

# Physiotherapy Treatment Preferences for Common Musculoskeletal Problems across Pakistan

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## Abstract

**Background:** Musculoskeletal disorders are the frequent and serious hazards of the health in the overall world. Poor guidance to the individuals with musculoskeletal disorders can cause increase in intensity of pain and can alter the disability factor Physiotherapists have a major role in dealing musculoskeletal disorders as they use their clinical expertise to access and treat patients in order to reduce and relieve the pain and treat muscle weakness, loss of stability, and limited functional disabilities

**Objective:** To determine the physiotherapy treatment preferences for common musculoskeletal problems across Pakistan.

**Material and Method:** In this study 5 point likert scale was used to check the treatment preferences in which some are strongly agree, agree, while on the other hand some are disagree and strongly disagree and some shows no response or neutral reactions.

## Results:

Variable	Frequency	Percentage
Male	119	54.8
Female	98	45.2

A total of 217 physiotherapists participated in the study. Out of total 54.8% were males and 45.2% were females. Their treatment preferences for 14 common musculoskeletal disorders of upper extremity, lower extremity and spine were asked and responses were recorded in the form of 5 point Likert scale

## Conclusion

The most preferred treatment options were cryotherapy for Ankle Sprain, pain medication for Frozen Shoulder, anti-inflammatory agents for Plantar Fasciitis, heel lifts for Achilles Tendonitis, cervical mobilization/manipulation for Neck Pain, nerve gliding exercises for Cubital Tunnel Syndrome, strengthening exercises for Golfer Elbow, manual therapy for Knee Osteoarthritis, stretching for Piriformis Syndrome, therapeutic exercises for Hip Osteoarthritis, pain medication for Tennis Elbow, electrotherapy for Carpal Tunnel Syndrome, strengthening exercises for Low Back Pain, range of motion exercises for Rotator Cuff Tendonitis, and strengthening exercises for SIJ Dysfunct.

**Keywords:** physiotherapy treatment; musculoskeletal problems; cryotherapy

## Introduction

Musculoskeletal disorders are the frequent and serious hazards of the health in the overall world. They are the one notorious cause of short and

long term ailment and can cause number of health hazards among individuals [1]. Musculoskeletal conditions can cause a major load on the people belonging to the generalized population [2]. Poor guidance to the individuals with musculoskeletal disorders can cause the increase in

intensity of pain and hence multiplying the disability factor, therefore individuals have to be referred earlier to the physiotherapist for the better treatment of musculoskeletal disorders [3]. Musculoskeletal disorders in majority of cases affect the bones, joints and connective tissues. Physiotherapists play a major role in dealing with musculoskeletal disorders as they use their clinical expertise to assess and treat patients that help in relieving pain and improving muscle strength, joint stability and hence improving functional outcomes. This definitely increases the patient's physical ability with a better quality of life [4]. The process of returning patients with musculoskeletal disorders back to work constitutes a number of challenges. Muscle pain and joint pain are being treated by physiotherapists with manipulations and mobilization techniques from the past few decades. Posture correction, stretching, strengthening and ergonomics can be on higher priority while treating the musculoskeletal disorders. The level of pain can be decreased by the effective treatment options applied on the individuals [5]. Treatment options for musculoskeletal disorders prescribed by physiotherapists are usually Ultrasound, cast for warming the muscles that encourages flesh curing, Electric Stimulus and Laser also used for muscular distress, Carpal tunnel syndrome, Rheumatoid arthritis and Osteoarthritis. Therapeutic exercises like shut kinematic run, concentric, central solidness, odd, isotonic and open vibrant series are used for recovery in muscle strength, relieving pain, muscle matching and muscle taming [6].

## Objective

To determine the physiotherapy treatment preferences for common musculoskeletal problems across Pakistan

## Rationale:

The main focus of the research is to determine how physiotherapists deal with patients having musculoskeletal problems and getting knowledge about best protocols for these patients. In this way we could get treatment preferences of physiotherapists

## Literature Review

**Danielle A.W.M van der et al** has performed that research the *Ultrasound therapy is handy for taming pain in Musculoskeletal disorders*. They estimated the efficacy of Ultrasound treatment. They concluded that due to efficacy of ultrasound in the managing of musculoskeletal disorders, it should be added in management [7].

According to another study there are many non-morphological cures for slight spinal pain. This study assessed the aids and evils in acupuncture, psychological cures and physical cures (Laser, Short Wave Diathermy, Superficial heat, TENS) for acute, sub acute and chronic low back pain [8].

Another randomized study included symptomatic patients with meniscal tear and having Osteoarthritis knee joint. This trial showed that arthroscopic keyhole meniscectomy for meniscal tear was better than non-operative therapy [9].

A randomized trial study evaluated the outcomes of physical therapy in patients with recurrent neck pain. It included simple isometric neck movements and strengthening exercises of neck muscles. The result showed effective outcome in terms of relieving symptoms. It didn't work in females with long-term, non-specific neck pain with anxiety [10].

Another study revealed the role of physical therapy in knee osteoarthritis. It determined that physical therapy in terms of somatic therapy was effective for patients with OA [11].

A study showed the value of recovery with the classic physical therapy that limit the use of neck collar. It concluded that the earlier and regular physiotherapy had better outcomes than the short-lived intermittent physiotherapy for neck pain [12].

Another study showed effectiveness of surgery for lumbar inter-vertebral disc herniation as compared to non-operative treatment. It concluded that both the non-operative (such as NSAIDs, Cyclic oxygenase inhibitors 2 or oral steroids) treatment and surgical treatment equally effective but surgical treatment with risk of an intraoperative complication that is dural tear [13].

Another study evaluated evidence based practice of physical therapists for patients with stroke. They concluded that evidence based practice was lacking in physical therapists because of lack of education and negative perception about research and physical therapy role in evidence based practice [14].

**Stuart L. Weinstein et al** has conducted a randomized cohort study. The aim was to evaluate the outcomes of surgery in teen children with idiopathic scoliosis using preoperative braces. They proved that bracing lead to better correction of curve in scoliotic patients after surgery. It further showed more better results if braces wear for longer hours [15].

## Operational definition:

In this study we use the 5 point Likert scale used to check the treatment preferences on musculoskeletal problems.

