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RESEARCH ARTICLE

TREATMENT PREFERENCES OF PHYSICAL THERAPISTS IN LOW BACK PAIN- A CROSS SECTIONAL SURVEY

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ABSTRACT

Low back pain is the common problem of almost all age group around the world. Many different modalities were used to relief the pain. One cannot be confined on any one to prove that it was the best technique to treat back pain.

Objective: To explore the treatment techniques used by physical therapists in the management of low back pain.

Methodology: A cross-sectional survey was conducted in major physiotherapy out-patient departments of Karachi covering major government, semi government and private sector hospitals. Data was collected from 100 practicing physiotherapists through convenience sampling technique and were asked to fill self-administered close ended questionnaire. Data entry and analysis was done using SPSS Version 16 and chi-square test applied.

Result: The results of this study suggest that 81.4% physiotherapists follow Electrotherapy treatment guidelines, 57.7% use thermotherapy, 56.6% of the therapists use Maitland peripheral joint mobilization technique as manual therapy for LBP and 54.6% said they require 4 – 7 sessions for treatment of LBP patients.

Conclusion: Our survey respondents indicated that they widely use interventions with a strong evidence base for effectiveness and that they also use a variety of other interventions with limited support or conflicting evidence.

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INTRODUCTION

Back pain especially targeting the lumbar region is the most common complain around the globe. It has been reported that about 80% people in their life experienced low back pain (Zehra, 2013). While it is extremely common, the symptoms and severity of lower back pain vary greatly. Low back pain is broadly characterized by three sub-divisions: nonspecific low back pain, back pain potentially associated with radiculopathy or spinal stenosis or back pain potentially associated with another specific spinal cause.

More than 85% of patients who present to primary care have low back pain that cannot reliably be attributed to a specific disease or spinal abnormality (nonspecific low back pain) (Chou *et al.,* 2007). On the basis of duration, the low back pain could be: Acute (< 6 weeks), sub acute (> 6 weeks to 3 months) and chronic (> 3 months). Many conservative treatment options are available for treatment of its various types but there is insufficient evidence to name any as particularly effective. In two separate surveys of the British general population, 38% of adults reported a significant episode of low back pain in one year, and a third of these experienced the symptom for longer than four weeks

(Walsh *et al.,* 1992).The point prevalence rate of LBP in Glostrup, Denmark was estimated to be 13.7% while in Saskatchewan, Canada it was found to be 28.7% and 19% in Bradford, United Kingdom (Loney and Stratford, 1999). In US, It is estimated that episodes of LBP, be it frequent or persistent, were reported to be 15% with a lifetime prevalence of 65 to 80% (Lawrence *et al.,* 1998). In Asia, The overall annual prevalence of self-reported LBP (50%) was higher than that reported among 50 other Chinese employed study populations (30%) (Kezhi Jina *et al.,* 2004). In India, the prevalence of LBP ranges from as low as 6.2 to as high as 92% varying with the population under consideration (Bindra, 2014). In a previous International study, In respect to the value of specific evaluation and treatment approaches, the combined weighted sample estimated that 85% of therapists perceived the McKenzie method as moderately to very effective. The McKenzie method was also rated as the "most useful" approach by 48% of therapists. Myofacial release was rated most useful by 5% of the therapists; the Cyriax approach was rated most useful by 5% of the therapists; and 44% of the therapists cited a variety of other methods, such as patient education, postural advice, following Maitland principles, pelvic stabilization and various stretching, strengthening, and conditioning exercises (Battie *et al.,* 2014).

