Reconceptualization of pain is often achieved by teaching patients more about the biological and physiological processes involved with their pain experiences versus focusing solely on tissue pathology. Pain reconceptualization attempts to help patients understand that pain and tissue injury are different constructs (Moseley, 2004, 2005; Moseley, Nicholas, and Hodges, 2004).

One way to help patients understand that pain and tissue injury are different is educating them about normative values regarding various pathologies. For example, explaining to a patient that 40% of healthy people with no LBP, when given a lumbar magnetic resonance imaging (MRI) study, would be found to have a ‘bulging disc’, yet experience no pain (Masui et al., 2005; Videman et al., 2003; Yukawa et al., 1996), may help LBP patients better manage their condition. It is postulated that normative values presented to patients in this way may help patients see their tissue injury and imaging test results as less significant, reducing threat and assisting recovery (Louw and Butler, 2011). Intertwined in the presentation of normative values is a potential for cognitive dissonance that may additionally help patient’s experience a significant cognitive shift and facilitate recovery. Creating a cognitive dissonance that injury and pain are not linearly related items, as presumed by traditional Cartesian thinking, can help with changing these commonly held beliefs of pain and injury.

It is well established that physical therapists (PTs) have similar rates of LBP when compared to the general population, averaging
~80% lifetime prevalence (Adegoke, Akodu, and Oyeyemi, 2008; Rozenfeld et al, 2010; Shehab, Al-Jarallah, Moussa, and Adham, 2003). Within this data exists the potential irony of PTs with LBP treating patients with LBP. By gaining a realization that PTs, despite similar LBP prevalence as patients attending PT for LBP treatment, continue to work and generally seek little or no care, may help patients develop a greater understanding that LBP may not be as self-limiting as previously thought. To date PT LBP studies, however, have focused heavily on factors leading to and clinical settings associated with development of LBP in physiotherapists (Adegoke, Akodu, and Oyeyemi, 2008; Rozenfeld et al, 2010; Shehab, Al-Jarallah, Moussa, and Adham, 2003). Very little is known in regards to PTs LBP experiences in regards to treatment seeking behaviors, self-care, imaging or prevalence of LBP while treating patients with LBP. The aim of this study was therefore to develop, validate and administer a questionnaire to PTs in regards to their LBP experiences, treatments received, diagnoses and associated patient LBP episodes. It is proposed that the normative information gained from this study could potentially serve as a reference point for discussion during PNE in order to facilitate a reconceptualization of a patient’s LBP experience.

**Methods**

**Questionnaire development**

Since no similar studies have been conducted, a PT LBP questionnaire was developed in line with the goals of the study. The questionnaire was designed using previous PT LBP studies (Adegoke, Akodu, and Oyeyemi, 2008; Mierzejewski and Kumar, 1997; Rozenfeld et al, 2010; Shehab, Al-Jarallah, Moussa, and Adham, 2003) and objectives of the study (Appendix 1). Section 1 of the questionnaire gathered demographic and practice information from the responding PTs. Section 2 gathered information regarding their past LBP prevalence, imaging, treatments received and current LBP prevalence. The final section focused on LBP while treating patients with LBP. To establish face and content validity, the draft questionnaire was sent to a panel of 12 national and international experts in the fields of patient education, questionnaire design and LBP (Powell, 2003). Experts were asked to provide feedback on the content and completion of the PT LBP questionnaire and return comments in 2 weeks. At the completion of 2 weeks, a reminder e-mail was sent to panelists if they had not completed the accompanying checklist for the survey. If 70% agreement was obtained by the expert panel, the survey was deemed ready for the next phase (Louw, Butler, Dienert, and Puenteleda, 2012; Powell, 2003). Following expert review, small grammatical punctuation and spacing changes were made, deeming it ready for use. A pilot study comprising a convenience sample of 10 PTs was conducted to review the content, the ease of completion and the time it took to complete the questionnaire (10 min). The convenience sample was obtained from volunteers attending a weekend seminar consisting of six female therapists, all having obtained a doctorate in physical therapy (DPT) with an average clinical experience of 5.4 years.

