the current study was to investigate sex differences in pain intensity, pain interference, and pain-related coping and beliefs in persons with limb loss. Amputation-related and general pain intensities were examined given the prevalence of both types of pain in this population. The psychosocial variables of interest were selected due to their previous identification as important considerations in the context of sex differences, pain, and disability. Female participants were hypothesized to report greater pain intensity (amputation-related and general) and pain interference. Females were also expected to report using a greater number of pain coping strategies and engaging in more frequent pain catastrophizing. Specific hypotheses were not proposed regarding sex differences in pain beliefs, given the absence of previous theoretical and empirical attention to this topic. A summary of findings from this study was presented as a poster at the annual meeting of the American Pain Society[15].

Materials and Methods

Participants and procedures

Adults (18 years and older) with limb loss were eligible to participate in the study if they had an acquired amputation and were able to read and write in English. Potential participants were recruited from several sources, including those who had participated in either of two previous surveys of persons with limb loss[8,48] and who had indicated on the surveys that they were willing to be notified about future research opportunities (n = 592). Participants also included those who had previously participated in other UW studies (n = 15), those who had contacted

study personnel seeking research opportunities (n = 32), and those from an amputation listserve advertising research opportunities (n = 13). Three potential participants were from unidentified sources.

Three weeks prior to the scheduled survey mailing a pre-postcard was mailed to the 655 prospective participants. This postcard informed them that they would receive a postal survey and gave them contact information if they had questions or wanted to decline the survey. Surveys were not mailed to 83 persons who were identified as deceased (n = 29), who declined (n = 22), who were identified as ineligible (n = 2), or whose address was incorrect (returned by the postal service as undeliverable; n = 30). The remaining 572 potential participants were mailed a packet that included the cover letter, consent form, HIPAA authorization form, survey, and two self-addressed stamped envelopes in which to return the survey (one envelope) and consent/HIPAA forms (second envelope). Respondents were paid $25 for completing and returning the consent forms and survey. Reminder postcards were mailed to all potential participants who had not returned a survey three weeks after the survey mailing. A total of 335 persons completed the surveys, representing a return-rate of 56.2%. The study procedures were approved by the University of Washington Human Subjects Review Committee, and informed consent was obtained from all participants.

Measures

Demographic and Amputation History—Participants provided information about their sex, age, race/ethnicity, education level, and employment status. Information was also elicited about participants' amputation, including date of amputation, affected limb, number of surgeries/revisions, and ambulatory ability. Participants were also asked to indicate the medical reason for amputation; choices included tumor, diabetes, vascular disease (not diabetes), injury (traumatic), congenital, infection, gangrene, and other. Multiple responses were permitted because limb loss may be the result of a series of complicated factors. For statistical purposes, these responses were coded as "trauma" and "other."

Pain Presence and Intensity—Two items assessed the presence of amputation-related pain. Participants were asked about the presence of pain related to their phantom and residual limbs ("Do you have persistent, bothersome pain in your ———"), to which they responded affirmatively ("yes"), negatively ("no"), or with uncertainty ("don't know"). Pain intensity ratings were completed in regards to phantom limb pain (PLP), residual limb pain (RLP), and overall pain. Participants rated their average pain intensity in the past week for each of these domains. For overall pain, the instructions read: "We realize you may have pain in different locations, but we want you to rate your pain **in general**." Ratings were provided on 11-point numerical rating scales (NRSs) anchored at 0 (no pain) and 10 (pain as bad as could be). These scales were adapted from the pain intensity items of the Chronic Pain Grade[61]. NRSs for pain intensity are widely used in pain research and demonstrate good psychometric characteristics[22,24].

Pain Interference—Pain interference was assessed using a modified version of the Brief Pain Inventory (BPI) Pain Interference Scale[2,3]. The original BPI assesses the degree to which pain interferes with seven activities of daily living: general activity, mood, normal work, walking, relations with other people, sleep, and enjoyment of life. Since some participants in the current study were non-ambulatory, the walking item was modified to assess interference with mobility (ability to get around). Five additional items assessing pain interference with self-care, recreational activities, social activities, communication with others, and learning new information and skills were also added to increase the breadth of the assessment of pain-related interference in important activities. These items extend the functional domains assessed by the measure to those defined as relevant and unique by the World Health Organization's (WHO)

International Classification of Functioning (ICF), Disability, and Health66. Participants provided ratings of pain interference in these twelve domains on an 11-point NRS anchored at 0 (does not interfere) and 10 (completely interferes). A total score is calculated by averaging the item ratings. The modified BPI has been used in previous studies on pain in persons with disabilities and has demonstrated good psychometric properties13,21,45,46,49,58.