In another research of this nature, Analysis of the results indicated the overall popularity of the Maitland mobilization and McKenzie approaches among physiotherapists (Foster *et al.,* 1999). International guidelines for low back pain management have identified that exercise programs that incorporate individual tailoring, supervision, stretching, and strengthening are associated with the best outcomes (Hayden *et al.,* 2005). According to European Physical therapy guidelines, there is no evidence for the effectiveness of thermotherapy compared with sham/placebo treatments in the treatment of chronic low back pain. Transcutaneous electrical nerve stimulation and intermittent or continuous traction (in patients with or without sciatica) have not been proven effective for chronic low back pain (Hildebrandt *et al.,* 2004). In American physical therapy guidelines, there is insufficient evidence to recommend interferential therapy, low-level laser therapy, shortwave diathermy, or ultrasonography (therapeutic ultrasound) (Chou, 2007).

In the previous studies conducted in Pakistan regarding treatment techniques in low back pain, patients who received spinal manual therapy(SMT) protocols improved significantly better with lower disability scores compared with patients who had general spinal exercises(GSE) protocols (Hussain *et al.,* 2014). In other study, effect of exercise therapy was explored, Exercises were combined with appropriate ergonomics according to the individual merit. Beneficial effects of this regimen were recorded in these patients (Bashir *et al.,* 2016). No other treatment techniques have been explored. Low back pain is considered as a major problem globally as well in Pakistan. Therefore there is urgent need to evaluate level of current physiotherapy practice related to LBP. The aim of this survey based study was to find out which treatment technique is most commonly used by the physiotherapists in Karachi to treat the low back pain and whether the approach is in accordance with the evidence of its effectiveness or not. The information attained through this survey would pave way for future outcomes research in physiotherapy. Most preferably used treatment techniques established by this survey aim for future outcomes studies if their effectiveness have not yet been proven through randomized clinical trials.

MATERIALS AND METHODS

A Cross sectional survey based study was conducted in the physical therapy departments of public and private sector university hospitals, department of physical medicine and rehabilitation. The duration of the study was three months. The sample size was calculated using Open Epi based on the anticipated hypothesized frequency of outcome of Mc Kenzie method which was 48% (Battie *et al.,* 2014). The calculated sample size was 100 and convenience sampling technique was used.

Inclusion criteria: All the clinical physiotherapists of public and private sector hospitals, Institute of Physical medicine and Rehabilitation.

Exclusion criteria: All academic and administrative physiotherapists along with the Physiotherapy aids and students. A Self administrated questionnaire was used to collect the data after explaining study objectives and taking informed consent from the study participants.

The Questionnaire was divided into two parts, one to record the demographic details of the participating physiotherapists and second to assess the practices and attitude of physiotherapists towards treatment. Data was entered in SPSS Version 16. Frequencies and percentages were taken out for all categorical variables. Chi-square test was applied as test of significance to find association between two categorical variables. P-value less than 0.05 will be considered significant.

RESULTS

Data was stored and analyzed using SPSS 16.0, Count and percentages are given for age group, gender, qualification, institutes and clinical experience. Cross tabulation was done to see the response on low back pain (LBP) questions with respondents who did treat LBP in past and did not treat LBP in their past. Pie and Bar charts also used to give the graphical representation of the given samples.

Table 1. Demographic Characteristics of Participants

Basic Characteristics		Percentages (n=100)
Age Group	Less than or Equal to 26 Year	36
	27 to 30 Years	48
	More than 30 Years	16
Gender	Male	47
	Female	53
Qualification	PPDPT	20
	MS	31
	DPT	21
	BSPT	28
Institute	AKUH	36
	IPM&R	14
	JPMC	18
	LNH	8
	ZIAUDDIN	24
Clinical Experience	Less or Equal to 5 Years	71
	6 to 8 Years	20
	More Than 8 Years	9

Table 1. Showed the demographic characteristics of the sampled data, in the present study 48% respondents fell in the age group of 27 to 30 years, 53% respondents were female,

31% responded had MS qualification, 36% therapists of the total sample size belonged to AKUH, 71% respondents had less than five years clinical experience. The responses of physical therapist regarding LBP questions, showed that overall 97% respondents treated patients with LBP. 56.7% therapists reported that most commonly seen cases were of chronic LBP. 39.2% respondents said they have 5 – 10 patients of LBP per month, 81.4% said they followed Electrotherapy treatment guidelines in LBP patients. 57.7% said they used thermotherapy as electro therapy agent (Table 2).

