The knowledge of low back pain management between physical therapists and family practice physicians

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ABSTRACT

Objectives: The purpose of this study was to compare knowledge in managing patients with low back pain (LBP) between physical therapists and family practice physicians.

Methods: Seventy-three physical therapists and 30 family practice physicians completed standardized examinations assessing knowledge, attitudes, the usefulness of clinical practice guidelines, and management strategies for patients with LBP. Beliefs of physical therapists and family practice physicians about LBP were compared using relative risks and independent t-tests.

Results: Scores related to knowledge, attitudes, and the usefulness of clinical practice guidelines were generally similar between the groups. In addition, there was no difference between the groups for knowledge regarding optimal management strategies for patients with LBP. However, physical therapists were less likely to have difficulty assessing motivation levels of patients with LBP compared to family practice physicians (64.6% vs 26.7%; relative risk: 2.41 [95% confidence interval: 1.30–4.48] and physical therapists were less likely to agree that interventions by health care providers have little positive effect on the natural history of acute LBP (17.8% vs. 50.0%; relative risk: 0.36 [95% confidence interval: 0.19–0.66]).

Discussion: The results of this study may have implications for third-party payers and health care administrators regarding the utilization of physical therapists in the management of patients with LBP in expanded scopes of practice, including direct access and potential placement in primary care clinics.

KEYWORDS

Low back pain; direct access practice; management strategies

Introduction

Low back pain (LBP) is currently the leading cause of disability worldwide [1]. In terms of health care spending on different medical conditions in the United States, LBP accounts for the third highest amount, only behind diabetes and ischemic heart disease [2]. Thus, LBP is a major public health concern; furthermore, it is multifactorial and difficult to effectively manage.

Family practice physicians have traditionally served as the primary entry-point into the healthcare system for patients with LBP, as well as a primary referral source for physical therapists. However, these physician referral episodes of care have been shown to increase costs compared to episodes of care when patients have directly accessed a physical therapist without physician referral [3,4]. Despite legislative approval of direct access to physical therapy, it is thought to be generally underutilized in some healthcare systems due to regulatory barriers and internal institutional policies that deal with experience, degree of training, and knowledge of clinical 'red flag' recognition and when a physician consultation is warranted.

Buchbinder et al. [5] recently determined whether general practitioners' beliefs about LBP differ according

to whether they have a special interest in LBP or musculoskeletal medicine. Study participants completed a questionnaire aimed at eliciting knowledge about the management of acute LBP and attitudes toward these patients. Interestingly, a special interest in LBP was associated with LBP management beliefs contrary to the best available evidence. Physicians with a special interest in LBP were more likely to believe that complete bed rest, avoidance of work, and lumbar spine radiographs are appropriate for acute LBP, despite substantial evidence to the contrary [5]. Finestone et al. [6] recently assessed physician familiarity with managing nonspecific LBP with a questionnaire based upon currently published guidelines. Sixty-seven percent of orthopedists and 46% of family physicians incorrectly recommended some form of bed rest. Less emphasis was placed on patient encouragement and reassurance by the orthopedists and family practice physicians. The majority of orthopedists also incorrectly responded that they would send their patients for radiologic evaluations and preferentially prescribe cyclooxygenase-2-specific non-steroidal anti-inflammatory drugs (NSAIDs), despite practice guideline recommendations to use paracetamol or nonspecific NSAIDs [6]. The results of Buchbinder et al. [5] and Finestone et al.

[6] suggest that physicians' knowledge of treating non-specific LBP is deficient. However, primary care physicians, who are presumed to have adequate knowledge in the diagnosis and treatment of LBP, serve as the primary entry-point into the healthcare system for these patients.