## Methodology

### Study design:

Descriptive cross-sectional

### Study population:

Data collected from Physiotherapists

### Study settings:

Data collected from overall Pakistan

### Study Duration:

6 months

### Sample size:

$$\text{Sample size} = \frac{Z_{1-\alpha/2}^2 p(1-p)}{d^2}$$

Sample size calculated is 217 by using above formula applying following parameters

$Z_{1-\alpha/2} = 1.96$  (Standard normal variate at 5% type I error ( $p < 0.05$ ))

$P = 0.83$  (Expected proportion in population) [16]

### Eligibility Criteria

Physiotherapists of government and private hospitals/clinics

### Inclusion criteria:

Physiotherapists with clinical experience and there is no age limit and gender differences

### Exclusion criteria:

Physical technicians, undergraduate internes, students, HSP (health service providers), Physiotherapists with no clinical experience.

## Data collection and procedure:

After the approval from relevant ethical committees we collected our data from physiotherapists of government and private hospitals and clinics from all over the Pakistan. Our sample size was 217 in which 119 were male and 98 were female physiotherapists. We chose 5 point likert scale for our questionnaire based on 14 common musculoskeletal problems and we work to find the most preferred treatment protocols used in hospital

and physiotherapy clinics in Lahore. Our questionnaire consisted of 5 points which were Strongly Agree, Agree, Neither, Disagree and Strongly Disagree using likert scale. After informed consent participants responded to questionnaire without any queries and data collected on prescribed Performa.

**Ethical issue:**

All measures were taken to ensure the privacy of subject. It will be done after the consent from concern ethical committee of institutes, hospitals and owners of private clinics to conduct the study in different institutes of major cities. The safety of data ensured.

**Results**

Variable	Frequency	Percentage
Male	119	54.8
Female	98	45.2

**Table 1** Socio-demographic Profile

A total of 217 physiotherapists participated in the study. Out of total 119 were males and 98 were females. Their treatment preferences for 14 common musculoskeletal disorders of upper extremity, lower extremity

and spine were asked and responses were recorded in the form of 5 point Likert scale.

Area	Treatment Preferences	Strongly Agree	Agree	Neither	Disagree	Strongly Disagree
Ankle Sprain	Early weight bearing with support	50(23.04%)	91(41.94%)	31(14.29%)	31(14.29%)	14(6.45%)
	Manual therapy	49(22.58%)	110(50.69%)	24(11.06%)	22(10.14%)	12(5.53%)
	Cryotherapy	89(41.01%)	89(41.01%)	27(12.44%)	8(3.69%)	4(1.84%)
	Diathermy	46(21.2%)	109(50.23%)	38(17.51%)	18(8.29%)	6(2.76%)
	Electrotherapy	44(20.28%)	109(50.23%)	40(18.43%)	18(8.29%)	6(2.76%)
	Lower level laser therapy	68(31.34%)	96(44.24%)	29(13.36%)	18(8.29%)	6(2.76%)
Plantar Fasciitis	Support related activity training	61(28.11%)	110(50.69%)	27(12.44%)	12(5.53%)	7(3.23%)
	Anti-inflammatory agents	76(35.02%)	113(52.07%)	18(8.29%)	8(3.69%)	2(0.92%)
	Manual therapy	47(21.66%)	103(47.47%)	43(19.82%)	21(9.68%)	3(1.38%)
	Stretching	47(21.66%)	110(50.69%)	33(15.21%)	18(8.29%)	9(4.15%)
	Taping	57(26.27%)	115(53%)	24(11.06%)	15(6.91%)	6(2.76%)
	Orthotic devices	50(23.04%)	117(53.92%)	30(13.82%)	9(4.15%)	11(5.07%)
Achilles Tendonitis	Night splints	35(16.13%)	107(49.31%)	46(21.2%)	23(10.6%)	6(2.76%)
	Eccentric loading	35(16.13%)	116(53.46%)	42(19.35%)	18(8.29%)	6(2.76%)
	Laser therapy	51(23.5%)	87(40.09%)	42(19.35%)	28(12.9%)	9(4.15%)
	Iontophoresis	51(23.5%)	113(52.07%)	33(15.21%)	14(6.45%)	6(2.76%)
	Stretching	37(17.05%)	119(54.84%)	45(20.74%)	13(5.99%)	3(1.38%)
	Foot orthosis	48(22.12%)	106(48.85%)	36(16.59%)	19(8.76%)	8(3.69%)
	Manual therapy	59(27.19%)	108(49.77%)	28(12.9%)	14(6.45%)	8(3.69%)
	Taping	57(26.27%)	94(43.32%)	39(17.97%)	19(8.76%)	8(3.69%)
Knee Osteoarthritis	Heel lifts	72(33.18%)	89(41.01%)	15(6.91%)	15(6.91%)	6(2.76%)
	Anti-inflammatory agents	51(23.5%)	112(51.61%)	32(14.75%)	16(7.37%)	6(2.76%)
	Functional gait and balance training	57(26.27%)	116(53.46%)	25(11.52%)	15(6.91%)	4(1.84%)
	Manual therapy	65(29.95%)	95(43.78%)	30(13.82%)	21(9.68%)	6(2.76%)
	Progressive weight bearing	42(19.35%)	121(55.76%)	32(14.75%)	15(6.91%)	7(3.23%)
	Progressive return to activity	48(22.12%)	118(54.38%)	37(17.05%)	12(5.53%)	2(0.92%)
	Supervised rehabilitation	53(24.42%)	124(57.14%)	27(12.44%)	12(5.53%)	1(0.46%)
	Therapeutic exercises	62(28.57%)	100(46.08%)	31(14.29%)	18(8.29%)	6(2.76%)
Neuromuscular electrical stimulation(NMES)	49(22.58%)	120(55.3%)	11(5.07%)	11(5.07%)	6(2.76%)	