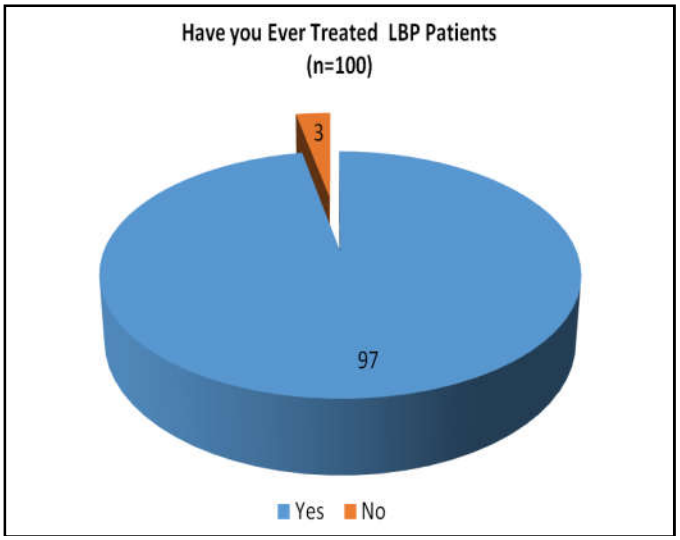
Table 3 showed the results on treatment preference of Physical therapist in LBP patients. 56.6% therapists said they used Maitland peripheral joint mobilization technique as manual therapy for LBP, 54.6% said they required 4 – 7 sessions for treatment of LBP patients. 55.7% therapist said they performed these sessions on daily basis. Graph 1: displayed the proportion of physical therapist that did treated LBP patients in the present study. 97% treated LBP patients.

Table 2. Clinical Practices of Physical Therapists related to LBP

Questions on LBP		Have You Ever Treated The Patient With LBP			
		Yes n=97		No n=3	
		n	%	N	%
Which type of back pain cases do you mostly see?	Acute LBP	36	37.1	-	-
	Sub-acute LBP	6	6.2	-	-
	Chronic LBP	55	56.7	-	-
How many LBP patients you see in average duration of a month?	5-10	38	39.2	-	-
	11-15	13	13.4	-	-
	16-20	13	13.4	-	-
	More than 20	29	29.9	-	-
	11	4	4.1	-	-
Do you follow any specific physiotherapy treatment guidelines in LBP patients?	Electrotherapy	79	81.4	-	-
	Manual therapy	15	15.5	-	-
	Exercise therapy	3	3.1	-	-
Which of the following electrotherapy agent do you most commonly use in LBP patients?	TENS	6	6.2	-	-
	Cryotherapy	28	28.9	-	-
	Thermotherapy	56	57.7	-	-
	Laser	4	4.1	-	-
	Short wave diathermy	3	3.1	-	-

Table 3. Treatment Preference of Physical Therapist in LBP

Questions on LBP		Have You Ever Treated The Patient With LBP			
		Yes N=97		No N=3	
		N	%	N	%
Which of the following manual therapy do you use in LBP patients?	Maitland peripheral joint mobilization technique	55	56.7	-	-
	Cyriax peripheral joint mobilization technique	30	30.9	-	-
	Manual joint distraction	9	9.3	-	-
	Others	3	3.1	-	-
Please specify number of treatment session usually required in patient with LBP	1-3	10	10.3	-	-
	4-7	53	54.6	-	-
	8-14	25	25.8	-	-
	More than a month	9	9.3	-	-
Please specify the frequency of treatment session you usually prefer	Daily basis	54	55.7	-	-
	Once a week	7	7.2	-	-
	3 days per week	18	18.6	-	-
	5 days per week	15	15.5	-	-
	Others	3	3.1	-	-



