SURVEY REPORT

Management practices in myofascial pain syndrome among physical therapists in Karachi, Pakistan: A cross sectional survey

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Abstract

Objective: To investigate the treatment practice in myofascial pain syndrome among physical therapists in an urban setting.

Method: The cross-sectional study was conducted from June to December, 2016, at the Institute of Physical Medicine and Rehabilitation, Dow University of Health Science, Karachi Pakistan, and comprised qualified physical therapists of either gender working at various health centres in the city. Data was collected using a self-administered questionnaire, and was analysed using SPSS 16.

Result: Of the 93 respondents, 37(39.8%) were males and 56(60.2%) were females; 39(41.9%) had Masters level professional education; and 29(31.2%) had 5-8 years of experience. Myofascial Pain Syndrome was diagnosed through physical examination by 78(83.9%) subjects, on the basis of history by 70(75.3%) and palpable band by 75(80%). Preferred treatment strategy was ischaemic compression for 63(67.7%) and postural re-education for 64(68.8%), while dry needling was used by 29(31.2%) subjects. Also, 75(80%) therapists preferred manual therapy superior combined with other treatments.

Conclusion: Physical examination was found to be the most common diagnostic method used for myofascial pain syndrome by the therapists.

Keywords: Myofascial pain syndrome, Trigger points, Evidence-based practice, Physiotherapy, Treatment, Diagnosis.
(JPMA 70: 1220; 2020) **DOI: https://doi.org/10.5455/JPMA.13725**

Introduction

Myofascial pain syndrome (MPS) is amongst the most challenging illnesses often encountered by physical therapists in the clinical setups.[1] MPS is a muscular pain syndrome with regional symptoms which leads to different functional impairments and sometime disability.[2] MPS can be acute and chronic which is characterised by sensory, motor and autonomic symptoms, including myofascial trigger points (MTrPs) which is the hallmark clinical feature seen in the affected patients.[3] MTrPs are usually extreme aching nodules or lumps in the skeletal muscles or link with the connective tissues fascia in any body part[4] and they are characterised as active or latent depending on their clinical characteristics.[5,3] Various factors contribute to the progression of MTrPs, such as overuse, misuse, severe trauma, psychological stress[6,2] postural defect and joint dysfunction.[7,2] Active MTrPs also exist in whiplash injuries and chronic diseases such as mechanical neck pain,[8,9,2] osteoarthritis[10] shoulder pain and tennis elbow.[11]

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The lifetime prevalence of MPS is 85% in the general population.[12] The lifetime incidence in clinical practice of MPS is 30-50%.[13] There is evidence that trigger point causing musculoskeletal soreness mainly go un-diagnosed by both medical professionals and physical therapists, leading to chronic stipulations.[14]

The reason could be the lack of universally accepted standard diagnostic criterion, such as biochemical, electro-diagnostic testing and diagnostic imaging. Yet, the universally preferred definition is that MPS is a disorder characterised by chronic or acute non-specific aching that irritates negligible number of muscles and have one or many MTrPs that frequently are found in a tight band in the affected muscles. The MTrPs are usually diagnosed by history and confirmation is made by physical examination which includes palpable band, spotted tenderness, jump sign and limited range of motion (ROM).[3,11] According to a study, the methodologies of MTrP diagnosis have certain deviations.[15] There are different types of test and measures/investigations, but unfortunately there is no particularly single method to diagnose MPS.

MTrP tenderness and radiating ache is sufficient diagnostic tool to initiate the treatment at the symptomatic level, but the initiation of the treatment

procedure holistically depends on the accurate diagnosis of MPS. Further measures are essential to thoroughly deal with a patient's problem. People have active or latent MTrPs that are not associated with their medical problems or are unrelated /confusing co-morbidities.[16]

Manual therapy,[17] electrotherapy,[18] MTrP pressure release,[19] transverse friction massages[20] ultrasound,[21] cryotherapy, stretch and spray are often overlooked therapy methods in the conservative management of MPS.[22] However, another curative approach ,which has been studied by many researchers and has been found to be very effective, is dry needling and acupuncture.[8,23,24]

Although there are many treatment choices that have proved to be effective, lots of discrepancies have been observed in clinical practice in local physiotherapy setups. MPS, already a complex syndrome, needs an accurate diagnosis and timely treatment. The current study was planned to investigate diagnosis and treatment practices related to MPS in an urban setting.