**Questionnaire distribution**

To survey a representative sample of PTs in the US involved in the management of patients with LBP, it was decided to distribute the questionnaire to attendees of an international PT orthopedic/pain conference in the US. Independent Internal Review Board (IRB) approval from the University of South Dakota was obtained for the study along with written consent from the organizing committee of the conference. The questionnaire was administered to one large lecture room of attendees at the conference and individuals were asked to complete the questionnaires and return to the research team. This methodology of questionnaire distribution is well documented and used in previous studies (Dipola et al, 2009; Sprague, Quigley, and Bhandari, 2009; Whang, Simpson, Rechtine, and Grauer, 2009).

**Statistical analysis**

The questionnaire data was entered in an Excel spreadsheet and statistical testing was performed using SPSS software (SPSS 16.00, SPSS Inc., Chicago, IL). Descriptive statistics such as counts and percentages, frequency distributions, means, standard deviations and confidence intervals were used to describe variables. Some pre-specified comparisons were made between certain variables, including age, gender, years of clinical experience, highest degree obtained and specialty certification. The variables were based on the demographics captured in the survey. Where both variables were categorical, contingency analysis was used to detect association. Both the $\chi^2$ and Fisher’s exact test were used. $T$-tests or analysis of variance (ANOVA) were used to detect significant differences in means between continuous variables. Statistical significance was set at $p < 0.05$. Where the assumptions of normality were violated, the non-parametric equivalents were used to analyze the data.

**Results**

A total of 110 out of the 155 (71%) PTs attending the lecture, representing Canada and 21 states of USA, completed the questionnaire. The demographic information regarding the PTs can be found in Table 1.

The PTs personal experiences with LBP are captured in Figure 1. Ninety percent of the PTs reported having experienced LBP before, with 27% currently experiencing LBP while attending the conference (mean NRS score 2.2/10). The majority of therapists had not received any formal diagnosis, medical tests/ imaging, formal treatment or missed work due to LBP. Thirty-six therapists completed the question regarding what they do when they experience LBP. The most common strategies consisted of ‘‘treating themselves’’ (39%), ‘‘performing back exercises’’ (25%) and ‘‘doing nothing about it’’ (19%). Of those therapists that had missed work (14%), the median number of days off work were three. No significant differences ($p < 0.05$) were found in regards to the pre-specified comparisons regarding age, gender, years of clinical experience, highest degree obtained and specialty certification.

Eighty-six percent of the PTs reported having treated a patient with LBP while experiencing LBP at the same time, with 50% of the therapists having higher reported pain than the patient they were treating. The therapists, who experienced LBP at a higher

| Table 1. Demographic information of the 110 PTs participating in the survey. |
|---------------------------------|-----------------|
| Gender                         | Female = 58.2% |
| Mean age (years ± SD)          | 42.9 (+ 10.5)   |
| Mean years practicing (±SD)    | 16.4 (+ 10.2)   |
| Degree                         | Doctorate (DPT) 46% ($N = 51$) |
|                                | Masters (MPT) 31% ($N = 34$) |
|                                | Bachelors (BPT) 18% ($N = 20$) |
| Clinical setting               | Orthopedic hospital outpatient 45% ($N = 49$) |
|                                | Other 16% ($N = 18$) |
| Specialty certification        | 51% yes ($N = 56$) |
score than their patient, rated their LBP at the time as (mean) 5.0/10, while they believed their patient’s LBP (mean) to be 3.6/10. Upon questioning regarding their feelings as to treating a patient with lower LBP than they were currently experiencing themselves, therapists replied with feeling ‘‘no different’’ (35%), ‘‘more understanding’’ (19%), ‘‘more compassionate’’ (17%), ‘‘less compassionate’’ (13%) and ‘‘frustrated’’ (10%). Sixty-eight percent of therapists who had experienced LBP reported sharing their own personal LBP story with their patient.