Graph 1. Treatment proportion of physical therapist

DISCUSSION

This study adds to our knowledge concerning physical therapy practice in managing low back pain. Our findings suggest that physical therapists followed most of the recommendations from the guidelines. Electrotherapy was most frequently reported by therapists as part of the treatment for acute lumbar impairment. These findings also match the results of other studies. Battié *et al.* 1994 found that 86% of the therapists in the state of Washington would include patient education for patients with acute LBP and that 71% of the therapists would include patient education for patients with sciatica. In a more recent study, Mielenz *et al.* 1977 who interviewed 1,580 patients with LBP in North Carolina, found that therapeutic exercise (83%) and heat treatment (74%) were the interventions that were most commonly prescribed by physical therapists. However, the use of patient education was not reported in this study. A majority of the respondents chose assessment procedures that would help to rule out "red flags"

such as cauda equina, inflammatory diseases, fracture, cancer, and infection (Bigos *et al.,* 1994). With regard to bed rest, the guidelines suggest that 2 to 4 days of bed rest may be an option only for patients with severe initial symptoms of sciatica (Bigos *et al.,* 1994). This recommendation was supported by a study by Malmivaara *et al.* (1995) which showed that patients with LBP who were assigned a 2-day bed rest recovered more slowly than those who had maintained ordinary activities. In our survey, more than 55% of the respondents advised daily basis treatment for someone with localized symptoms. About a quarter of the therapists indicated they would recommend 3 days per week treatment for the patient with low back pain. A few discrepancies between the reported practice and guideline recommendations were identified. First, the reported use of maitland peripheral joint mobilization technique was higher in our study. 56.7% of the therapists reported that they would use maitland manipulation to treat patients with acute low back pain, as compared with therapists who indicated that they would use mobilization. This discrepancy could be explained by the large number of therapists who were trained to perform manipulation. Although most of the respondents had received postgraduate training in manual therapy, only 31% completed MS that included joint manipulation.

This is an area where physical therapy practice can improve in the future. The AHCPR guidelines recommend that clinicians should teach self-application of heat or cold for pain control and discourage the use of modalities such as TENS, ultrasound, and biofeedback, which possess uncertain effectiveness for managing acute lumbar impairment (Bigos *et al.,* 1994). Our results suggested that although the use of heat and cold was preferred by the respondents, some still used modalities that have questionable effectiveness. For example, mechanical spinal traction, which has consistently been shown to be of little benefit for acute and sub-acute low back pain and is not recommended by the guidelines, was preferred by about 9.3% of the therapists for back pain.

The selection of interventions by clinicians may be associated with a combination of clinical and nonclinical factors. In a study with 2,491 patients (50% with lumbar impairment), treated by 462 physical therapists, Jette and Jette (1997) found that the use of heat and cold modalities was related not only to the acuity and severity of lumbar impairment, but also to the therapist's academic degree. Furthermore, patients were more likely to receive endurance or strengthening exercises and spinal manipulation or mobilization from therapists who worked in practices with lower caseloads. Jette and Jette suggested that the uncertainties regarding the underlying cause of lumbar impairment and the effectiveness of treatments in reaching desired outcomes might have led clinicians to develop a practice style that is affected by idiosyncratic factors. Some of the reasons may include patients' demands, (Klingman *et al.,* 1996) excessive commitment to particular modes of therapy, (Cherkin *et al.,* 1995) and the therapists' own perceptions of treatment effectiveness (Tomlin *et al.,* 1999).

Conclusion

Our survey respondents indicated that they widely use interventions with a strong evidence base for effectiveness and that they also use a variety of other interventions with limited support or conflicting evidence. This suggests there is a need for research to fill gaps in evidence that are associated with variable practice patterns and knowledge translation to reduce the usage of some interventions that have been shown to be ineffective.

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