<b>Hip Osteoarthritis</b>	Anti-inflammatory agents	60(27.65%)	123(56.68%)	18(8.29%)	10(4.61%)	6(2.76%)
	Functional gait and balance training	59(27.19%)	119(54.84%)	23(10.6%)	12(5.53%)	4(1.84%)
	Manual therapy	62(28.57%)	115(53%)	27(12.44%)	10(4.61%)	3(1.38%)
	Progressive weight bearing	40(18.43%)	126(58.06%)	30(13.82%)	15(6.91%)	6(2.76%)
	Progressive return to activity	51(23.5%)	125(57.6%)	25(11.52%)	12(5.53%)	4(1.84%)
	Supervised rehabilitation	43(19.82%)	137(63.13%)	21(9.68%)	13(5.99%)	3(1.38%)
	Therapeutic exercises	64(29.49%)	128(58.99%)	16(7.37%)	6(2.76%)	3(1.38%)
	Neuromuscular electrical stimulation(NMES)	52(23.96%)	120(55.3%)	11(5.07%)	11(5.07%)	6(2.76%)
<b>Piriformis Syndrome</b>	Aerobic and endurance training	55(25.35%)	113(52.07%)	27(12.44%)	18(8.29%)	4(1.84%)
	Balance coordination agility training	50(23.04%)	127(58.53%)	28(12.9%)	10(4.61%)	2(0.92%)
	Flexibility exercise	47(21.66%)	125(57.6%)	31(14.29%)	11(5.07%)	3(1.38%)
	Manual therapy	56(25.81%)	134(61.75%)	17(7.83%)	7(3.23%)	3(1.38%)
	Electric stimulation	54(24.88%)	127(58.53%)	21(9.68%)	11(5.07%)	4(1.84%)
	Cryotherapy	40(18.43%)	132(60.83%)	27(12.44%)	15(6.91%)	3(1.38%)
	Ultrasound	50(23.04%)	135(62.21%)	12(5.53%)	14(6.45%)	6(2.76%)
	Hydrotherapy	62(28.57%)	123(56.68%)	8(3.69%)	8(3.69%)	5(2.3%)
	Thermotherapy	55(25.35%)	126(58.06%)	22(10.14%)	11(5.07%)	3(1.38%)
	Stretching	65(29.95%)	116(53.46%)	24(11.06%)	8(3.69%)	4(1.84%)
Strengthening Exercise	50(23.04%)	149(68.66%)	9(4.15%)	8(3.69%)	1(0.46%)	
<b>SIJ Dysfunction</b>	Manual therapy	50(23.04%)	126(58.06%)	24(11.06%)	15(6.91%)	2(0.92%)
	Flexibility exercises	59(27.19%)	123(56.68%)	17(7.83%)	13(5.99%)	5(2.3%)
	Strengthening exercises	60(27.65%)	131(60.37%)	15(6.91%)	8(3.69%)	2(0.92%)
	Body mechanics	51(23.5%)	135(62.21%)	19(8.76%)	10(4.61%)	2(0.92%)
	Modalities Braces	53(24.42%)	136(62.67%)	18(8.29%)	10(4.61%)	0(0%)
<b>Low Back Pain</b>	Manual therapy	55(25.35%)	140(64.52%)	15(6.91%)	6(2.76%)	1(0.46%)
	Trunk coordination	55(25.35%)	134(61.75%)	21(9.68%)	7(3.23%)	0(0%)
	Strengthening exercises	58(26.73%)	129(59.45%)	16(7.37%)	11(5.07%)	3(1.38%)
	Centralization and Directional preferences exercises	57(26.27%)	132(60.83%)	19(8.76%)	6(2.76%)	3(1.38%)
	Flexion exercises	45(20.74%)	145(66.82%)	17(7.83%)	6(2.76%)	4(1.84%)
	Lower quarter nerve mobilization	38(17.51%)	149(68.66%)	22(10.14%)	4(1.84%)	4(1.84%)
	Traction	45(20.74%)	133(61.29%)	24(11.06%)	12(5.53%)	3(1.38%)
	Patient education and counseling	53(24.42%)	138(63.59%)	5(2.3%)	5(2.3%)	3(1.38%)
	Progressive endurance exercises	56(25.81%)	133(61.29%)	18(8.29%)	8(3.69%)	2(0.92%)
	Fitness activities	52(23.96%)	140(64.52%)	11(5.07%)	11(5.07%)	3(1.38%)
<b>Neck Pain</b>	Cervical mobilization/Manipulation	69(31.8%)	122(56.22%)	13(5.99%)	10(4.61%)	3(1.38%)
	Thoracic mobilization/manipulation	55(25.35%)	138(63.59%)	18(8.29%)	6(2.76%)	0(0%)
	Stretching exercises	58(26.73%)	135(62.21%)	12(5.53%)	9(4.15%)	3(1.38%)