More recently, Ross et al. [7] compared knowledge in managing patients with LBP between physical therapists and family practice physicians. In total 54 physical therapists and 130 family practice physicians currently serving in the U.S. Air Force completed standardized examinations assessing knowledge, attitudes, the usefulness of clinical practice guidelines, and management strategies for patients with LBP [5,6]. Scores related to knowledge, attitudes, and the usefulness of clinical practice guidelines were generally similar between the groups. However, physical therapists were more likely to recommend the correct drug treatments for patients with acute LBP compared to family practice physicians and believe that patient encouragement and explanation are important. Additionally, physical therapists demonstrated significantly greater knowledge regarding optimal management strategies for patients with LBP compared to family practice physicians.

One limitation from the Ross et al. [7] study is that the results may not be generalizable to non-military physical therapy practice settings. Physical therapists in the uniformed services also have extensive additional orthopedic training in managing patients with neuromusculoskeletal conditions without physician referral. Furthermore, they are often credentialed to order necessary diagnostic studies such as radiographs and magnetic resonance imaging and NSAIDs. Therefore, the purpose of this study was to compare knowledge, based on performance on examinations of currently published LBP guidelines [5,6], between non-military physical therapists and family practice physicians in managing patients with LBP.

Methods

A quasi-experimental cross-sectional case-control design was used for this study to explore differences in knowledge, attitudes, the usefulness of clinical practice guidelines, and management strategies for patients with LBP between physical therapists and family practice physicians. Prior to subject recruitment and data collection, the study was approved by the Human Subjects Research Review Committee at Daemen College, Amherst, NY. Permission was additionally granted to purchase the air mailing addresses of physical therapists and family practice physicians from the Private Practice section of the American Physical Therapy Association and the American Academy of Family Physicians, respectively. Electronic mailing

addresses of individuals from these organizations were not available for purchase.

The assessments developed by Buchbinder et al. [5] and Finestone et al. [6] served as the framework for this study in assessing knowledge, attitudes, the usefulness of clinical practice guidelines, and management strategies for patients with LBP (Tables 1 and 2). The examination established by Buchbinder et al. [5] provided subjects with an 11-item survey (Table 1). Five items focused on the participant's knowledge on management of LBP, four items focused on overall attitudes toward LBP, and two items related to the practicality of clinical practice guidelines. These items were presented in the form of statements, and the responses were objectively assessed using a 5-point Likert scale. The allotted responses included 'strongly agree,' 'agree,' 'uncertain,' 'disagree,' and 'strongly disagree' (Table 1). The correct responses for the knowledge items were based on the most recent reviews of the evidence for treatment of patients experiencing LBP [8–13]. The percentage of respondents who answered knowledge questions correctly were determined by adding those who answered either 'agree' and 'strongly agree' or 'disagree' and 'strongly disagree' depending on the wording of the question. A response of 'uncertain' was coded as being incorrect. For questions concerning attitudes and guidelines, a response of either 'agree' or 'strongly agree' was considered to be correct, and the percentage of correct responses was determined in the same way. Correct responses were graded in the same manner as described by Buchbinder et al [5].

Table 1. Knowledge, attitudes, and guideline statements with correct responses regarding the management of patients with low back pain.⁵

Statements	Correct Responses
Knowledge	
Q1. Patients with acute LBP should be prescribed complete bed rest until the pain goes away.	Disagree, strongly disagree
Q2. Patients should not return to work until they are almost pain free.	Disagree, strongly disagree
Q3. X-rays of the lumbar spine are useful in the workup of patients with acute LBP.	Disagree, strongly disagree
Q4. Encouragement of physical activity is important in the recovery of LBP.	Agree, strongly agree
Q5. Interventions by doctors and other health care providers have very little positive impact on the natural history of acute LBP.	Disagree, strongly disagree
Attitudes	
Q6. I am likely to order X-rays for LBP because patients so often expect me to do so.	Disagree, strongly disagree
Q7. There is nothing physically wrong with many patients with chronic back pain.	Agree, strongly agree
Q8. Well motivated patients are unlikely to have long term problems with LBP.	Agree, strongly agree
Q9. I have no difficulty in assessing the motivation of my LBP patients.	Agree, strongly agree
Guidelines	
Q10. Practice guidelines are useful to help doctors in the management of medical conditions.	Agree, strongly agree
Q11. I would find practice guidelines helpful in the management of LBP.	Agree, strongly agree

Table 2. Questions, possible responses, and correct responses regarding the optimal management of patients with low back pain.⁶ Correct responses are noted with an asterisk (*) and the original questions from the Finestone et al examination are Q12, Q13, Q14a, Q14b, and Q14d.