Psychological Functioning—General psychological functioning was measured by the SF-36 Mental Health scale (SF-36 MH)[62]. This 5-item scale is widely used and has demonstrated strong psychometric properties62. The SF-36 MH has also been found to be associated with other indices of psychological functioning, such as life dissatisfaction, depression, suicidal ideation, and mental health care62. The 5 items from this measure were transformed to a 0–100 scale, with higher scores indicating better psychological functioning.

Pain Catastrophizing—The Coping Strategies Questionnaire Catastrophizing scale (CSQ-CAT)[52] was used to assess pain-related catastrophizing. This scale measures helpless and pessimistic cognitions related to the experience of pain. Participants indicated the frequency of these cognitions on a 7-point scale anchored at 0 (never) and 6 (always). These ratings were then averaged to yield the scale score. The CSQ-CAT is widely cited in the pain literature and has demonstrated good psychometric properties in previous research34,51.

Pain Coping—Use of coping strategies to manage pain was assessed with the Chronic Pain Coping Inventory (CPCI)30. The original CPCI contains 65 items and assesses the following eight domains of coping: Guarding, Resting, Asking for Assistance, Relaxation, Task Persistence, Exercise/Stretching, Coping Self-Statements, and Seeking Social Support. The 2-item per scale version of the CPCI25 was administered in the current study. Consistent with other studies in persons with disabilities (e.g., Molton et al39), the Exercise scale of the CPCI was not administered since the individual items were likely not to be appropriate for persons with limited mobility. In addition, items from the Pacing domain42 were included in the current study. Participants indicated the number of days in the past week (0–7) that they used these strategies at least once to cope with pain. Subscale scores represent the computed average of the item ratings for each domain. The CPCI has demonstrated good psychometric properties in previous research12,25,30,56.

Pain Beliefs—The Survey of Pain Attitudes (SOPA)23,29 was administered to assess pain-specific beliefs associated with the adjustment to chronic pain. The original SOPA contains 57 items and consists of the following seven subscales: Control, Disability, Harm, Emotion, Solicitude, Medical Cure, and Medication. The 2-item per scale version of the SOPA25 was used in the current study. Participants indicated the extent to which they agree with each of the pain belief items on a scale from 0 (this is very untrue for me) to 4 (this is very true for me). Subscales are calculated by averaging the corresponding item ratings. Previous research has shown the SOPA to possess strong psychometric characteristics23,25,29,54.

Statistical Analyses

Visual inspection and statistical testing (not presented) indicated that most of the variables of interest did not satisfy normality assumptions for parametric statistical analyses. Therefore, non-parametric procedures were used as described below. Descriptive statistics were conducted on the study variables. Sex differences were examined with the Chi-Square (categorical data) and Mann-Whitney U (continuous data) tests. Due to the large number of analyses, an alpha level of .01 was adopted, which is more conservative than the traditional .05 level but less severe than a Bonferroni correction. This alpha was adopted because it balanced the need to control for type 1 error inflation (associated with numerous analyses) with our desire not to prematurely dismiss certain variables from future research consideration that may

indeed be important (but that did not meet the strictest criterion for statistical significance). Results of analyses that met the traditional p <.05 standard are also presented for consideration but should be interpreted with caution. Effect sizes were also calculated as appropriate for each statistical test.

Results

Demographic Characteristics

Of the 335 participants, the vast majority were male (72%), which is consistent with the higher frequency of males found in epidemiologic reports on acquired limb loss[6,67]. Ninety-two percent of participants self-reported as Caucasian, and the average age of the sample was 58.89 (SD = 14.07) years. Most (61%) were currently married, and 93% of participants reported having at least a high school diploma or GED. In terms of employment, 46% of participants were retired, while 38% percent indicated they were currently unemployed due to a disability and/or pain condition. The remainder reported currently working full-time or part-time. No sex differences were found for any of these demographic characteristics with the exception of marital status; a greater proportion of male participants (68%) than female participants (42%) were currently married (χ^2 = 19.20, df = 1, p <.001, ϕ =.24).