	Coordination, Strengthening and endurance exercises	54(24.88%)	128(58.99%)	18(8.29%)	14(6.45%)	3(1.38%)
	Centralization procedures and exercises	59(27.19%)	131(60.37%)	18(8.29%)	7(3.23%)	2(0.92%)
	Upper quarter and nerve mobilization procedures	52(23.96%)	137(63.13%)	14(6.45%)	10(4.61%)	4(1.84%)
	Traction	62(28.57%)	129(59.45%)	12(5.53%)	9(4.15%)	5(2.3%)
<b>Rotator Cuff Tendonitis</b>	Pain medication	48(22.12%)	136(62.67%)	16(7.37%)	13(5.99%)	4(1.84%)
	Range of motion exercises	58(26.73%)	136(62.67%)	13(5.99%)	7(3.23%)	3(1.38%)
	Strengthening exercises	57(26.27%)	123(56.68%)	18(8.29%)	16(7.37%)	3(1.38%)
	Patient education	57(26.27%)	137(63.13%)	14(6.45%)	6(2.76%)	3(1.38%)
	Functional Training	59(27.19%)	123(56.68%)	22(10.14%)	9(4.15%)	4(1.84%)
<b>Frozen Shoulder</b>	Exercises and manual therapy	58(26.73%)	134(61.75%)	18(8.29%)	5(2.3%)	2(0.92%)
	Modalities	61(28.11%)	127(58.53%)	19(8.76%)	6(2.76%)	4(1.84%)
	Home exercise program	73(33.64%)	112(51.61%)	16(7.37%)	12(5.53%)	4(1.84%)
	Pain medication	84(38.71%)	110(50.69%)	18(8.29%)	3(1.38%)	2(0.92%)
	Stretching Techniques	72(33.18%)	120(55.3%)	17(7.83%)	6(2.76%)	2(0.92%)
<b>Golfer Elbow</b>	Strengthening exercises	58(26.73%)	144(66.36%)	10(4.61%)	5(2.3%)	0(0%)
	Range of motion exercises	66(30.41%)	125(57.6%)	14(6.45%)	12(5.53%)	0(0%)
	Pain medication	60(27.65%)	129(59.45%)	21(9.68%)	6(2.76%)	1(0.46%)
	Manual therapy	66(30.41%)	115(53%)	25(11.52%)	7(3.23%)	4(1.84%)
	Strengthening Exercises	67(30.88%)	123(56.68%)	18(8.29%)	7(3.23%)	2(0.9%)
<b>Tennis Elbow</b>	Functional Training	59(27.19%)	127(58.53%)	22(10.14%)	7(3.23%)	2(0.92%)
	Range of motion exercises	50(23.04%)	136(62.67%)	20(9.22%)	9(4.15%)	2(0.92%)
	Pain medication	62(28.57%)	126(58.06%)	17(7.83%)	7(3.23%)	5(2.3%)
	Manual Therapy	54(24.88%)	121(55.76%)	25(11.52%)	14(6.45%)	3(1.38%)
	Strengthening exercises	59(27.19%)	114(52.53%)	32(14.75%)	8(3.69%)	4(1.84%)
	Cryotherapy	61(28.11%)	129(59.45%)	18(8.29%)	6(2.76%)	3(1.38%)
<b>Carpal Tunnel Syndrome</b>	Elastic Bandages	60(27.65%)	132(60.83%)	16(7.37%)	6(2.76%)	3(1.38%)
	Sharp Utensils	35(16.13%)	147(67.74%)	22(10.14%)	8(3.69%)	5(2.3%)
	Stretch Breaks	45(20.74%)	138(63.59%)	23(10.6%)	8(3.69%)	3(1.38%)
	Ergonomic training	48(22.12%)	131(60.37%)	26(11.98%)	9(4.15%)	3(1.38%)
	Electrotherapy	61(28.11%)	129(59.45%)	20(9.22%)	6(2.76%)	1(0.46%)
	Stretching	43(19.82%)	142(65.44%)	17(7.83%)	10(4.61%)	5(2.3%)
<b>Cubical Tunnel Syndrome</b>	Strengthening exercises	50(23.04%)	146(67.28%)	10(4.61%)	8(3.69%)	3(1.38%)
	Range of motion exercises	47(21.66%)	153(70.51%)	14(6.45%)	3(1.38%)	0(0%)
	Muscle strengthening exercises	60(27.65%)	138(63.59%)	6(2.76%)	6(2.76%)	1(0.46%)
	Nerve gliding exercises	68(31.34%)	130(59.91%)	15(6.91%)	4(1.84%)	0(0%)
	Ergonomic training	58(26.73%)	132(60.83%)	18(8.29%)	6(2.76%)	3(1.38%)

**Table 2 Treatment Preferences**

In patients with ankle sprain, 50(23.04%) were strongly agreed that early weight bearing with support should be in the treatment plan, 91(41.94%) were agree, 31(14.29%) were neither agree not disagree, 31(14.29%)

were disagree, and 14(6.45%) were strongly disagree, 49(22.58%) were strongly agreed that manual therapy should be in the treatment plan, 110(50.69%) were agree, 24(11.06%) were neither agree not disagree,



22(10.14%) were disagree, and 12(5.53%) were strongly disagree, 89(41.01%) were strongly agreed that cryotherapy should be in the treatment plan, 89(41.01%) were agree, 27(12.44%) were neither agree not disagree, 8(3.69%) were disagree, and 4(1.84%) were strongly disagree, 46(21.2%) were strongly agreed that diathermy should be in the treatment plan, 109(50.23%) were agree, 38(17.51%) were neither agree not disagree, 18(8.29%) were disagree, and 6(2.76%) were strongly disagree, 44(20.28%) were strongly agreed that electrotherapy should be in the treatment plan, 109(50.23%) were agree, 40(18.43%) were neither agree not disagree, 18(8.29%) were disagree, and 6(2.76%) were strongly disagree, 68(31.34%) were strongly agreed that lower level laser therapy should be in the treatment plan, 96(44.24%) were agree, 29(13.36%) were neither agree not disagree, 18(8.29%) were disagree, and 6(2.76%) were strongly disagree, 61(28.11%) were strongly agreed that support related activity training should be in the treatment plan, 110(50.69%) were agree, 27(12.44%) were neither agree not disagree, 12(5.53%) were disagree, and 7(3.23%) were strongly disagree

In patients with plantar fasciitis, 76(35.02%) were strongly agreed that anti-inflammatory agents should be in the treatment plan, 113(52.07%) were agree, 18(8.29%) were neither agree not disagree, 8(3.69%) were disagree, and 2(0.92%) were strongly disagree, 47(21.66%) were strongly agreed that manual therapy should be in the treatment plan, 103(47.47%) were agree, 43(19.82%) were neither agree not disagree, 21(9.68%) were disagree, and 3(1.38%) were strongly disagree, 47(21.66%) were strongly agreed that stretching should be in the treatment plan, 110(50.69%) were agree, 33(15.21%) were neither agree not disagree, 18(8.29%) were disagree, and 9(4.15%) were strongly disagree, 57(26.27%) were strongly agreed that taping should be in the treatment plan, 115(53%) were agree, 24(11.06%) were neither agree not disagree, 15(6.91%) were disagree, and 6(2.76%) were strongly disagree, 50(23.04%) were strongly agreed that orthotic devices should be in the treatment plan, 117(53.92%) were agree, 30(13.82%) were neither agree not disagree, 9(4.15%) were disagree, and 11(5.07%) were strongly disagree, 35(16.13%) were strongly agreed that night splints should be in the treatment plan, 107(49.31%) were agree, 46(21.2%) were neither agree not disagree, 23(10.6%) were disagree, and 6(2.76%) were strongly disagree.

