

Physical Therapy Interventions in Back Pain Management: What Does evidence say?

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ABSTRACT

Non specific low back pain affects 85% of patients who present to primary care and is one which cannot be reliably attributed to a specific disease or spinal abnormality. Physical therapy modalities are frequently used for its management but the best evidence for the efficacy and cost effectiveness of the treatment is provided by well designed systematic reviews and randomized controlled trials. The study includes recent evidences for the same from Cochrane library. The results have revealed the efficacy of superficial heat, patient education and advice to stay active than bed rest in acute LBP. Graded activity exercise, superficial heat, massage, physical conditioning and individual patient education are effective in sub acute LBP. Exercise, massage, spinal manipulative therapy, back schools, physical conditioning programs are moderately effective in chronic LBP. Tens and traction are found to be ineffective in LBP besides the duration of symptoms. Evidence is inconclusive about the role of laser, ultrasound, lumbar supports, superficial cold, use of insoles, advice on manual material handling and use of assistive devices. Multidisciplinary bio psychosocial rehabilitation and behavioral therapy have been found to be at least moderately effective in sub acute to chronic LBP. But most of the studies were found to be inadequate in terms of poor methodological quality. In addition the heterogeneity of the non specific LBP population cannot be ignored. There is a need to establish a classification system for non specific LBP that would allow determining how subgroups differ in terms of natural course and whether treatment and management strategies could be tailored to each subgroup. This should be followed by designing future trials of high methodological quality.

Key words : Non Specific Low Back Pain, Physical Therapy Interventions

INTRODUCTION

Low back pain (LBP) is defined as pain, muscle tension or stiffness localized below the costal margin and above the inferior gluteal folds with or without leg pain (Koes et al, 2006) and affects up to 90% of the world's population at some point in their lives (Ehrlich, 2003). More than 85% of patients who present to primary care have non specific LBP that cannot be reliably attributed to a specific disease or spinal abnormality (Gan et al, 2007). Many health care professionals use a variety of diagnostic labels and at present no reliable and valid classification system exists for most cases of non specific LBP (Van Tudler, 2006). Moreover no evidence suggests that labeling most patients with LBP by using specific anatomical diagnosis improves outcomes. Abnormalities in X ray, MRI (magnetic resonance imaging) and the occurrence of non specific LBP are not strongly associated (Van Tudler, 1997). Therefore a focussed history and physical examination is needed to place patients with LBP in to 1 of 3 broad categories of diagnostic triage: those with non specific LBP, b. those with LBP potentially associated with radiculopathy or spinal stenosis and c. those with LBP potentially associated with other spinal causes such as tumor, infection, cauda equina syndrome that require prompt evaluation as well as conditions such as ankylosing spondylitis and vertebral compression fractures.

In clinical practice as well as in literature, non specific LBP is usually classified by duration of the complaints (Van Tudler, 2006). LBP is defined as acute when it persists for less than 6 weeks, sub acute between 6 weeks and 3 months and chronic when it lasts longer than 3 months. The triage is focussed on identification of red flags as indicators of possible underlying pathology, including nerve root problems and in the absence of red flags, patient is considered to have non specific LBP (Van den Hoogen, 1997).

The 3 main categories of treatment of LBP are surgical, nonsurgical and pharmacologic. Acute LBP is usually treated through self care, exercise, analgesics, superficial heat therapy and patient education. Non invasive techniques for chronic LBP include exercise regimens such as pilates and yoga, spinal decompression therapy, back schools and cognitive behavioral therapy (Gan et al, 2007). Since non specific LBP includes a wide spectrum of conditions there is a need to identify the most effective treatment for the same. It is the duty of the physical therapist to use evidence based treatment modalities for patient benefit and cost effectiveness. The best evidence about the effectiveness of a therapy is provided by well designed systematic reviews and randomized controlled trials as theoretically these study types provide unbiased estimates of the effects of the therapy (Maher, 2004). Therefore the study focusses on recent evidences on effectiveness of physical therapy interventions for non specific LBP based on Cochrane reviews till date.

Physical Therapy Interventions in Low Back Pain

The Cochrane library was accessed for role of physical therapy interventions in LBP and recent evidences on role of laser, transcutaneous electrical nerve stimulation (TENS), bed rest, spinal manipulative therapy (SMT), back schools, physical conditioning, superficial heat and cold, individual patient education, traction, lumbar supports, advice on manual material handling (MMH) and use of insoles were found. The efficacy of behavioral therapy and

multidisciplinary psychosocial rehabilitation was also taken in to account. The results are summarized under Table 1.