Limb Loss Characteristics

Lower extremity limb loss was the most commonly reported level of amputation in this sample (n = 330, 99%). Sixteen participants (5%) reported having undergone amputation involving the upper extremity; 11 of these participants also sustained a lower extremity amputation and were included in the frequency count above. No significant sex differences were found for amputation site. Male participants [mean = 20.10 (16.81) years, median = 13.26] reported having lived with limb loss for a longer period of time than female participants [mean = 16.13 (14.59) years, median = 9.60], but this was not a statistically significant difference (*U* = 9522.50, z = −2.18, p <.05). Moreover, duration of limb loss was not significantly associated with the primary variables of interest (data not presented). The etiology of limb loss (trauma vs. other) did differ significantly between male and female participants. Approximately 85% of males compared to 60% of females (χ^2 = 15.40, df = 1, p <.001, ϕ =.26) with a lower extremity amputation indicated that the cause of their limb loss was a traumatic injury; this is consistent with epidemiologic data indicating that males are at greater risk of trauma-related amputations[6]. No sex difference emerged for the cause of upper extremity limb loss; however, these results should be interpreted with caution given the small number of upper extremity amputations in the current sample. Study participants reported an average of 2.88 (SD = 4.15) limb-loss related surgeries, and there was no significant difference between males and females. Sex differences were found on participants' ability to ambulate, with a greater proportion of males (91%) than females (80%) indicating that they were able to walk (χ^2 = 7.31, df = 1, p <. 01, ϕ =.15).

Pain Related to Limb Loss

Pain related to limb loss was operationalized as pain associated with a phantom limb (PLP) and/or residual limb (RLP). Both the presence and intensity of PLP and RLP were assessed (Table 1). Although a greater proportion of males than females reported the presence of PLP (86% vs. 77%, respectively; χ^2 =7.02, df = 2, p <.05, ϕ_c =.15), this difference was no longer prominent when cause of limb loss (trauma vs. non-trauma) was controlled. No sex difference was found for the presence of RLP. Male and female participants also did not significantly differ in their average (past week) intensity ratings of PLP or RLP. Finally, regarding pre-amputation pain, a greater proportion of females than males reported the presence of pain in the affected limb prior to limb loss (60% vs. 47%, respectively; χ^2 = 4.48, df = 1, p <.05, ϕ_c =.

12); however, pre-amputation pain was not significantly associated the presence or intensity of PLP or RLP.

Overall Pain and Pain Interference

Overall pain was assessed by asking participants to rate their average overall (i.e., general) pain intensity over the past week. General pain interference was assessed using the BPI Interference scale. Descriptive data for overall pain intensity and interference are presented in Table 1. Sex differences approached significance for both of these domains, with females reporting greater average pain intensity ($U = 5821$, z = −1.94, p =.05) and interference than males ($U = 5520$, z = −2.49, p <.05).

Psychological Functioning

The mean score on the SF-36 MH for the entire sample was 73.28 (SD = 18.87, Median = 80). Female participants scored slightly lower than males on this scale, but this difference was not statistically significant.

Pain Catastrophizing and Coping

Compared to males, female participants reported significantly greater pain catastrophizing as measured by the CSQ-CAT ($U = 5198.50$, z = −3.09, p <.01). Females also endorsed significantly greater use of coping self-statements (CPCI-Coping Self-Statements; $U = 5008.50$, z = −3.21, p <.01). In addition, reported greater use of coping strategies related to resting (CPCI-Resting scale; $U = 5505.50$, z = −2.41, p <.05), relaxation (CPCI-Relaxation scale; $U = 5605.50$, z = −2.09, p <.05), social support (CPCI-Seeking Social Support scale; $U = 5505$, z = −2.28, p <.05), and pacing (CPCI-Pacing scale; $U = 5475$, z = −2.45, p <.05); however, these differences were not statistically significant. No significant sex differences emerged for the CPCI scales of Guarding, Asking for Assistance, or Task Persistence. Table 1 contains additional data on these measures.

Pain Beliefs

Analyses of participants' pain-related beliefs as measured by the SOPA indicated the presence of significant sex differences in two domains (Table 1). Specifically, females were significantly more likely than males to endorse beliefs related to personal control over pain (SOPA-Control scale; $U = 5254$, z = −2.99, p <.01) and the appropriateness of solicitous responses from others (SOPA-Solicitude; $U = 5201.50$, z = −2.95, p <.01). Females were also slightly more likely to endorse beliefs related to the appropriateness of the use of medication for pain management (SOPA-Medication scale; $U = 5627.50$, z = −2.31, p <.05). No significant sex differences emerged for the other SOPA scales.