In patients with achilles tendonitis, 35(16.13%) were strongly agreed that eccentric loading should be in the treatment plan, 116(53.46%) were agree, 42(19.35%) were neither agree not disagree, 18(8.29%) were disagree, and 6(2.76%) were strongly disagree, 51(23.5%) were strongly agreed that laser therapy should be in the treatment plan, 87(40.09%) were agree, 42(19.35%) were neither agree not disagree, 28(12.9%) were disagree, and 9(4.15%) were strongly disagree, 51(23.5%) were strongly agreed that iontophoresis should be in the treatment plan, 113(52.07%) were agree, 33(15.21%) were neither agree not disagree, 14(6.45%) were disagree, and 6(2.76%) were strongly disagree, 37(17.05%) were strongly agreed that stretching should be in the treatment plan, 119(54.84%) were agree, 45(20.74%) were neither agree not disagree, 13(5.99%) were disagree, and 3(1.38%) were strongly disagree, 48(22.12%) were strongly agreed that foot orthosis should be in the treatment plan, 106(48.85%) were agree, 6(16.59%) were neither agree not disagree, 19(8.76%) were disagree, and 8(3.69%) were strongly disagree, 59(27.19%) were strongly agreed that manual therapy should be in the treatment plan, 108(49.77%) were agree, 28(12.9%) were neither agree not disagree, 14(6.45%) were disagree, and 8(3.69%) were strongly disagree, 57(26.27%) were strongly agreed that taping should be in the treatment plan, 94(43.32%) were agree, 39(17.97%) were neither agree not disagree, 19(8.76%) were disagree, and 8(3.69%) were strongly disagree, 72(33.18%) were strongly agreed that heel lifts should be in the treatment plan, 89(41.01%) were agree, 15(6.91%) were neither agree not disagree, 15(6.91%) were disagree, and 6(2.76%) were strongly disagree.

In patients with knee osteoarthritis, 51(23.5%) were strongly agreed that anti-inflammatory agents should be in the treatment plan, 112(51.61%) were agree, 32(14.75%) were neither agree not disagree, 16(7.37%) were disagree, and 6(2.76%) were strongly disagree, 57(26.27%) were strongly agreed that functional gait and balance training should be in the treatment plan, 116(53.46%) were agree, 25(11.52%) were neither agree not disagree, 15(6.91%) were disagree, and 4(1.84%) were strongly disagree, 65(29.95%) were strongly agreed that manual therapy should be in the treatment plan, 95(43.78%) were agree, 30(13.82%) were neither agree not disagree, 21(9.68%) were disagree, and 6(2.76%) were strongly disagree, 42(19.35%) were strongly agreed that progressive weight bearing should be in the treatment plan, 121(55.76%) were agree, 32(14.75%) were neither agree not disagree, 15(6.91%) were disagree, and 7(3.23%) were strongly disagree, 48(22.12%) were strongly agreed that progressive return to activity should be in the treatment plan, 118(54.38%) were agree, 37(17.05%) were neither agree not disagree, 12(5.53%) were disagree, and 2(0.92%) were strongly disagree, 53(24.42%) were strongly agreed that supervised rehabilitation should be in the treatment plan, 124(57.14%) were agree, 27(12.44%) were neither agree not disagree, 12(5.53%) were disagree, and 1(0.46%) were strongly disagree, 62(28.57%) were strongly agreed that therapeutic exercises should be in the treatment plan, 100(46.08%) were agree, 31(14.29%) were neither agree not disagree, 18(8.29%) were disagree, and 6(2.76%) were strongly disagree, 49(22.58%) were strongly agreed that neuromuscular electrical stimulation(nmes) should be in the treatment plan, 120(55.3%) were agree, 11(5.07%) were neither agree not disagree, 11(5.07%) were disagree, and 6(2.76%) were strongly disagree

In patients with hip osteoarthritis, 60(27.65%) were strongly agreed that anti-inflammatory agents should be in the treatment plan, 123(56.68%) were agree, 18(8.29%) were neither agree not disagree, 10(4.61%) were disagree, and 6(2.76%) were strongly disagree, 59(27.19%) were strongly agreed that functional gait and balance training should be in the treatment plan, 119(54.84%) were agree, 23(10.6%) were neither agree not disagree, 12(5.53%) were disagree, and 4(1.84%) were strongly disagree, 62(28.57%) were strongly agreed that manual therapy should be in the treatment plan, 115(53%) were agree, 27(12.44%) were neither agree not disagree, 10(4.61%) were disagree, and 3(1.38%) were strongly disagree, 40(18.43%) were strongly agreed that progressive weight bearing should be in the treatment plan, 126(58.06%) were agree, 30(13.82%) were neither agree not disagree, 15(6.91%) were disagree, and 6(2.76%) were strongly disagree, 51(23.5%) were strongly agreed that progressive return to activity should be in the treatment plan, 125(57.6%) were agree, 25(11.52%) were neither agree not disagree, 12(5.53%) were disagree, and 4(1.84%) were strongly disagree, 43(19.82%) were strongly agreed that supervised rehabilitation should be in the treatment plan, 137(63.13%) were agree, 21(9.68%) were neither agree not disagree, 13(5.99%) were disagree, and 3(1.38%) were strongly disagree, 64(29.49%) were strongly agreed that therapeutic exercises should be in the treatment plan, 128(58.99%) were agree, 16(7.37%) were neither agree not disagree, 6(2.76%) were disagree, and 3(1.38%) were strongly disagree, 52(23.96%) were strongly agreed that neuromuscular electrical stimulation(nmes) should be in the treatment plan, 120(55.3%) were agree, 11(5.07%) were neither agree not disagree, 11(5.07%) were disagree, and 6(2.76%) were strongly disagree.

In patients with piriformis syndrome, 55(25.35%) were strongly agreed that aerobic and endurance training should be in the treatment plan, 113(52.07%) were agree, 27(12.44%) were neither agree not disagree, 18(8.29%) were disagree, and 4(1.84%) were strongly disagree, 50(23.04%) were strongly agreed that balance coordination agility training should be in the treatment plan, 127(58.53%) were agree, 28(12.9%) were neither agree not disagree, 10(4.61%) were disagree, and 2(0.92%) were strongly disagree, 47(21.66%) were strongly agreed that flexibility exercise should be in the treatment plan, 125(57.6%) were