Questions	Possible Responses (Correct Responses*)
Q12. What drug treatment is preferable for patients with acute LBP, defined as pain lasting up to 1 week, without sciatica?	Acetaminophin*, NSAIDs*, COX2 selective NSAIDs, opioids
Q13. What imaging studies would you recommend for patients with acute LBP, defined as pain lasting up to 1 week, without sciatica?	X-ray of the lumbar spine, ultrasound of the kidneys, CT of the lumbar spine, bone scan, MRI, none of the above*
Q14a. Rate the importance of bed rest for the effectiveness of simple back pain treatment	Not recommended*, of minor importance, important, very important, extremely important
Q14b. Rate the importance of patient encouragement and explanation for the effectiveness of simple back pain treatment	Not recommended, of minor importance, important, very important, extremely important*
Q14c. Rate the importance of physical therapy for the effectiveness of simple back pain treatment	Not recommended, of minor importance*, important*, very important*, extremely important*
Q14d. Rate the importance of manipulation for the effectiveness of simple back pain treatment	Not recommended, of minor importance*, important*, very important*, extremely important*
Q14e. Rate the importance of lumbar injections for the effectiveness of simple back pain treatment	Not recommended*, of minor importance, important, very important, extremely important
Q14f. Rate the importance of surgery for the effectiveness of simple back pain treatment	Not recommended*, of minor importance, important, very important, extremely important

The examination established by Finestone et al. [6] provided subjects with a five question survey on management interventions for LBP. For each correct response, participants received 20 points, with a potential for a maximum of 100 points total. Higher scores indicated increased levels of knowledge in relation to beliefs and intervention strategies for the treatment of patients with LBP. Of the five items, two were multiple choice questions (preferred drug treatments and imaging recommendations), and the remaining three were items that focused on the importance of bed rest, patient encouragement and explanation, and the use of spinal manipulation. Those items were scored based on the 5-point Likert scale that included 'not recommended,' 'of minor importance,' 'important,' 'very important,' and 'extremely important.' Three additional questions were added concerning the importance of physical therapy, lumbar injections, and surgery for the effectiveness of simple LBP treatment. These additional questions were not calculated into the examination score in order to compare this study to previous research results [6]. Furthermore, correct responses were graded in the same manner as of those Finestone et al. [6] with the exception of the question pertaining to the importance of spinal manipulation from the

Finestone et al. [6] examination. In the original publication, the correct answer to this question was that manipulation was not recommended based on LBP guidelines published previously [14]. More current guidelines have recommended spinal manipulation in the treatment of patients with LBP [8]. Therefore, an answer of 'of minor importance,' 'important,' 'very important,' or 'extremely important' was deemed correct for the manipulation question.

A total of 500 physical therapists and 500 family practice physicians were invited to participate in the study, which involved completing an education and experience survey and the Buchbinder et al. [5] and Finestone et al. [6] examinations. Subjects were randomly selected for participation based upon current professional air mail distribution lists that were purchased through the Private Practice section of the American Physical Therapy Association and the American Academy of Family Physicians. Both the Private Practice section of the American Physical Therapy Association and the American Academy of Family Physicians reviewed this project and consented to providing air mail distribution lists of their members. No time limit was imposed on the education and experience survey and LBP examination that participants were requested to complete. Once individuals completed the survey, they returned it to the primary investigator via a stamped envelope that was provided. Participants were asked if they had previously read the research performed by Buchbinder et al. [5], Finestone et al. [6], and Ross et al [7]. Those familiar were excluded from the data analysis, as the correct responses to each item were included in that research. All participants were required to complete the survey independently without additional resources (e.g. internet, textbook, etc.). Data from any participant who received outside assistance during the survey were excluded from the analysis.