Subjects and Method

The cross-sectional study was conducted from June to December, 2016, at the Institute of Physical Medicine and Rehabilitation, Dow University of Health Science (DUHS), Karachi, Pakistan, and comprised qualified physical therapists of either gender working at various health centres in the city. After getting approval from the DUHS ethics review board, the sample size was calculated using Open-Epi Version 3[26] open source calculator at 95% confidence level while keeping the following parameters: Population size (N):1000000, Hypothesised % frequency of outcome factor in the population (p):39.8%+/-10, Confidence limits as % of 100(absolute +/- %) (d): 10% and Design effect (for cluster surveys-DEFF) Formula used was $n = [DEFF*Np(1-p)]/ [(d^2/Z^2_{1-\alpha/2}*(N-1)+p*(1-p)]$.[12]

Using non-probability purposive sampling technique, the sample was raised from among the professionals working at the Ziauddin Medical University (ZMU), Hill Park Hospital (HPH), Baqai Medical University (BMU), Liquat National Hospital (LNH) and DUHS. Those included were physical therapists with a degree of doctor of physical therapy (DPT) or Bachelor of Studies in physical therapy (BSPT) or Master of Studies in physical therapy (MSPT) or Master of Philosophy (M.Phil) or Doctor of Philosophy (PhD) in physical therapy. Physiotherapy assistants and students with incomplete course work were excluded.

Data was collected using a pre-designed self-administered questionnaire based on literature[11] which included closed and open-ended questions. The first part included name, age, gender, years of experience, zone of work institution, and qualification. The second part included diagnosis and treatment practices in MTrPs. The questionnaire required 5-10 minutes to complete after the purpose of the study was explained and informed consent was obtained. Approval was also taken from the respective heads of the departments.

Data was analysed using SPSS16. Frequencies and percentages were calculated for sample characteristics, treatment methods, diagnosis methods, and outcome. Graphical representation of data was done using Microsoft Excel 2007.

Result

Of the 93 respondents, 37(39.8%) were males and 56(60.2%) were females. In terns of qualification, 39(41.9%) subjects had done MS/M.Phil, 24(25.8%) BSPT, 29(31.2%) DPT, and 1(1.1%) PhD. Regarding experience, 29(31.2%) subjects had 5-8 years of professional experience, 20(21.5%) had <1 year, 22(23.7%) 1-4 years, 14(15.1%) 9-12 years, and 8(8.6%) had been in the field for >13 years. Overall, 92(98.9%) subjects had treated MTrPs;

Table: Demographic and participants characteristics (N=93).

Variable	(%) Frequencies	Variable	(%) Frequencies
1. Gender		**6. % Common Patients**	
Male	37(39.8)	0-20	15(16.1)
Female	56(60.2)	20-40	22(23.7)
2. Qualification		40-60	36(38.7)
Bachelor\	24(25.8)	60-80	15(16.1)
MS(M.PHIL) MSC	39(41.9)	80-100	5(5.4)
DPT	29(31.2)	**7. Treatment Frequency of Patients**	
PhD\	1(1.1)	Once	6(6.5)
3. Experience Year		Daily	25(26.9)
< 1	20(21.5)	Alternate Days	43(46.2)
1-4	22(23.7)	Weekly	13(14.0)
5-8	29(31.2)	Every Three Days	6(6.5)
9-12	14 (15.1)	**8. Time of Session**	
13 or above	8(8.6)	10 min	26(28.0)
4. Daily Patient Assess		20 min	48(51.6)
NONE	5(5.4)	30 min	17(18.3)
1-10	42(45.2)	60 min	0(0)
11-20	14(15.1)	Other	2(2.1)
21-30	8(8.6)	**9. Outcome Measure**	
31-40	11(11.8)	VAS *	70 (75.3)
40-Above	13(14.0)	NPS *	33(35.5)
5. Patient With MTrPs		SAPS*	9(9.7)
Treated patients	92(98.9)	**10. Patients Referred**	
EBPG*	59(63.4)	To Physician	46(49.5)