agree, 31(14.29%) were neither agree not disagree, 11(5.07%) were disagree, and 3(1.38%) were strongly disagree, 56(25.81%) were strongly agreed that manual therapy should be in the treatment plan, 134(61.75%) were agree, 17(7.83%) were neither agree not disagree, 7(3.23%) were disagree, and 3(1.38%) were strongly disagree, 54(24.88%) were strongly agreed that electric stimulation should be in the treatment plan, 127(58.53%) were agree, 21(9.68%) were neither agree not disagree, 11(5.07%) were disagree, and 4(1.84%) were strongly disagree, 40(18.43%) were strongly agreed that cryotherapy should be in the treatment plan, 132(60.83%) were agree, 27(12.44%) were neither agree not disagree, 15(6.91%) were disagree, and 3(1.38%) were strongly disagree, 50(23.04%) were strongly agreed that ultrasound should be in the treatment plan, 135(62.21%) were agree, 12(5.53%) were neither agree not disagree, 14(6.45%) were disagree, and 6(2.76%) were strongly disagree, 62(28.57%) were strongly agreed that hydrotherapy should be in the treatment plan, 123(56.68%) were agree, 8(3.69%) were neither agree not disagree, 8(3.69%) were disagree, and 5(2.3%) were strongly disagree, 55(25.35%) were strongly agreed that thermotherapy should be in the treatment plan, 126(58.06%) were agree, 22(10.14%) were neither agree not disagree, 11(5.07%) were disagree, and 3(1.38%) were strongly disagree, 65(29.95%) were strongly agreed that stretching should be in the treatment plan, 116(53.46%) were agree, 24(11.06%) were neither agree not disagree, 8(3.69%) were disagree, and 4(1.84%) were strongly disagree, 50(23.04%) were strongly agreed that strengthening exercise should be in the treatment plan, 149(68.66%) were agree, 9(4.15%) were neither agree not disagree, 8(3.69%) were disagree, and 1(0.46%) were strongly disagree.

In patients with sij dysfunction, 50(23.04%) were strongly agreed that manual therapy should be in the treatment plan, 126(58.06%) were agree, 24(11.06%) were neither agree not disagree, 15(6.91%) were disagree, and 2(0.92%) were strongly disagree, 59(27.19%) were strongly agreed that flexibility exercises should be in the treatment plan, 123(56.68%) were agree, 17(7.83%) were neither agree not disagree, 13(5.99%) were disagree, and 5(2.3%) were strongly disagree, 60(27.65%) were strongly agreed that strengthening exercises should be in the treatment plan, 131(60.37%) were agree, 15(6.91%) were neither agree not disagree, 8(3.69%) were disagree, and 2(0.92%) were strongly disagree, 51(23.5%) were strongly agreed that body mechanics should be in the treatment plan, 135(62.21%) were agree, 19(8.76%) were neither agree not disagree, 10(4.61%) were disagree, and 2(0.92%) were strongly disagree, 53(24.42%) were strongly agreed that modalities braces should be in the treatment plan, 136(62.67%) were agree, 18(8.29%) were neither agree not disagree, 10(4.61%) were disagree, and 0(0%) were strongly disagree.

In patients with low back pain, 55(25.35%) were strongly agreed that manual therapy should be in the treatment plan, 140(64.52%) were agree, 15(6.91%) were neither agree not disagree, 6(2.76%) were disagree, and 1(0.46%) were strongly disagree, 55(25.35%) were strongly agreed that trunk coordination should be in the treatment plan, 134(61.75%) were agree, 21(9.68%) were neither agree not disagree, 7(3.23%) were disagree, and 0(0%) were strongly disagree, 58(26.73%) were strongly agreed that strengthening exercises should be in the treatment plan, 129(59.45%) were agree, 16(7.37%) were neither agree not disagree, 11(5.07%) were disagree, and 3(1.38%) were strongly disagree, 57(26.27%) were strongly agreed that centralization and directional preferences exercises should be in the treatment plan, 132(60.83%) were agree, 19(8.76%) were neither agree not disagree, 6(2.76%) were disagree, and 3(1.38%) were strongly disagree, 45(20.74%) were strongly agreed that flexion exercises should be in the treatment plan, 145(66.82%) were agree, 17(7.83%) were neither agree not disagree, 6(2.76%) were disagree, and 4(1.84%) were strongly disagree, 38(17.51%) were strongly agreed that lower quarter nerve mobilization should be in the treatment plan, 149(68.66%) were agree, 22(10.14%) were neither agree not disagree, 4(1.84%) were disagree, and 4(1.84%) were strongly disagree,

45(20.74%) were strongly agreed that traction should be in the treatment plan, 133(61.29%) were agree, 24(11.06%) were neither agree not disagree, 12(5.53%) were disagree, and 3(1.38%) were strongly disagree, 53(24.42%) were strongly agreed that patient education and counseling should be in the treatment plan, 138(63.59%) were agree, 5(2.3%) were neither agree not disagree, 5(2.3%) were disagree, and 3(1.38%) were strongly disagree, 56(25.81%) were strongly agreed that progressive endurance exercises should be in the treatment plan, 133(61.29%) were agree, 18(8.29%) were neither agree not disagree, 8(3.69%) were disagree, and 2(0.92%) were strongly disagree, 52(23.96%) were strongly agreed that fitness activities should be in the treatment plan, 140(64.52%) were agree, 11(5.07%) were neither agree not disagree, 11(5.07%) were disagree, and 3(1.38%) were strongly disagree.

In patients with neck pain, 69(31.8%) were strongly agreed that cervical mobilization/manipulation should be in the treatment plan, 122(56.22%) were agree, 13(5.99%) were neither agree not disagree, 10(4.61%) were disagree, and 3(1.38%) were strongly disagree, 55(25.35%) were strongly agreed that thoracic mobilization/manipulation should be in the treatment plan, 138(63.59%) were agree, 18(8.29%) were neither agree not disagree, 6(2.76%) were disagree, and 0(0%) were strongly disagree, 58(26.73%) were strongly agreed that stretching exercises should be in the treatment plan, 135(62.21%) were agree, 12(5.53%) were neither agree not disagree, 9(4.15%) were disagree, and 3(1.38%) were strongly disagree, 54(24.88%) were strongly agreed that coordination, strengthening and endurance exercises should be in the treatment plan, 128(58.99%) were agree, 18(8.29%) were neither agree not disagree, 14(6.45%) were disagree, and 3(1.38%) were strongly disagree, 59(27.19%) were strongly agreed that centralization procedures and exercises should be in the treatment plan, 131(60.37%) were agree, 18(8.29%) were neither agree not disagree, 7(3.23%) were disagree, and 2(0.92%) were strongly disagree, 52(23.96%) were strongly agreed that upper quarter and nerve mobilization procedures should be in the treatment plan, 137(63.13%) were agree, 14(6.45%) were neither agree not disagree, 10(4.61%) were disagree, and 4(1.84%) were strongly disagree, 62(28.57%) were strongly agreed that traction should be in the treatment plan, 129(59.45%) were agree, 12(5.53%) were neither agree not disagree, 9(4.15%) were disagree, and 5(2.3%) were strongly disagree.

