

EFFECT OF MAITLAND MOBILIZATION AND CONVENTIONAL PHYSIOTHERAPY EXERCISES IN OSTEOARTHRITIS KNEE: A COMPARATIVE STUDY

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ABSTRACT

Osteoarthritis (OA) is the most common type of arthritis and the major cause of chronic musculoskeletal pain and mobility disability in elderly populations worldwide. Physical therapy can help reduce the pain, swelling and stiffness of knee osteoarthritis and it can help improve knee joint function. The present attempt has been aimed to find out the effective therapy from both selected techniques i.e. Maitland mobilization and conventional physiotherapy exercises prevalent among physiotherapists for pain management as well as to formulate and develop some measures and clinical guidelines for better treatment in practices and recommendations for younger generation for prevention of the problem of osteoarthritis. The study concluded from the results that in both the groups i.e. Group A and Group B there is a significant improvement in the patient's condition in terms of pain as per VAS, KSS & FKSS. The study also concluded that in Group A the improvement in pain level is better than the improvement level in Group B which means that Maitland mobilization technique gives better results when compared to the conventional physiotherapy exercises in case of Knee Osteoarthritis. Study concluded that in both the groups i.e. Group A and Group B, WOMAC score reduced significantly after treatment which means both the interventions were equally beneficial for the patients with Knee Osteoarthritis. Study concluded that both the interventions i.e. Maitland Mobilization and conventional physiotherapy techniques made significant impact upon the patient's condition in both the Groups in terms of Flexion of Knee joint.

KEYWORDS: Maitland Mobilization, Conventional Physiotherapy Exercises & Knee Osteoarthritis.

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Access this Article online	Journal Information
Quick Response code  DOI: 10.16965/ijpr.2018.192	International Journal of Physiotherapy and Research ICV for 2016 86.93 ISSN (E) 2321-1822 ISSN (P) 2321-8975 https://www.ijmhr.org/ijpr.html DOI-Prefix: https://dx.doi.org/10.16965/ijpr 
	Article Information
	Received: 11 Nov 2018 Peer Review: 12 Nov 2018 Revised: None
	Accepted: 06 Dec 2018 Published (O): 25 Dec 2018 Published (P): 25 Dec 2018

INTRODUCTION

Osteoarthritis (OA) is the most common type of arthritis and the major cause of chronic musculoskeletal pain and mobility disability in elderly populations worldwide [1]. Osteoarthritis (OA), also known as degenerative joint disorder, is the most common form of arthritis and a leading cause of disability throughout the world (Shakoor and Loeser, 2004) [1]. More than 50 modalities of non-pharmacological, pharmacological and surgical therapy for knee and hip

OA are described in the medical literature.¹ Regular osteoarthritis exercises, weight control, proper nutrition, and a healthy diet, are all part of a comprehensive treatment plan for osteoarthritis [2]. Physical therapy can be the first line of defense for managing knee. Physical therapy can help reduce the pain, swelling and stiffness of knee osteoarthritis and it can help improve knee joint function [3].

The present attempt has been aimed to find out the effective therapy from both selected

techniques i.e. Maitland mobilization and conventional physiotherapy exercises prevalent among physiotherapists for pain management as well as to formulate and develop some measures and clinical guidelines for better treatment in practices and recommendations for younger generation for prevention of the problem of osteoarthritis.

OBJECTIVE

1. To investigate the short and long term effects of Maitland mobilization and most used conventional physiotherapy exercises for osteoarthritis knee.
2. To compare the efficacy of Maitland mobilization and conventional physiotherapy exercise on pain parameters and gait parameters in patients with osteoarthritis of knee.
3. To assess the relief status of patients after the two treatments.
4. To make suggestions and recommendations for people in general and clinical guideline for treatment of the problem to promote more efficient technique. (Footnotes)

MATERIAL AND METHODOLOGY

Study included 160 patients with Knee Osteoarthritis equally divided into two groups from the CSJMU campus College OPD, Kanpur and SRC a private physiotherapy clinic in Kanpur.

Only those patients were selected who fulfill the inclusion criteria. Patients having osteoarthritis with grade 3 of Kellgren and Lawrence grading system for osteoarthritis, 1957 and the Patients having osteoarthritis with at least 3 of the clinical symptoms according to Criteria for classification of idiopathic Osteoarthritis of the knee, 1986 (American college of Rheumatology) were selected for the study.

Pre-test Measurements of the patients: All subjects are tested using pre-test measurements, which includes range of motion in knee joint, Visual Analogue Scale / Numeric Pain Rating Scale (VAS/NPRS) for pain, The Western Ontario and McMaster Universities Arthritis Index (WOMAC) for Pain, Stiffness & Physical function of Knee joint, Knee Society Score & Functional Knee Society Score (KSS & FKSS) for functional assessment and Activities of daily living (ADLs).

Post-test Measurements of the patients: All subjects are tested by using post-test measurements for improvement evaluation after last session of therapy during a six week treatment intervention course through selected therapies.