Table 1: Evidence on Physical Therapy Interventions in Low Back Pain

Intervention	Review	Objectives	Selection criteria	Results	Conclusion
Exercise	Hayden et al, 2005	To evaluate the effectiveness of exercise therapy in adult non specific acute, sub acute and chronic LBP versus no treatment and other conservative measures	RCT's evaluating exercise therapy for adult non specific LBP and measuring pain, function, return to work/absenteeism, and /or global improvement outcomes	61 RCT's met inclusion criteria: acute (11), sub acute (6), chronic (43), unclear (1) a. Effectiveness in chronic population relative to comparison at all follow ups in terms of mean improvement in pain and function b. Greater mean improvement in pain and function in patients presenting to health care providers than in patients recruited from general population (e.g. with advertisements) c. Graded activity exercise found to be effective in sub acute LBP d. Equal effectiveness relative to comparisons in acute populations	1. Exercise therapy is slightly effective at decreasing pain and improving function in adults with chronic LBP. 2. Graded activity program improves absenteeism outcomes in sub acute LBP, evidence for other types of exercise is unclear. 3. Exercise therapy is as effective as either no treatment or other conservative treatments in acute LBP.
Laser	Yousefi Nooraie et al, 2008	To assess the effects of low level laser therapy (LLL) in patients with non specific LBP	RCT's investigating LLLT to treat non specific LBP were included	7 heterogenous RCT's with reasonable quality were included. a. 3 small studies separately showed statistically significant but clinically unimportant pain relief for LLLT versus sham therapy for sub acute and chronic LBP at short term and intermediate term follow up. b. One study found that LLLT was more effective than sham at reducing disability in the short term. c. 3 studies reported that LLLT plus exercise were not better than exercise, with or without sham in the short term in reducing pain and disability. d. 2 studies reported that LLLT was not more effective than exercise, with or without sham in reducing pain and disability in the short term. e. 2 small trials independently found that the relapse rate in the LLLT group was significantly lower than in the control group at 6 month follow up.	1. Due to heterogeneity of the population, interventions and comparison groups, it is concluded that there is insufficient data to draw firm conclusions on the clinical effect of LLLT for LBP. 2. There is need for methodologically rigorous RCT's to evaluate the effects of LLLT compared to other treatments, different lengths of treatment, wavelengths and dosages.
Massage	Furlan et al, 2008	To assess the effects of massage therapy for non specific LBP	Randomized or quasi randomized trials investigating the use of any type of massage (using hands or mechanical device) as a treatment for non specific LBP	13 randomized trials were included. 8 had a high risk and five had a low risk of bias. a. Massage was compared to an inert therapy (sham treatment) in two studies that showed that massage was superior in terms of pain and function on both short and long term follow ups.	1. Massage might be beneficial for patients with sub acute and chronic non specific LBP, especially when combined with exercises and education.

				<p>b. 8 studies comparing massage to other active treatments found that effect of massage was similar to exercises and superior to joint mobilization, relaxation therapy, physical therapy, acupuncture and self care education.</p> <p>c. One of the 2 studies concluded that acupuncture massage produced better results than classic (Swedish) one, another showed that Thai massage produced similar results to classic massage.</p>	<p>2. Acupuncture massage is more effective than classic one, but needs confirmation.</p> <p>3. More studies are needed to confirm the conclusions, to assess the impact of massage on return to work, and to determine cost effectiveness of massage as a intervention for LBP.</p>
Multidisciplinary bio psychosocial rehabilitation	Karjalainen et al, 2003	To determine the effectiveness of multidisciplinary rehabilitation for sub acute low back pain among working age adults	<p>Both RCT's and non randomized controlled trials</p> <p>Trials had to assess the effectiveness of multidisciplinary rehabilitation for sub acute LBP in working age adults</p> <p>Rehabilitation program had to consist of physician's consultation plus either a psychological, social or vocational intervention or a combination of these</p>	<p>2 relevant studies satisfied the criteria</p> <p>a. Both studies were considered to be methodologically low quality RCT's.</p> <p>b. Clinical relevance of included studies was sufficient.</p> <p>c. Moderate evidence shows that multidisciplinary rehabilitation which includes a workplace visit or more comprehensive occupational health care intervention helps patients to return to work faster, results in fewer sick leaves and alleviates subjective disability.</p>	<p>1. There is moderate evidence of positive effectiveness of multidisciplinary rehabilitation for sub acute LBP and a workplace visit increases the effectiveness.</p> <p>2. Trials have methodological shortcomings.</p> <p>3. Several expensive rehabilitation programs are commonly used for un complicated / non specific sub acute LBP.</p> <p>4. There is an obvious need of high quality trials in this field.</p>
Spinal manipulative therapy (SMT)	Rubinstein et al, 2011	To know the effects of SMT for chronic LBP	<p>RCT's that examined the effect of spinal manipulation or mobilization in adults with chronic LBP.</p> <p>No restrictions were placed on settings or type of pain; studies which exclusively examined sciatica were excluded.</p> <p>Primary outcomes were pain, functional status and perceived recovery, secondary outcomes being</p>	<p>A total of 26 RCT's, 9 of which had low risk of bias.</p> <p>a. High quality evidence that SMT has a small, statistically significant but not clinically relevant short term effect of pain relief and functional status compared to other interventions.</p> <p>b. Varying quality of evidence for short term pain relief and improvement of functional status when comparing SMT to other interventions.</p> <p>c. Very low quality evidence that SMT is statistically significantly more effective than inert interventions or sham treatments for short term pain relief and improvement of functional status.</p>	<p>1. High quality evidence suggests that there is no clinically relevant difference between SMT and other interventions for reducing pain and improving functional status in patients with chronic LBP.</p> <p>2. Further research is likely in order to have important impact on the confidence to estimate effect in relation to inert interventions and sham SMT and data</p>