In patients with rotator cuff tendonitis, 48(22.12%) were strongly agreed that pain medication should be in the treatment plan, 136(62.67%) were agree, 16(7.37%) were neither agree not disagree, 13(5.99%) were disagree, and 4(1.84%) were strongly disagree, 58(26.73%) were strongly agreed that range of motion exercises should be in the treatment plan, 136(62.67%) were agree, 13(5.99%) were neither agree not disagree, 7(3.23%) were disagree, and 3(1.38%) were strongly disagree, 57(26.27%) were strongly agreed that strengthening exercises should be in the treatment plan, 123(56.68%) were agree, 18(8.29%) were neither agree not disagree, 16(7.37%) were disagree, and 3(1.38%) were strongly disagree, 57(26.27%) were strongly agreed that patient education should be in the treatment plan, 137(63.13%) were agree, 14(6.45%) were neither agree not disagree, 6(2.76%) were disagree, and 3(1.38%) were strongly disagree, 59(27.19%) were strongly agreed that functional training should be in the treatment plan, 123(56.68%) were agree, 22(10.14%) were neither agree not disagree, 9(4.15%) were disagree, and 4(1.84%) were strongly disagree

In patients with frozen shoulder, 58(26.73%) were strongly agreed that exercises and manual therapy should be in the treatment plan, 134(61.75%) were agree, 18(8.29%) were neither agree not disagree, 5(2.3%) were disagree, and 2(0.92%) were strongly disagree, 61(28.11%) were strongly agreed that modalities should be in the treatment plan, 127(58.53%) were agree, 19(8.76%) were neither agree not disagree, 6(2.76%) were disagree, and 4(1.84%) were strongly disagree,

73(33.64%) were strongly agreed that home exercise program should be in the treatment plan, 112(51.61%) were agree, 16(7.37%) were neither agree not disagree, 12(5.53%) were disagree, and 4(1.84%) were strongly disagree, 84(38.71%) were strongly agreed that pain medication should be in the treatment plan, 110(50.69%) were agree, 18(8.29%) were neither agree not disagree, 3(1.38%) were disagree, and 2(0.92%) were strongly disagree, 72(33.18%) were strongly agreed that stretching techniques should be in the treatment plan, 120(55.3%) were agree, 17(7.83%) were neither agree not disagree, 6(2.76%) were disagree, and 2(0.92%) were strongly disagree, 58(26.73%) were strongly agreed that strengthening exercises should be in the treatment plan, 144(66.36%) were agree, 10(4.61%) were neither agree not disagree, 5(2.3%) were disagree, and 0(0%) were strongly disagree.

In patients with golfer elbow, 66(30.41%) were strongly agreed that range of motion exercises should be in the treatment plan, 125(57.6%) were agree, 14(6.45%) were neither agree not disagree, 12(5.53%) were disagree, and 0(0%) were strongly disagree, 60(27.65%) were strongly agreed that pain medication should be in the treatment plan, 129(59.45%) were agree, 21(9.68%) were neither agree not disagree, 6(2.76%) were disagree, and 1(0.46%) were strongly disagree, 66(30.41%) were strongly agreed that manual therapy should be in the treatment plan, 115(53%) were agree, 25(11.52%) were neither agree not disagree, 7(3.23%) were disagree, and 4(1.84%) were strongly disagree, 67(30.88%) were strongly agreed that strengthening exercises should be in the treatment plan, 123(56.68%) were agree, 18(8.29%) were neither agree not disagree, 7(3.23%) were disagree, and 2(0.9%) were strongly disagree 59(27.19%) were strongly agreed that functional training should be in the treatment plan, 127(58.53%) were agree, 22(10.14%) were neither agree not disagree, 7(3.23%) were disagree, and 2(0.92%) were strongly-disagree.

In patients with tennis elbow, 50(23.04%) were strongly agreed that range of motion exercises should be in the treatment plan, 136(62.67%) were agree, 20(9.22%) were neither agree not disagree, 9(4.15%) were disagree, and 2(0.92%) were strongly disagree, 62(28.57%) were strongly agreed that pain medication should be in the treatment plan, 126(58.06%) were agree, 17(7.83%) were neither agree not disagree, 7(3.23%) were disagree, and 5(2.3%) were strongly disagree, 54(24.88%) were strongly agreed that manual therapy should be in the treatment plan, 121(55.76%) were agree, 25(11.52%) were neither agree not disagree, 14(6.45%) were disagree, and 3(1.38%) were strongly disagree, 59(27.19%) were strongly agreed that strengthening exercises should be in the treatment plan, 114(52.53%) were agree, 32(14.75%) were neither agree not disagree, 8(3.69%) were disagree, and 4(1.84%) were strongly disagree, 61(28.11%) were strongly agreed that cryotherapy should be in the treatment plan, 129(59.45%) were agree, 18(8.29%) were neither agree not disagree, 6(2.76%) were disagree, and 3(1.38%) were strongly disagree, 60(27.65%) were strongly agreed that elastic bandages should be in the treatment plan, 132(60.83%) were agree, 16(7.37%) were neither agree not disagree, 6(2.76%) were disagree, and 3(1.38%) were strongly disagree.

In patients with carpal tunnel syndrome, 35(16.13%) were strongly agreed that sharp utensils should be in the treatment plan, 147(67.74%) were agree, 22(10.14%) were neither agree not disagree, 8(3.69%) were disagree, and 5(2.3%) were strongly disagree, 45(20.74%) were strongly agreed that stretch breaks should be in the treatment plan, 138(63.59%) were agree, 23(10.6%) were neither agree not disagree, 8(3.69%) were disagree, and 3(1.38%) were strongly disagree, 48(22.12%) were strongly agreed that ergonomic training should be in the treatment plan, 131(60.37%) were agree, 26(11.98%) were neither agree not disagree, 9(4.15%) were disagree, and 3(1.38%) were strongly disagree, 61(28.11%) were strongly agreed that electrotherapy should be in the treatment plan, 129(59.45%) were agree, 20(9.22%) were neither agree not disagree, 6(2.76%) were disagree, and 1(0.46%) were strongly

disagree, 43(19.82%) were strongly agreed that stretching should be in the treatment plan, 142(65.44%) were agree, 17(7.83%) were neither agree not disagree, 10(4.61%) were disagree, and 5(2.3%) were strongly disagree, 50(23.04%) were strongly agreed that strengthening exercises should be in the treatment plan, 146(67.28%) were agree, 10(4.61%) were neither agree not disagree, 8(3.69%) were disagree, and 3(1.38%) were strongly disagree.