Data analysis

Relative risks (RRs) and 95% confidence intervals (CIs) were used to compare the beliefs of physical therapists and family practice physicians regarding knowledge, attitudes, usefulness of clinical practice guidelines, and LBP management strategies. For each of the questions from Buchbinder et al. [5] an RR > 1 indicates that a higher percentage of physical therapists agreed with the given statement in comparison to family practice physicians, an RR < 1 indicates that a lower percentage of physical therapists agreed compared to family practice physicians, and an RR = 1 indicates there is no difference in beliefs between physical therapists and family practice physicians. This method was identical to that of Buchbinder et al. [5] in assessing responses to these questions. For each of the questions from Finestone

et al. [6] an $RR > 1$ indicates that a higher percentage of physical therapists provided correct responses to questions regarding LBP management strategies in comparison to family practice physicians, an $RR < 1$ indicates that a lower percentage of physical therapists provided correct responses compared to family practice physicians, and an $RR = 1$ indicates there is no difference in correct response rate between physical therapist and family practice physicians. Overall examination scores on Finestone et al. [6] questions were compared using an independent t-test with an alpha level of $p < 0.05$. For each correct response, participants received 20 points, with a potential for a maximum of 100 points total. Higher scores indicate increased levels of knowledge in relation to beliefs and intervention strategies for the treatment of patients with LBP. This method was consistent with that of Finestone et al [6].

Results

In total 92 physical therapists (response rate = 18%) and 31 physicians (response rate = 6%) completed the survey. The general characteristics of the participants that completed the survey are shown in Table 3. Nineteen physical therapists and one physician were excluded from the data analysis for having knowledge of the research studies by Buchbinder et al. [5] Finestone et al. [6] or Ross et al [7].

For the Buchbinder et al. [5] examination, physical therapists were less likely to have difficulty assessing motivation levels of patients with LBP compared to

family practice physicians (64.6% vs 26.7%; relative risk: 2.41 [95% confidence interval: 1.30–4.48] and physical therapists were less likely to agree that interventions by health care providers have little positive effect on the natural history of acute LBP (17.8% vs. 50.0%; relative risk: 0.36 [95% confidence interval: 0.19–0.66]). Besides the results from these 2 questions, responses were generally comparable for the rest of the Buchbinder et al. [5] examination between physical therapists and family practice physicians (Table 4).

For the Finestone et al. [6] examination, the percentage of physical therapists and family practice physicians were comparable who had correct answers (Table 5) for each of the original five questions. Physical therapists and physicians also demonstrated no statistically significant differences in responses for the additional 3 questions regarding the importance physical therapy, lumbar injections, and surgery for the effectiveness of simple LBP treatment (Table 5). Of the original five questions from the study by Finestone et al. [6], physical therapists scored a mean of 78.9 ± 19.1 points vs. the physician's mean score of 83.6 ± 18.1 points ($p > 0.05$).

Discussion

The purpose of this study was to compare knowledge in managing patients with LBP between physical therapists and family practice physicians. Scores related to knowledge, attitudes, and the usefulness of clinical practice guidelines were generally similar between physical therapists and family practice physicians. In addition, there was no difference between the physical therapists and family practice physicians for knowledge regarding optimal management strategies for patients with LBP. The only differences noted in this study were that physical therapists were less likely to have difficulty assessing motivation levels of patients with LBP compared to family practice physicians and physical therapists were less likely to agree that interventions by health care providers have little positive effect on the natural history of acute LBP. The results of our study are generally consistent with those of previous researchers who have shown that physical therapists have knowledge levels that are equal to or higher than all physician specialties except for orthopedic surgeons in managing musculoskeletal conditions [7,15,16].