			return to work and quality of life.		related to recovery.
TENS	Khadilkar, et al, 2008	To determine whether TENS is more effective than placebo for the management of chronic LBP	Only RCT's comparing TENS to placebo in patients with chronic LBP were included	<p>4 high quality RCT's met the selection criteria. Clinical heterogeneity prevented the use of meta analysis</p> <p>a. There is conflicting evidence about whether TENS is beneficial in reducing pain intensity and consistent evidence in 2 trials that it did not improve back specific functional status.</p> <p>b. Moderate evidence that work status and the use of medical services did not change with treatment.</p> <p>c. Conflicting results regarding generic health status, with one study showing no improvement on the modified Sickness Impact profile and another study showing significant improvements on several, but not all subsections of the SF 36 questionnaire.</p> <p>d. Multiple physical outcome measures lacked statistically significant improvement relative to placebo</p> <p>e. Patients treated with acupuncture like TENS responded similarly to those treated with conventional TENS. However inadequate stimulus intensity was used for acupuncture like TENS, given that muscle twitching was not induced.</p>	<p>1. Evidence from small number of placebo controlled trials do not support the use of TENS in the routine management of chronic LBP.</p> <p>2. Further research is encouraged.</p>
Traction	Clarke et al, 2007	To determine the tractions effectiveness, compared to reference treatments, placebo, sham traction or no treatment for LBP	RCT's involving traction to treat acute (< 4 weeks duration), sub acute (4-12 weeks), or chronic (> 12 weeks) non specific LBP with or without sciatica	<p>25 RCT's were included, 5 were considered to be of high quality</p> <p>a. For the patients with mixed symptom patterns (acute, sub acute, chronic or with sciatica) , there is strong evidence of non statistically significant difference in outcomes between traction as a single treatment and placebo, sham or no treatment</p> <p>b. Moderate evidence that traction as a single treatment is no more effective than other treatments.</p> <p>c. Limited evidence of no significant difference in outcomes between a standard physical therapy program with or without continuous traction.</p> <p>d. Conflicting evidence for patients with sciatica in several comparisons: 1. Auto traction compared to placebo, sham or no treatment. 2. Other forms of traction compared to other treatments 3. Different forms of traction</p>	<p>1. For patients with mixed symptoms: continuous or intermittent traction as a single treatment is not likely to be effective.</p> <p>2. Traction for patients with sciatica cannot be judged effective at present either due to inconsistent results and methodological problems in most studies.</p> <p>3. Future research should distinguish between symptom pattern and duration, and should be carried out according to the highest methodological standards.</p>
Back schools	Heymans et al, 2004	To assess the effectiveness of back schools for patients with non specific LBP	RCT's that reported on any type of back school for non specific LBP	<p>19 RCT's were included. 6 were considered to be of high quality</p> <p>a. Moderate evidence suggests that back schools have better short and intermediate term effects on pain and functional status than other treatments for patients with</p>	<p>1. Moderate evidence for effectiveness of back schools</p> <p>2. Future trials should improve</p>