In patients with cubital tunnel syndrome, 47(21.66%) were strongly agreed that range of motion exercises should be in the treatment plan, 153(70.51%) were agree, 14(6.45%) were neither agree not disagree, 3(1.38%) were disagree, and 0(0%) were strongly disagree, 60(27.65%) were strongly agreed that muscle strengthening exercises should be in the treatment plan, 138(63.59%) were agree, 6(2.76%) were neither agree not disagree, 6(2.76%) were disagree, and 1(0.46%) were strongly disagree, 68(31.34%) were strongly agreed that nerve gliding exercises should be in the treatment plan, 130(59.91%) were agree, 15(6.91%) were neither agree not disagree, 4(1.84%) were disagree, and 0(0%) were strongly disagree, 58(26.73%) were strongly agreed that ergonomic training should be in the treatment plan, 132(60.83%) were agree, 18(8.29%) were neither agree not disagree, 6(2.76%) were disagree, and 3(1.38%) were strongly disagree.

## Discussion:

A total of 217 physiotherapists were the part of the study in which 119 were male and 98 were female. The main purpose of the study was to know the treatment preferences of the physiotherapists regarding common diseases. 14 common musculoskeletal disorders of upper extremity, lower extremity and spine were part of the research which were Ankle Sprain, Frozen.

Shoulder, Plantar Fasciitis, Achilles Tendonitis, Neck Pain, Cubital Tunnel Syndrome, Golfer Elbow, Knee Osteoarthritis, Piriformis Syndrome, Hip Osteoarthritis, Tennis Elbow, Carpal Tunnel Syndrome, Low Back Pain, Rotator Cuff Tendonitis, and Sacroiliac joint Dysfunction.

The treatment preferences of physiotherapists were mainly cryotherapy for Ankle Sprain, pain medication for Frozen Shoulder, anti-inflammatory agents for Plantar Fasciitis, heel lifts for Achilles Tendonitis, cervical mobilization/manipulation for Neck Pain, nerve gliding exercises for Cubital Tunnel Syndrome, strengthening exercises for Golfer Elbow, manual therapy for Knee Osteoarthritis, stretching for Piriformis Syndrome, therapeutic exercises for Hip Osteoarthritis, pain medication for Tennis Elbow, electrotherapy for Carpal Tunnel Syndrome, strengthening exercises for Low Back Pain, range of motion exercises for Rotator Cuff Tendonitis, and strengthening exercises for SIJ Dysfunction. A study conducted showed that manual therapy and balance training was the most preferred treatment of ankle sprain where as the current study shows cryotherapy is the best treatment of ankle sprain [17]

For Plantar Fasciitis stretching and night splints were the preferred treatment option where as in current study anti-inflammatory agents are proved to be best treatment option [18].

Laser therapy was preferred for Achilles tendinitis where as current study showed that heel lift was best option [19].

NMES and assisted devices or proper footwear are treatment for Knee Osteoarthritis in a study where as current study showed that manual therapy was the best treatment option [20].

According to a study exercise therapy was more effective for Hip Osteoarthritis where as current study showed Therapeutic exercises was best [21].

On the basis of a study Stretching exercises were more effective for Piriformis Syndrome to promote flexibility and return the individual to pain free status, our study also showed stretching exercises were more effective [22].



Another study concluded revealed that joint mobilization, anti-inflammatory medicines and sacroiliac joint belts were best treatment for SIJ dysfunction whereas current study showed strengthening exercises were best for Sacroiliac joint dysfunction [23].

Results followed by a study revealed non-steroidal anti-inflammatory drug were best treatment for low back pain whereas current study showed that strengthening exercises were more effective [24].

Manual therapy was used for neck pain whereas according to recent study Cervical mobilization was best [25].

Study showed that Extracorporeal shock wave therapy (ESWT) was effective in the treatment of Rotator Cuff Tendonitis whereas current study showed Functional Training was preferred [26].

According to a study manipulation was effective for frozen shoulder where as our study showed exercises and manual therapy were preferred treatment [27].

Current study revealed that Strengthening Exercises was best preferred treatment ]while corticosteroid injections were more effective for Golfer Elbow in another study [28].

A study conducted showed that corticosteroid injections were most preferred for tennis elbow whereas current study showed Pain medication was recommended treatment [29].

Nerve and tendon gliding exercises were more effective for Carpal Tunnel Syndrome whereas current study showed Electrotherapy was appropriate treatment [30].

While on the other hand Nerve and Gliding exercises were appropriate treatment for cubital tunnel syndrome and also preferred in current study [31].

### Limitations and Recommendations

Sample size was small.

Only common musculoskeletal disorders considered.

Treatment preferences may be studied on large scale and more studies like this showed be conducted that will certainly improve and facilitates the daily life activities of the individual who suffered from musculoskeletal problems. This may open new channels for further research in the field of physiotherapy and may help the physiotherapists to achieve their goals of treatment. The results of this study may help or improve clinical skills of fresh graduate, practicing physiotherapists and other health care providers. There is need to organize workshops for physiotherapist and provide them a platform in getting advanced knowledge, clinical skills and new pattern of treatments according to International standards. The main focus on further recommended study to evaluate the satisfied relationship between physiotherapist and patients.

### Conclusion

The most preferred treatment options were cryotherapy for Ankle Sprain, pain medication for Frozen Shoulder, anti-inflammatory agents for Plantar Fasciitis, heel lifts for Achilles Tendonitis, cervical mobilization/manipulation for Neck Pain, nerve gliding exercises for Cubital Tunnel Syndrome, strengthening exercises for Golfer Elbow, manual therapy for Knee Osteoarthritis, stretching for Piriformis Syndrome, therapeutic exercises for Hip Osteoarthritis, pain medication for Tennis Elbow, electrotherapy for Carpal Tunnel Syndrome, strengthening exercises for Low Back Pain, range of motion exercises for Rotator Cuff Tendonitis, and strengthening exercises for Sacroiliac joint Dysfunction.

### Declaration

We acknowledge the support of our parents and teachers.

Both authors made similar contributions to the study. The research received no financial assistance or funding. There are no conflicts of

interest or any ethical issues. Informed consent was taken from all participants and data were collected pro forma.

Anonymity was protected throughout.

On behalf of all authors, the corresponding author states that there is no conflict of interest.

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