Participants in our study completed the same examination developed by Buchbinder et al. [5] and Finestone et al. [6]. We did not modify the questions, primarily to allow comparison to prior studies [5–7]. While the examination may appear to be generally valid on its face, it is not known if the results of this study accurately portray participants' actual clinical practice patterns. More specifically, there may be a difference between how participants responded to

Table 3. Characteristics of clinical experience and training for physical therapists ($n = 73$) and family practice physicians ($n = 30$). Note: MSK = musculoskeletal, CME = continuing medical education, LBP = low back pain.

Characteristics	Physical Therapists	Physicians
Male (n , %)	31 (42.5)	12 (40.0)
Age (mean, range)	50.0 (25–81)	50.7 (29–67)
Yrs of clinical practice (mean, range)	22.4 (0–57)	19.8 (1–37)
Current clinical practice time		
0–25 (n , %)	39 (62.9)	18 (64.3)
26–50 (n , %)	21 (33.9)	10 (35.7)
51–75 (n , %)	2 (3.2)	0
76–100 (n , %)	0	0
Residency Trained (n , %)	1 (1.4)	30 (100)
Fellowship Trained (n , %)	1 (1.4)	3 (10)
Board Certified (n , %)	20 (27.4)	30 (100)
Special interest in:		
MSK medicine (n , %)	63 (86.3)	23 (76.7)
low back pain (n , %)	52 (71.2)	9 (39.1)
Percent of patients with LBP in caseload		
0–25 (n , %)	25 (35.2)	21 (7)
26–50 (n , %)	34 (47.9)	8 (26.7)
51–75 (n , %)	9 (12.7)	1 (3.3)
76–100 (n , %)	3 (4.2)	
CME for LBP in past 2 years (n , %):		
0 hrs	28 (38.4)	17 (56.7)
1–20 hrs	33 (45.2)	12 (40)
20+hrs	12 (16.4)	1 (3.3)

Table 4. Percentages of physical therapists and family practice physicians agreeing with knowledge, attitudes, and guideline statements for the management of patients with low back pain.

Statements	Percent Agreement		Relative Risk (95% Confidence Interval)
	Physical Therapists	Physicians	
Knowledge			
Q1. Patients with acute LBP should be prescribed complete bed rest until the pain goes away.	0	0	0.42 (0.01–20.64)
Q2. Patients should not return to work until they are almost pain free.	4.1	3.3	1.23 (0.13–11.34)
Q3. X-rays of the lumbar spine are useful in the work up of patients with acute LBP.	23.3	6.7	3.49 (0.86–14.20)
Q4. Encouragement of physical activity is important in the recovery of LBP.	97.3	100	0.97 (0.94–1.01)
Q5. Interventions by doctors and other health care providers have very little positive impact on the natural history of acute LBP.	17.8	50	0.36 (0.19–0.66)
Attitudes			
Q6. I am likely to order X-rays for LBP because patients so often expect me to do so.	2.7	0	2.09 (0.10–42.38)
Q7. There is nothing physically wrong with many patients with chronic back pain.	12.3	10	1.23 (0.36–4.24)
Q8. Well motivated patients are unlikely to have long term problems with LBP.	37	46.7	0.79 (0.49–1.29)
Q9. I have no difficulty in assessing the motivation of my LBP patients.	64.4	26.7	2.41 (1.30–4.48)
Guidelines			
Q10. Practice guidelines are useful to help doctors in the management of medical conditions.	61.60	76.70	0.80 (0.62–1.05)
Q11. I would find practice guidelines helpful in the management of LBP.	58.90	76.70	0.77 (0.59–1.01)

Table 5. Percentages of physical therapists and family practice physicians who correctly answered questions on the optimal management of patients with low back pain.