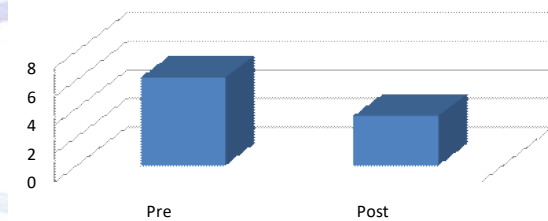
Data Analysis: After data collection and interpretation, data is analyzed using SPSS version 15.

Group A

Descriptive statistics:

	Group A		
	Mean	Standard Deviation	Median
VAS_PRE	6.18	1.49	6
VAS_POST	3.5	1.04	3.75

VAS



Wilcoxon Signed rank test result:

	VAS
Z	-7.808 ^b
P-value	0

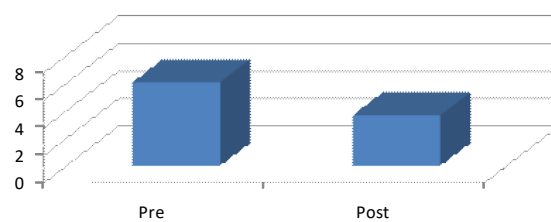
Interpretation: Since p-value for Wilcoxon signed rank test is less than that of 0.05 for VAS indicates that average VAS score is reduced significantly after treatment in Group A.

Group B:

Descriptive Statistics:

	Group B		
	Mean	Standard Deviation	Median
VAS_PRE	6.1	1.39	6
VAS_POST	3.7	0.92	3.75

VAS



Wilcoxon Signed rank test:

	VAS
Z	-7.824 ^b
P-value	0

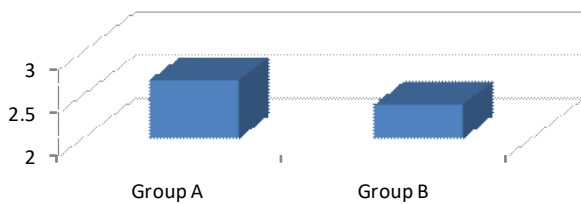
Interpretation: Since p-value for Wilcoxon signed rank test is less than that of 0.05 for VAS indicates that average VAS score is reduced significantly after treatment.

Difference Comparison

Descriptive Statistics:

	Groups	
	Group A	Group B
Mean	2.68	2.4
Standard Deviation	0.88	0.82
Median	2.75	2.25

Mean difference (Pre-Post)



Mean Rank table:

Ranks				
	Groups	N	Mean Rank	Sum of Ranks
Dif_VAS	Group A	80	88.5	7080
	Group B	80	72.5	5800
	Total	160		

Mann-Whitney U test:

	Score
Mann-Whitney U	2560
Wilcoxon W	5800
Z	-2.233
p-value	0.026

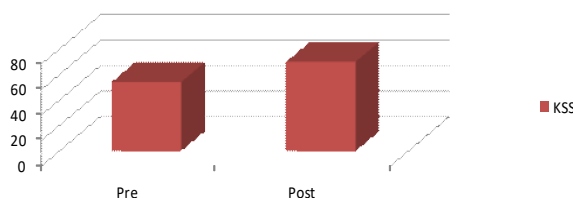
Interpretation: Since p-value for the Mann-Whitney u test is less than that of 0.05 indicates significance of difference between Group A and Group B.

Group A

Descriptive statistics

	Group A		
	Mean	Standard Deviation	Median
KSS_PRE	54.4	8.88	52
KSS_POST	70.35	6.99	70

KSS



Wilcoxon Signed rank test result:

	KSS
Z	-7.809 ^c
P-value	0

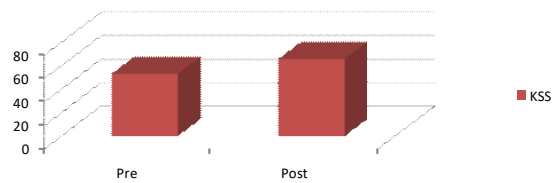
Interpretation: Since p-value for Wilcoxon signed rank test is less than that of 0.05 for KSS indicates that average KSS score has been increased significantly after treatment.

Group B:

Descriptive Statistics:

	Group B		
	Mean	Standard Deviation	Median
KSS_PRE	53.15	9.3	49.5
KSS_POST	65.85	10.45	62

KSS



Wilcoxon Signed rank test:

	KSS
Z	-7.804 ^c
P-value	0

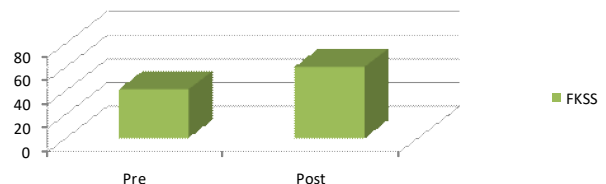
Interpretation: Since p-value for Wilcoxon signed rank test is less than that of 0.05 for KSS indicates that average KSS score has been increased significantly after treatment.