Discussion

To our knowledge, this is the first study examining the prevalence of PTs with LBP treating patients with LBP. A high proportion of PTs working in outpatient orthopedic settings experience LBP while treating patients with LBP. Furthermore, very few PTs with LBP seek medical care, medical tests or miss work due to LBP, while treating patients with LBP. The 71% response rate of the therapists in this study is comparable to other PT LBP studies varying between 70 and 80% (Adegoke, Akodu, and Oyeyemi, 2008; Rozenfeld et al, 2010; Shehab, Al-Jarallah, Moussa, and Adham, 2003). Additionally, the overall number of respondents (n = 110) compares well to previous PT LBP questionnaire studies, reporting numbers ranging from 100 to 126 (Adegoke, Akodu, and Oyeyemi, 2008; Shehab, Al-Jarallah, Moussa, and Adham, 2003). The demographic data in regards to age, gender, degree and experience of PTs is similar to previous studies utilizing PT sample groups (Childs et al, 2005, 2007; Kaminker, Chiarello, and Chiarini Smith, 2004; Wong, Schumann, Townsend, and Phelps, 2007).

Epidemiological data suggests lifetime LBP prevalence in the general population to be 80% (Cimmino, Ferrone, and Cutolo, 2011; Juniper, Le, and Mladsi, 2009; Mortimer, Pernold, and Wiktorin, 2006; Woolf and Pfleger, 2003). Previous LBP studies in PT reports LBP rates to be comparable (Adegoke, Akodu, and Oyeyemi, 2008; Rozenfeld et al, 2010; Shehab, Al-Jarallah, Moussa, and Adham, 2003). The results from this questionnaire reveals a prevalence of 90%, which is not much higher than general population prevalence, but a potential meaningful higher rate than previous reported PT LBP studies (Adegoke, Akodu, and Oyeyemi, 2008; Rozenfeld et al, 2010; Shehab, Al-Jarallah, Moussa, and Adham, 2003). This study, however, focused heavily on PTs more likely to treat patients with LBP, thus focusing on outpatient orthopedic clinical settings, which represented almost 80% of the study sample. Furthermore, the results from this study also reveal that PTs with LBP often seek minimal medical care.

Fear and lack of knowledge has been strongly correlated to the development and maintenance of LBP (Elfering et al, 2009; Kovacs et al, 2011), and it could be argued that an outpatient orthopedic PTs knowledge of LBP may help them experience less fear. The increased knowledge possessed by PTs has not affected lifetime or point prevalence of LBP in this group but it may influence the impact on their life (e.g. less work loss) and how it is managed (e.g. fewer seek care). With decreased fear and various positive coping strategies regarding LBP, recovery is more likely to occur (Fritz and George, 2002; Fritz, George, and Delitto, 2001; Vlaeyen and Linton, 2000). In this study, therapists reported various positive coping strategies associated with a favorable recovery, including treating themselves and giving the injury some time to heal (Adegoke, Akodu, and Oyeyemi, 2008; George, Dannecker, and Robinson, 2006; Mortimer et al, 2003).

This issue of experiencing pain while assisting someone in pain may, however, serve a larger purpose. Patient’s beliefs strongly correlate to their pain experience (Kovacs et al, 2011; Moseley 2003b). By altering a patient’s beliefs, a therapeutic effect is possible (Moseley, 2004, 2005; Moseley, Nicholas, and Hodges, 2004) hence PNE aims to help reconceptualize a patient’s pain experience, by including explanations of: central sensitization (Nijs et al, 2011, 2013); peripheral neuropathic pain (Louw, Butler, Diener, and Puentedura, 2013; Louw, Puentedura, and Mintken, 2012); and defocusing tissue-based issues (Moseley, 2002, 2007; Moseley, Nicholas, and Hodges, 2004). Various studies have indicated that patients equate LBP with increased feelings of vulnerability (Darlow et al, 2013; Sloan and Walsh, 2010), which further leads to fear and catastrophization, and in turn is linked to increased pain (Cleland, Fritz, and Brennan, 2008). The results from this study showed that 86% of PTs who treat people with LBP, have experienced LBP at the same time, which when shared may help patients reconceptualize their own LBP episode. We speculate that this supports the notion that LBP is indeed a normal human condition (Louw, Diener, Landers, and Puentedura, 2014), experienced by all people, including people treating patients with LBP.

The results further highlight the fact that PTs seek little or no medical care or tests and neither limit their physical job. These findings concur with whiplash studies contrasting behaviors of medically trained and non-medically trained people involved in motor vehicle collisions (Virani, Ferrari, and Russell, 2001). Although various issues may explain the limited catastrophization by PTs regarding their LBP episodes, it is worthy to consider knowledge of pain. PNE studies have shown that PTs score 25% higher than patients in regards to pain knowledge.