Questions	Percent Correct		Relative Risk (95% Confidence Interval)
	Physical Therapists	Physicians	
Q12. What drug treatment is preferable for patients with acute LBP, defined as pain lasting up to 1 week, without sciatica?	73.9	66.7	1.11 (0.83–1.48)
Q13. What imaging studies would you recommend for patients with acute LBP, defined as pain lasting up to 1 week, without sciatica?	82.2	90.0	0.91 (0.79–1.07)
Q14a. Importance of bed rest	69.9	83.3	0.84 (0.67–1.04)
Q14b. Importance of patient encouragement and explanation	76.7	83.3	0.92 (0.75–1.13)
Q14c. Importance of PT	100	97.70	1.03 (0.97–1.11)
Q14d. Importance of manipulation	93.2	93.3	0.99 (0.89–1.12)
Q14e. Importance of lumbar injections	54.8	66.7	0.82 (0.59–1.14)
Q14f. Importance of surgery	83.6	86.7	0.96 (0.81–1.15)

the questions in this study and their daily clinical practice patterns, especially since some of the questions may be 'guiding' in their formulation. For example, the question 'I am likely to order X-rays for LBP because patients so often expect me to do so' may lead participants to choose the correct answer of 'disagree' because of its formulation; 97% of physical therapists and 100% of physical therapists 'disagreed' with this question. Further study is necessary to determine the relationship between survey-based results regarding clinician knowledge, attitudes, and management strategies and their daily clinical practice patterns.

In order to obtain an accurate reflection of the true level of knowledge among physical therapists and physicians in managing nonspecific acute LBP, we asked that participants complete the survey in this study privately and individually without the help of outside resources (i.e. colleagues, textbooks, information available on the internet, personal communication, etc.) to assist in answering the questions. Additionally, at the end of survey, participants were asked if they used any outside resources to assist in the completion of the survey. Data from any participant who received outside

assistance during the survey were excluded from the analysis. Since participants were not proctored during completion of the survey, we cannot be completely sure that subjects did not use any outside resources to assist in the completion of the survey. None of the participants in this study noted that they used any outside resources to complete the survey. Nonetheless, we recommend caution in interpreting the results of this study since the lack of proctoring of participants during survey completion may have influenced the results.

In this study, physical therapists were less likely to have difficulty assessing motivation levels of patients with LBP compared to family practice physicians (64.6% vs. 26.7%; relative risk: 2.41 [95% confidence interval: 1.30–4.48]). This finding is also consistent with those of Ross et al. [7], who compared knowledge in managing patients with LBP between physical therapists and family practice physicians in the U.S. Air Force. Low patient motivation levels have recently been shown to be a risk factor for a poorer outcome in patients with LBP [17]. Additionally, Mannion et al. [18] recommend that more effort should be invested by clinicians in finding ways to evaluate and improve patients' motivation to take responsibility for the success of their own course of

care, perhaps by increasing exercise self-efficacy. Assessing patient motivation levels is a time-consuming process. The duration of a typical patient visit is longer with the physical therapist than a family practice physician and the physical therapist typically sees patients on a serial basis for a period of time. This increased patient interaction may play a part in physical therapists having less difficulty in assessing patient motivation.