				<p>recurrent and chronic LBP</p> <p>b. Moderate evidence suggests that back schools, in an occupational setting, are more effective than other treatments and placebo or waiting list controls on pain, functional status, and return to work during short and intermediate term follow up.</p>	<p>methodological quality and clinical relevance and evaluate cost effectiveness of back schools.</p>
Lumbar supports	Van Duijvenbo de et al, 2008	To assess the effects of lumbar supports for prevention and treatment of non specific LBP	RCT's that report on any type of lumbar supports as preventive or therapeutic intervention for non specific LBP	<p>7 preventive and 8 treatment studies were included.</p> <p>a. Overall the methodological quality of the studies was low. Only 5 out of 15 studies met 50% or more of internal validity items.</p> <p>b. There is moderate evidence that lumbar supports are not more effective than no intervention or training in preventing LBP and conflicting evidence whether lumbar supports are effective supplements to other preventive interventions.</p>	<p>1. It is unclear whether lumbar supports are more effective than no or other interventions for LBP.</p> <p>2. There is still a need for high quality trials on effectiveness of lumbar supports.</p> <p>3. Special attention should be paid to different outcome measures, type of patients and types of lumbar support.</p>
Bed rest /advice to stay active	Dahm et al, 2010	To determine the effects of advice to rest or in bed or stay active for patients with acute LBP or sciatica	RCT's of the effectiveness of advice to stay active or rest in bed for patients with acute LBP or sciatica. Main outcomes were pain, functional status, recovery and return to work	<p>10 RCT's with varying risk of bias were included</p> <p>a. Results from two trials suggest small improvements in pain relief and functional status by staying active in acute LBP.</p> <p>b. For sciatica there is moderate evidence or no difference in pain relief or functional status between advice to stay active or rest in bed.</p>	<p>1. Moderate quality of evidence that patients with acute LBP may experience small benefits in pain relief and functional improvement from advice to stay active than to rest in bed.</p> <p>2. Patients with sciatica experience little or no difference between the two approaches.</p> <p>3. Low quality evidence suggests no difference in pain relief or function b/w those who received advice to stay active, exercises or physiotherapy.</p>
Physical conditioning program	Schaafsm a et al, 2010	To compare the effectiveness of physical conditioning programs in reducing time lost from work for workers with back pain.	RCT's and cluster RCT's that studied workers with work disability related to back pain and who were included in physical conditioning programs.	<p>Out of 23 RCT's, 13 had a low risk bias. In 14 studies, physical conditioning programs were compared to usual care.</p> <p>a. No effect on sickness absence in workers with acute LBP.</p> <p>b. Results are conflicting for sub acute LBP, subgroup analysis showed a positive effect of interventions with workplace involvement.</p> <p>c. Small effect on sickness absence at long</p>	<p>1. Effectiveness of physical conditioning programs in reducing sick leave when compared to usual care in workers with back pain is uncertain.</p> <p>2. No effect in acute LBP, though there may be a positive</p>

				term follow up in chronic LBP. Conflicting results when physical conditioning programs were compared to other exercise programs in 6 studies. d. Addition of cognitive behavioral therapy to physical conditioning was not found to be effective.	effect on workers in sub acute and chronic LBP. 3. Workplace involvement might improve the outcome.
Behavioural treatment	Henschke et al, 2010	To determine the effects of behavioral therapy for chronic LBP and the most effective behavioural approach	RCT's on behavioural treatments for non specific chronic LBP were included	30 trials were included. 14 had low risk of bias. There was moderate quality evidence that: a. Operant therapy was more effective than waiting list for short term pain relief b. Little or no difference existed between operant, cognitive, or combined behavioural therapy for short to intermediate term pain relief c. Behavioural treatment was more effective than usual care for short term pain relief, but there were no differences in the intermediate to long term, or on functional status. d. There was little or no difference between behavioral treatment and group exercise for pain relief or depressive symptoms over the intermediate to long term e. Addition of behavioural therapy to inpatient rehabilitation was no more effective than inpatient rehabilitation alone	1. For patients with chronic LBP there is moderate quality evidence that in short term, operant therapy is more effective than waiting list and behavioural therapy is more effective than usual care for pain relief, but no specific type of behavioural therapy is more effective than other, however there is little or no difference in intermediate to long term.
Superficial heat or cold	French et al, 2006	To assess the effects of superficial heat and cold therapy for low back pain in adults	RCT's and non randomized controlled trials that examined superficial heat or cold therapies in people with LBP	9 trials were included. a. In 2 trials with a mix of acute and sub acute LBP, heat wrap therapy significantly reduced pain after 5 days compared to oral placebo. b. One trial found that heated blanket significantly decreased acute LBP immediately after application c. Another trial examined additional effects of adding exercise to heat wrap and found that it reduced pain after 7 days in a mixed group of acute, sub acute and chronic patients. d. Insufficient evidence to evaluate the effects of cold for LBP and conflicting evidence for any differences between heat and cold for LBP.	1. Moderate evidence that superficial heat wrap therapy provides short term reduction in pain and disability in a population with a mix of acute and sub acute LBP and that addition of exercise further reduces pain and improves function 2. Evidence for cold treatment for LBP is even more limited, more trials are needed. 3. Conflicting evidence to determine the differences between heat and cold for LBP.
Individual patient education	Engers et al, 2008	To determine whether individual patient education is effective in treatment of non specific	RCT's If patients experienced LBP; if type of intervention concerned individual patient education	24 RCT's were included, 14 were of high quality a. For patients with sub acute LBP, there is strong evidence that an individual 2.5 hour oral session is more effective on short term and long term return to work than no intervention	1. For patients with acute or sub acute LBP, intensive patient education seems to be effective. 2. For chronic LBP