Discussion

The current study investigated sex differences in the pain experience of persons with limb loss. In this large survey sample, we found no significant sex differences in the presence or intensity of amputation-related pain (i.e., PLP and RLP). Female participants did, however, report greater overall pain intensity and pain interference relative to male participants, which is consistent with the literature. Based on biopsychosocial models of chronic pain and disability[43], several other domains of functioning were also examined in this study. The results indicated that females endorsed significantly greater pain catastrophizing and use of several adaptive and maladaptive pain coping strategies. Moreover, females with limb loss in the present study were significantly more likely to endorse several beliefs about pain that have previously been identified as predictors of poor adjustment to chronic pain29.

Our hypotheses concerning sex differences in pain intensity were only partially supported. The lack of sex differences in PLP and RLP is consistent with previous, smaller studies that tested for sex differences in ancillary analyses[14,32,36]. Taken together, these data suggest that sex differences are not a robust phenomenon in the context of amputation-related pain, particularly after accounting for any sex differences in the reason for amputation. In contrast, differences between male and female participants did emerge for general pain intensity, although this did not meet the strict statistical criterion ($p < .01$) adopted for this study. These results are also in line with the large literature indicating that females are more sensitive to experimental pain stimuli and are overrepresented among those who report clinical pain problems[41,50]. To our knowledge, this is the first study to specifically test for sex differences in amputation-related and general pain in the same sample. As such, additional research is needed before strong conclusions can be drawn; however, it does appear that sex is a potentially important variable of consideration in the context of pain intensity in persons with limb loss.

Females in the current study also reported slightly greater pain interference in activities of daily living than males. In the broader, non-amputation pain literature, relatively little has been published about sex differences in pain-related functional impairment. The studies that have been reported to date have yielded mixed results[1,5,17,38]. Sex differences in pain interference in persons with limb loss have received even less empirical attention. One study did examine the impact of limb amputation on multiple indices of quality of life and found that females reported worse status than males with respect to physical disability[4]. However, that study did not assess functional impairment related to pain and, thus, cannot directly speak to the sex differences in pain interference observed in the current study. These two studies do suggest, however, that females may be particularly vulnerable to the negative functional consequences of pain and limb loss.

In the psychosocial domain, several notable similarities and differences emerged between male and female participants. Males and females reported similar levels of psychological functioning, which is inconsistent with the results of two smaller studies that examined this issue in persons with limb loss[33,47]. The non-amputation pain literature also contains several studies in which females with chronic pain manifested greater negative mood than males[11,37,59]; however, such sex differences are not always found[7,17,43]. At this point, it seems premature to draw any strong conclusions about sex differences in mental health outcomes following amputation; further research is needed to better understand this relationship.

Consistent with our hypotheses, females reported greater pain catastrophizing than males. Previous research has found catastrophizing to be associated with negative mood and poorer adjustment to pain[16,55], including among persons with amputation-related pain[13,20]; thus, the sex difference observed herein could be particularly important. These results are also in accordance with previous research in non-amputation samples that has found females with chronic pain report more frequent catastrophic cognitions than males[35,55]. We are not aware of any research to date that has examined sex differences in pain catastrophizing in persons with limb loss. Although continued work in this area is warranted, the current data do suggest that females who have undergone limb amputation may manifest negative psychological sequelae to a greater degree than their male counterparts.

Also consistent with prior investigations[19,59,60], females in the current study endorsed greater use of several pain coping strategies compared to males. This greater use of pain coping strategies in general may be a consequence of females' greater overall pain intensity. Several of the coping strategies that females endorsed to a greater degree than males are considered adaptive responses to pain and therefore encouraged, specifically those related to relaxation, pacing, and coping self-statements[12,30]. However, females also reported more resting strategies, which are typically not adaptive. These sex differences in coping strategies are

important, since it is understood that how one copes with pain – in particular, the frequency of maladaptive coping strategies – is an important determinant of adjustment to chronic pain[10, 26]. Building on the current results, future research could examine whether males and females with limb loss differentially evaluate the effectiveness of these various pain coping strategies, as such information could have valuable clinical implications.

Another important element of the biopsychosocial model of pain concerns an individual's beliefs about the pain experience[44]. There is a lack of previous theoretical and empirical work on the topic of sex differences in this area; thus, the current study makes a notable contribution to the literature. Female participants in the current sample endorsed greater beliefs regarding personal control over pain, the appropriateness of medication use for pain management, and the appropriateness of solicitous responses from others. With the exception of those concerning personal control over pain, these beliefs are associated with poorer adjustment to chronic pain[29]. Females' endorsement of greater beliefs regarding personal control over pain may be related to their more frequent use of a wide array of pain coping strategies, since individuals who view pain as controllable would be expected to attempt to exert such control via multiple coping strategies. These positive characteristics of female participants were unfortunately tempered by their greater maladaptive beliefs about pain, the effects of which may be particularly detrimental[10,27].