Despite numerous published clinical guidelines, Mafi et al. [19] determined that the management of non-specific LBP has relied increasingly on guideline discordant care, which is associated with an increased risk of diagnostic imaging, invasive procedures, and prolonged disability [20–23]. More specifically, Mafi et al. [19] observed a significant rise in the frequency of treatments including use of advanced imaging, such as computed tomography or magnetic resonance imaging, referrals to other physicians (presumably for procedures or surgery), and use of narcotics. They also observed a decline in use of first-line medications such as NSAIDs or acetaminophen, but no change in referrals to physical therapy. Well-established guidelines for routine LBP stress conservative management including use of NSAIDs or acetaminophen, advice to stay active (avoid bed rest), and physical therapy, but avoiding early imaging or other aggressive treatments except in rare cases such as those demonstrating acute neurological compromise or other ‘red flags’ such as a history of malignancy. Some of our results reflect the guideline discordant care referred to by Mafi et al. [19]. For example, 26% of physical therapists and 35% of physicians were not able to correctly choose the drug treatment is most preferable for patients with acute LBP. In total 18% of physical therapists and 10% of physicians recommended some form of imaging study for patients with acute LBP. While no participants in this study would prescribe complete bed rest for a patient with acute LBP, 30% of physical therapists and 17% of physicians still believed bed rest had some importance in the management of patients with simple LBP. While essentially all participants in this study agreed that physical therapy is important in managing patients with acute LBP, many of our participants still believed that procedures (e.g. lumbar injections) or surgery were important in the management of patients with acute LBP. While there were no significant differences between physical therapists and family practice physicians for correct drug treatments, diagnostic imaging selections, use of bed rest, or recommendations for procedures or surgery, continued educational efforts in the management of LBP are indicated and represent an area of potential cost savings for the healthcare system while also improving the quality of care and patient outcomes.

Diagnostic imaging is indicated for patients with LBP only if they have severe progressive neurologic deficits or signs or symptoms suggestive of a specific or serious

underlying medical condition [19]. In patients with LBP that do not meet these criteria, routine diagnostic imaging is not associated with clinically meaningful benefits and can actually lead to harm [19]. It is interesting to note that physical therapists were more likely to recommend some form of imaging study for patients with acute LBP than physicians in this study. Perhaps the physical therapists in this study, especially those without diagnostic imaging privileges, were less likely to be familiar with the current imaging guidelines compared to physicians or think they do not apply to the case at hand [21]. In studies that have examined clinical practice patterns of physical therapists who have diagnostic imaging privileges, physical therapists are less likely to order diagnostic when compared to physicians in similar practice settings [24,25]. Furthermore, referrals by physical therapists for magnetic resonance imaging of the lumbar spine are more likely to be positive for evidence of neural compromise than referrals from primary care physicians, spinal surgeons, and other non-spinal secondary care providers [26].

There are several limitations that may have influenced the findings from this study. First, the survey was conducted among a random sample of members from the Private Practice section of the American Physical Therapy Association and the American Academy of Family Physicians. Findings may not generalize to nonmembers of the Private Practice section of the American Physical Therapy Association and the American Academy of Family Physicians. Second, we had an 18% and 6% response rate from physical therapists and physicians, respectively. These response rates, especially for the physician group, are quite lower than we expected for a mailed, nonincentivized survey [27]. Additionally, the characteristics of those who responded to the survey might have differed from those who did not, and therefore, there may be concerns with the external validity of this study and the representativeness of the results. Since the survey was administered anonymously, we had no method of determining who the nonresponders to the survey were. Third, the vast majority of responders (86.3% of physical therapists and 76.7% of physicians) had a special interest in musculoskeletal medicine; additionally, 71.2% of physical therapists and 39.1% of physicians had a special interest in LBP. Thus, our data may reflect a response bias; perhaps respondents with a special interest in musculoskeletal medicine and LBP were more likely to complete our survey. Despite these limitations, the findings offer a novel representation of knowledge in managing patients with LBP among physical therapists and family practice physicians in the United States.

Conclusion

This study compared knowledge, attitudes, the usefulness of clinical practice guidelines, and

management strategies of physical therapists and family practice physicians for patients with LBP. Scores related to knowledge, attitudes, and the usefulness of clinical practice guidelines were generally similar between physical therapists and family practice physicians. In addition, there was no difference between physical therapists and family practice physicians for knowledge regarding optimal management strategies for patients with LBP. These results may have implications for health policy decisions regarding the utilization of physical therapists to provide care for patients with LBP without a referral including the potential placement of physical therapists in primary care clinics to initially manage patients with musculoskeletal conditions. Further study is warranted to determine the effect of these results and others that have evaluated the knowledge of physical therapists on access and utilization of physical therapists [15–17].

Disclosure statement

No potential conflict of interest was reported by the authors.

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