		LBP and which type is most effective		<p>b. Individual education for patients with was found to be as effective as non educational interventions on long term pain and global improvement in sub acute LBP but less effective for back pain specific function when compared to more intensive interventions in chronic LBP patients.</p> <p>c. Comparison of different types of individual education did no show significant differences.</p>	patients effectiveness of individual education is still unclear.
Manual material handling (MMH) device and use of assistive devices	Verbeck et al, 2011	To determine the effectiveness of MMH advice and training and the provision of assistive devices in preventing back pain in workers exposed to MMH	<p>RCT's and cohort studies with a concurrent control group that were aimed at changing human behavior in MMH and measured back pain, back pain related disability or sickness absence</p> <p>Studies compared training to no intervention, professional education, a video, use of a back belt or exercise. The intensity of training ranged from a single educational session to very expensive personal biofeedback</p>	<p>9 RCT's and 9 cohort studies were included.</p> <p>a. None of the included studies showed evidence of a preventive effect of training on back pain.</p> <p>b. 7 RCT's reported moderate quality evidence that those who received training reported levels of back pain similar to those who received no intervention, or minor advice (video).</p> <p>c. The results of cohort studies were similar to those of the randomized studies.</p>	<p>1. There is moderate quality evidence that MMH advice and training with or without assistive devices does not prevent back pain or related disability when compared to no intervention or alternative interventions.</p> <p>2. More high quality studies could further reduce the remaining uncertainty.</p>
Insoles	Sahar et al, 2007	To determine the effectiveness of shoe insoles in the prevention and treatment of non specific LBP compared to placebo, no intervention, or other intervention	<p>RCT's that examined the use of customized or non customized insoles, for the prevention or treatment of back pain compared to placebo, no intervention or other interventions.</p> <p>Outcomes had to include at least one of following: self reported incidence or physician diagnosis of back pain, pain intensity, duration of back pain, absenteeism, functional status.</p> <p>Studies of insoles designed to treat limb length discrepancy were excluded.</p>	<p>6 RCT's were included: 3 examined prevention of back pain and 3 examined mixed populations without being clear whether they were aimed at primary or secondary prevention or treatment. No treatment trials were found</p> <p>a. Strong evidence that insoles do not prevent LBP.</p>	<p>1. Review reflects limitations of literature, including low quality trials with heterogeneous interventions and outcome measures, poor blinding and poor reporting.</p>

Effective interventions in Low back pain

The non specific LBP is categorized according to the duration of symptoms as acute, sub acute and chronic and the interventions found to be effective for LBP are summarized in Table 2.