Elfering A, Mannion AF, Jacobsen N, Tamcan O, Müller U 2009 Beliefs about back pain predict the recovery rate over 52 consecutive


Appendix 1. Physical therapy and low back pain survey

Section 1: Demographics

1. Gender: [ ] Female [ ] Male

2. Age: __________ years

3. How long have you been a physical therapist? __________ years

4. Which state do you practice in primarily?

5. Which of the following best describes your current clinical setting?

[ ] Free-standing private practice

[ ] Outpatient department – hospital

[ ] Inpatient

[ ] Academic setting

[ ] Pediatric setting

[ ] Neurological rehabilitation

[ ] School setting

[ ] Work injury

[ ] Other __________________________

6. Highest degree:

[ ] Bachelors

[ ] Masters

[ ] Doctorate (DPT)

[ ] PhD

7. Do you have any special certification? [ ] Yes [ ] No

- If yes, please check all that apply:

[ ] OCS

[ ] SCS

[ ] GCS

[ ] FAAOMPT

[ ] CSCTC

[ ] CSMT

[ ] COMPT

[ ] Other: __________________________

8. Have you ever experienced low back pain? [ ] Yes [ ] No

- If yes – please continue with the rest of the questions.

If no – thank you for your time and please return the survey.

Section 2: Low Back Pain Experience

9. Have you ever had medical/imaging testing for your low back pain? [ ] Yes [ ] No

- If yes, please check all that apply:

[ ] X-Ray

[ ] MRI

[ ] CAT Scan

[ ] Myelogram

[ ] Bone scan

[ ] Nerve conduction test

[ ] Blood work

[ ] Other: __________________________

Can you briefly describe what the test showed?

10. Have you ever received an official medical diagnosis for your low back pain?

[ ] Yes [ ] No

- If yes, please check all that apply:

[ ] Degenerative disc disease

[ ] Bulging disc

[ ] Herniated disc

[ ] Arthritis

[ ] Stenosis

[ ] Radiculopathy

[ ] Fact joint arthritis

[ ] SI Joint dysfunction

[ ] Other: __________________________

11. Have you ever had treatment for your low back pain?

[ ] Yes [ ] No

- If yes, please check all that apply – and how many of each:

[ ] Physical therapy

[ ] Chiropractic

[ ] Massage therapy

[ ] Epidural

[ ] Surgery

[ ] Narcotics

[ ] Other: __________________________

12. Have you ever missed work due to low back pain? [ ] Yes [ ] No

- If yes; how long? __________________________

- If yes; how often? __________________________

13. Currently, when you experience low back pain, what do you do for it?

[ ] Nothing

[ ] Slow down a little

[ ] Stop working

[ ] Do back exercises

[ ] Get a colleague to help

[ ] Take medication

[ ] Treat myself

[ ] Other: __________________________

14. Do you currently have low back pain? [ ] Yes [ ] No

- If yes – please use this scale below, and rate your back pain right now and then rate your leg pain right now. The scale is zero to ten. Zero indicating no pain at all and ten indicating the most severe pain you have experienced.

[ ] Other: __________________________

- If yes – please use this scale below, and rate your leg pain right now.

[ ] Other: __________________________

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Section 3: You and your patient’s low back pain

15. Have you ever treated a patient with low back pain while you were having low back pain?
   ☐ Yes  ☐ No

16. Have you ever treated a patient with low back pain while you were convinced your low back pain was more severe than the patient receiving treatment from you for low back pain?
   ☐ Yes  ☐ No

   If yes – what would you have rated your low back pain at that time and the patient’s low back pain at that time?
   Your pain at that time:
   The patient’s pain at that time:

   If you feel that you experienced more low back pain at that time than your patient with low back pain, how did it make you feel?
   ☐ No different  ☐ Angry  ☐ More compassionate
   ☐ Less compassionate  ☐ Frustrated  ☐ More understanding
   ☐ Other: ________________________________________

17. Have you ever shared your history of back pain with a patient?
   ☐ Yes  ☐ No

   Thank you very much for your participation in this study.