VAS*: Visual Analog Scale; MTrPS: Myofascial trigger Points; M.Phill: Master of Philosophy; MSc: Master of Science; MS: Master of Studies; DPT: Diploma in Physiotherapy; PhD: Doctor of Philosophy.
NPS*: Numerical pain scale.
SAPS*: Subjective assessment patient satisfaction.
EBPG*: Evidence-based practice guideline.

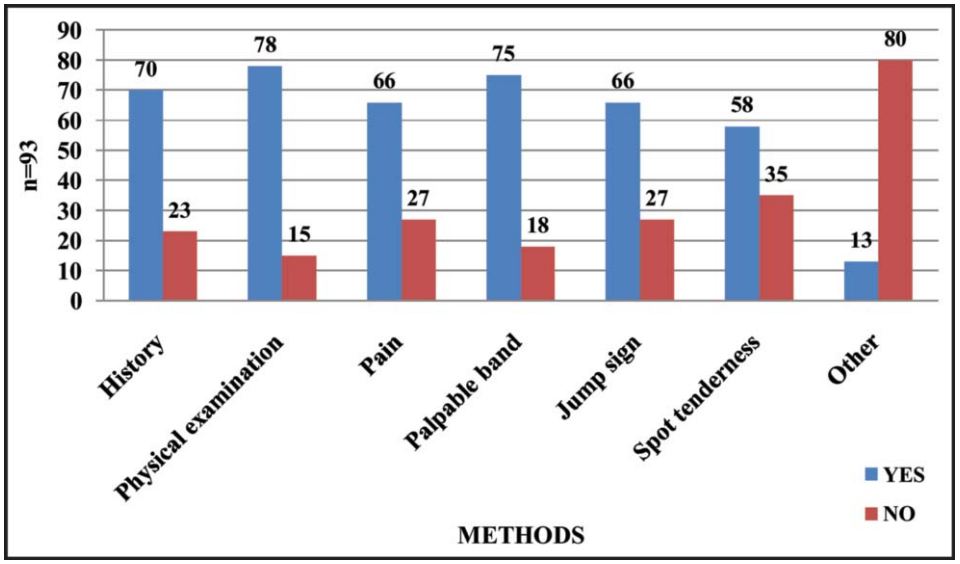
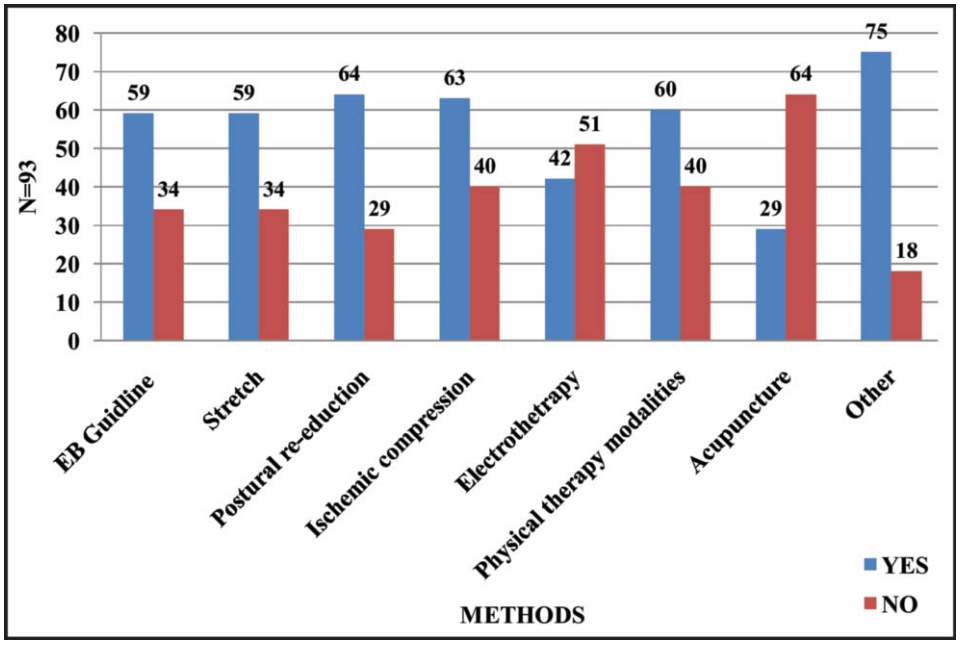