In the broadest sense, these data reaffirm the relevance of a biopsychosocial conceptualization of pain in persons with limb loss. Moreover, although not identical, the nature of the sex differences observed in this study were generally consistent with those found in other chronic pain conditions[9]. Females with limb loss who experience chronic pain appear to be particularly susceptible to various negative sequelae of this condition. Two possible reasons for this increased risk in females with limb loss pertain to gender-specific socialization patterns[40] and cultural norms surrounding beauty[65]. Although not assessed in the current study, it is possible that differences in how males and females are expected to manage pain and negative mood influence their adjustment following amputation. In addition, the implications of permanent "disfigurement" may be very different for males and females, which may influence their experience of pain. Future research is needed to test these speculations.

Several limitations of the current study should be considered. First, those who responded to the survey (56% response rate) could differ in important ways from non-responders. Similarly, it is possible that the current sample is not representative of the overall population of individuals with limb loss. Second, the study sample lacked racial and ethnic diversity and, thus, may be less relevant to non-Caucasian individuals. Third, this study relied exclusively on self-report measures of pain and psychosocial variables, which may be subject to reporting bias. Fourth, due to the wording of the assessment instruments, we were not able to conduct a more fine-grained analysis of certain variables. For example, the pain interference measure did not specify whether this interference was due to amputation-related or general pain. Pain interference in each of these domains could be distinguished in future research with small modifications to the instrument instructions. Finally, out of consideration for participant burden, we assessed only a small number of psychosocial variables. These variables were selected because they were previously identified as important considerations in the context of sex differences, pain, and disability. Nevertheless, other potentially important variables (e.g., depression, social support, self-efficacy) were omitted from this study and could be explored in future research.

Despite these limitations, the findings from this study suggest that important sex differences exist in the experience of pain in persons with limb loss. These results may have implications for clinical practice and are also suggestive of future research directions in this population.

Acknowledgments

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Table 1

Descriptive data on pain and psychosocial characteristics for male and female participants

Variable	% or Mean (SD)		Median	
	Male	Female	Male	Female
PLP				
Presence (% yes)[†]	86	77		
Intensity (past week)	5.27 (2.73)	5.33 (3.29)	5.00	5.00
RLP				
Presence (% yes)	63	67		
Intensity (past week)	4.93 (2.73)	5.34 (2.99)	5.00	5.00
Overall Pain Intensity (past week)[†]	4.63 (2.62)	5.33 (2.56)	4.00	5.00
Overall Pain Interference (BPI)[†]	2.69 (2.44)	3.41 (2.52)	2.17	2.96
Mental Health (SF-36)	73.91 (19.64)	71.61 (16.66)	80.00	76.00
Catastrophizing (CSQ)[*]	1.79 (1.34)	2.36 (1.29)	1.67	2.50
CPCI subscale				
Guarding	3.65 (2.52)	3.54 (2.46)	3.56	3.89
Resting[†]	2.33 (2.10)	3.16 (2.47)	2.00	3.00
Asking for Assistance	1.96 (2.08)	2.55 (2.51)	1.38	2.00
Relaxation[†]	1.74 (1.97)	2.55 (2.51)	1.00	2.00
Task Persistence	4.30 (2.26)	4.52 (2.15)	4.67	5.00
Seeking Social Support[†]	1.69 (1.89)	2.51 (2.38)	1.00	1.88
Coping Self-Statements[*]	2.60 (2.31)	3.82 (2.82)	2.41	4.27
Pacing[†]	3.16 (2.28)	3.93 (2.29)	3.08	4.18
SOPA subscale				
Control[*]	1.93 (.94)	2.34 (.92)	2.00	2.20
Disability	1.87 (.79)	2.05 (.76)	2.00	2.00
Harm	1.97 (.91)	1.98 (.80)	2.00	2.00
Emotion	1.56 (1.06)	1.82 (1.20)	1.50	2.00
Medication[†]	2.65 (1.09)	2.97 (1.02)	2.67	3.00
Solicitude[*]	1.29 (1.07)	1.75 (1.19)	1.00	1.67
Medical Cure	1.38 (.94)	1.52 (1.08)	1.39	1.50

Abbreviations: SD – standard deviation, PLP – phantom limb pain, RLP – residual limb pain, BPI – Brief Pain Inventory, CSQ – Coping Strategies Questionnaire, CPCI – Chronic Pain Coping Inventory, SOPA – Survey of Pain Attitudes

Note: sex difference at

[†] $p < .05$

[*] $p < .01$