Table 2: Evidence Based Effective Interventions in Low Back Pain

Intervention	Acute LBP	Sub acute LBP	Chronic LBP
Exercise	Effective as either no treatment or other conservative treatments	Graded activity program improves absenteeism outcomes	Slightly effective in decreasing pain and improving function
Massage		Might be beneficial especially when combined with exercises and education	Might be beneficial especially when combined with exercises and education
Multidisciplinary bio psychosocial rehabilitation		Positive effectiveness and workplace visit enhances effectiveness	
Spinal manipulative therapy (SMT)			Has a small statistically significant but no clinically relevant difference when compared with other interventions for reducing pain and disability
Back schools			Moderate evidence for better short and intermediate term effects on pain and functional status than other treatments in recurrent and chronic LBP
Bed rest /advice to stay active	Moderate evidence for small benefits in pain relief and functional improvement from advice to stay active than to rest in bed		
Physical conditioning program	No effect	May have a positive effect	May have a positive effect
Behavioral treatment			Moderate evidence that short term, operant therapy is more effective than waiting list and behavioral therapy is more effective than usual care for pain relief
Superficial heat	Moderate evidence for short term reduction in pain and disability	Moderate evidence for short term reduction in pain and disability	
Individual patient education	Intensive patient education seems to be effective.	Intensive patient education seems to be effective.	Effectiveness is unclear

In effective interventions in Low back pain

Interventions found to be ineffective are summarized in Table 3.

Table 3: Evidence Based Ineffective Interventions in Low Back Pain

Intervention	Evidence
TENS	Evidence does not support the use of TENS in the routine management.
Traction	strong evidence of non statistically significant difference in outcomes between traction as a single treatment and placebo, sham or no treatment

Interventions having insufficient evidence in Low back pain

Interventions that yielded inconclusive results and need future trials to reach a decision are summarized in Table 4.

Table 4: Interventions having Insufficient Evidence for Low Back Pain

Intervention	Evidence
Laser	Insufficient data to draw firm conclusions on the clinical effect on LBP
Lumbar supports	Unclear whether lumbar supports are more effective than no or other interventions for LBP
Superficial cold	Evidence is limited, more trials are needed. Conflicting evidence to determine the differences between heat and cold for LBP

Manual material handling (MMH) device and use of assistive devices	Moderate quality evidence that MMH advice and training with or without assistive devices does not prevent back pain or related disability when compared to no intervention or alternative interventions. More high quality studies are required
Insoles	Strong evidence that insoles does not prevent LBP, more trials are needed

DISCUSSION

The results of the review indicate efficacy of superficial heat, patient education and advice to stay active than bed rest in acute LBP. Graded activity exercise, superficial heat, massage, physical conditioning and individual patient education have a positive effect in sub acute LBP. Exercise, massage, spinal manipulative therapy, back schools, physical conditioning programs are moderately effective in chronic LBP. Tens and traction are found to be ineffective in LBP besides the duration of symptoms. Evidence is inconclusive about the role of laser, lumbar supports, superficial cold, use of insoles, advice on manual material handling and use of assistive devices. As back pain is often associated with disability and is multifactorial in nature, a comprehensive approach to management should cater psychosocial co morbidities. Multidisciplinary bio psychosocial rehabilitation and behavioral therapy have been found to be at least moderately effective in sub acute to chronic LBP.

Regardless of the results showing efficacy of interventions, most the studies have been found to have methodological short comings in terms of heterogeneity of the patient population, small sample sizes, no description of randomization procedures, no description of drop outs, no placebo control groups, lack of blinded outcome assessments, inconsistent or poor reporting, heterogeneous outcome measures, and possibility of publication bias.

The heterogeneity of the non specific LBP population cannot be ignored. It is likely that non specific LBP consists of several distinct sub groups each with its own causal mechanisms and thus with its own potential set of beneficial treatments. Patients within a sub group for which a specific treatment is of benefit may be rendered statistically invisible by the number of patients in subgroups for which actual harm or no demonstrable benefits occur from that treatment (Petersen, 2003). There is a need to establish a classification system for non specific LBP that would allow determining how subgroups differ in terms of natural course and whether treatment and management strategies could be tailored to each subgroup. This should be followed by designing future trials of high methodological quality.

An alternative perspective to this sub grouping approach may be that the clinical trials are correct and that the current treatments have limited efficacy particularly for chronic non specific LBP. Recent evidences that demonstrate changes within the brain in chronic LBP sufferers raise the possibility that persistent back pain may be a problem of cortical reorganization and degeneration. Thus this may offer an explanation for the complex problem of chronic LBP and a potential focus for effective treatment (Wand and O'Connell, 2008).

CONCLUSION

It has been observed that literature is inconclusive for most of the physical therapy modalities, the probable reason being the heterogeneity of the umbrella term non specific LBP and poor methodological quality of the trials. Thus there is a need to redefine and classify non specific LBP and design future trials of high quality. Alternatively the current approaches may be ineffective as much of the literature on chronic LBP does not support the sub grouping model and thus the clinician's and researchers need to rethink the nature of the problem and its management.

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