Figure-1: Diagnosis Methods.



EB: Evidence-based.

Figure-2: Treatment Methods.

43(46.2%) gave treatment on alternate days; 48(51.6%). Set the treatment session time at 20 minutes; the outcome was measured using the visual analogue scale (VAS) by 70(75.3%); 59(63.4%) followed evidence-based practice guidelines (EBPG); and 46(49.5%) referred patients to a physician (Table).

Physiotherapists using physical examination for the diagnosis of MTrPs were 78(83.9%) (Figure-1).

Physical therapists used different treatment strategies like postural re-education 64(68.8%), ischemic compression 63(67.7%), physiotherapy modalities 60 (64.5%), stretch and sprays 59 (63.4%), electrotherapy 42 (45.2%), acupuncture 29 (31.2%), and other treatment 75(80%) (Figure-2).

Discussion

To the best of our knowledge, the current study is the first survey in Pakistan to assess the clinical importance of MPS and physiotherapists' preference from among the most common treatment options.

The most common way of diagnosis was on the basis of physical examination. There is evidence in literature that there is no standard criterion to diagnose MPS(15).

The result showed the participation of both male and female physical therapists and most of our subjects working in the clinical setups had masters level of education, indicating that the level of education has gone up in the field in recent years in our part of the world.

The main finding of our study showed that 98.9% of physical therapists experienced treating patients with trigger point at some point in their lives. As such, it is safe to assume that trigger point is highly prevalent in society. However, no such study has been carried out to show the prevalence of trigger point in the local community.

Another important finding of the current study is that 59(63.4%) physical therapists followed EBPG, but it was not explored which specific guideline they followed.

In terms of treatment preference for MTrPs, majority of the therapists used ischemic compression and postural re-education, indicating sound knowledge regarding the effectiveness of both therapies. A study has shown the effectiveness of ischemic compression followed by stretching which gives significant results on myofascial trigger point of trapezius.[25]

Among the physiotherapy modalities used, the most common modality was ultrasound (US). Few studies have shown the effectiveness of US in MTrP therapies.[18,21,24]

Contrary to various researches done in western countries on the effectiveness of acupuncture and dry needling in MTrPs,[8,23,24] these techniques were rarely used by our subjects. This aversion needs to be further studied.

Most physiotherapists preferred a combination of additional therapies and very few used any single treatment. The combination therapies comprised manual therapy as the common option along with any other treatment.

A systematic review did not provide any rigorous evidence that manual therapies are effective compared to placebo in the management of MPS.[17]

It is also vital to provide adequate education to the patients and to encourage dependence on proper home-based programmes so that recurrent aches can be avoided. The current study did not explore practices in this regard.

The current study has several features making it a strong observational survey, as it is the first of its kind, and comprised qualified physiotherapists. The response rate of 100% is also a remarkable feature even though it was a multi-centre study. As such, the study is a valuable sample of Karachi.

The small sample size was a limitation of the study. The diversity of diagnostic and treatment methods used stresses the need for further researches to identify the potentially effective treatment.

Conclusion

Physical examination was the most common diagnostic method used for MPS by the physiotherapists, while a large number of treatment techniques were used to treat the condition.

Disclaimer: None.

Conflict of Interest: None.

Source of Funding: None.

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