Group A:

Descriptive statistics:

	Group A		
	Mean	Standard Deviation	Median
FKSS_PRE	41.5	13.42	42.5
FKSS_POST	60.5	10.9	62.5

FKSS



Wilcoxon Signed rank test result:

	FKSS
Z	-7.820 ^c
P-value	0

Interpretation: Since p-value for Wilcoxon signed rank test is less than that of 0.05 for FKSS

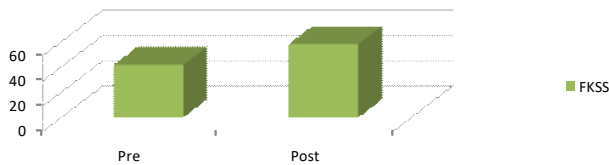
indicates that average FKSS score has been increased significantly after treatment.

Group B:

Descriptive Statistics:

	Group B		
	Mean	Standard Deviation	Median
FKSS_PRE	42	8.33	45
FKSS_POST	58.25	7.84	60

FKSS



Wilcoxon Signed rank test:

	FKSS
Z	-7.833 ^c
P-value	0

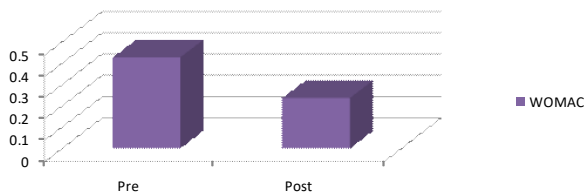
Interpretation: Since p-value for Wilcoxon signed rank test is less than that of 0.05 for FKSS indicates that average FKSS score has been increased significantly after treatment.

Group A:

Descriptive statistics:

	Group A		
	Mean	Standard Deviation	Median
WOMAC_PRE	0.4295	0.1766	0.364
WOMAC_POST	0.2386	0.0907	0.208

WOMAC



Wilcoxon Signed rank test result:

	WOMAC
Z	-7.774 ^b
P-value	0

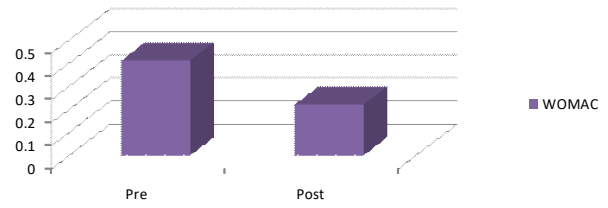
Interpretation: Since p-value for Wilcoxon signed rank test is less than that of 0.05 for WOMAC indicates that average WOMAC score is reduced significantly after treatment.

Group B:

Descriptive Statistics:

	Group B		
	Mean	Standard Deviation	Median
WOMAC_PRE	0.4126	0.1167	0.411
WOMAC_POST	0.221	0.0615	0.213

WOMAC



Wilcoxon Signed rank test:

	WOMAC
Z	-7.775 ^b
P-value	0

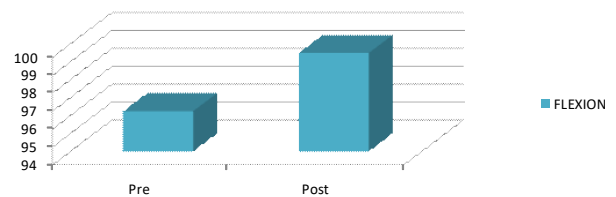
Interpretation: Since p-value for Wilcoxon signed rank test is less than that of 0.05 for WOMAC indicates that average WOMAC score is reduced significantly after treatment.

Group A:

Descriptive statistics:

	Group A		
	Mean	Standard Deviation	Median
FLEXION_PRE	96.25	4.17	95
FLEXION_POST	99.5	5.71	100

FLEXION



Wilcoxon Signed rank test result:

	FLEXION
Z	-6.687 ^c
P-value	0

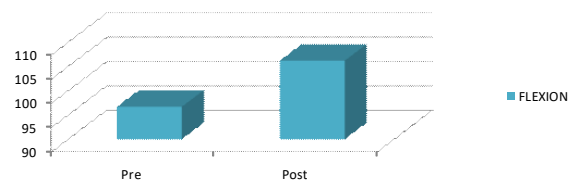
Interpretation: Since p-value for Wilcoxon signed rank test is less than that of 0.05 for FLEXION indicates that average FLEXION score has been increased significantly after treatment.

Group B:

Descriptive Statistics:

	Group B		
	Mean	Standard Deviation	Median
FLEXION_PRE	96.75	3.99	95
FLEXION_POST	106.25	5.25	105

FLEXION



Wilcoxon Signed rank test:

	FLEXION
Z	-7.909 ^c
P-value	0

Interpretation: Since p-value for Wilcoxon signed rank test is less than that of 0.05 for FLEXION indicates that average FLEXION score has been increased significantly after treatment.

DISCUSSION AND RESULTS

Since p-value for Wilcoxon signed rank test is less than that of 0.05 for VAS indicates that average VAS score is reduced significantly after treatment in both Group A and Group B. Analysis showed that mean value for KSS in Group A pre score is 54.4 and mean value for KSS post score is 70.35. Since p-value for Wilcoxon signed rank test is less than that of 0.05 for KSS indicates that average KSS score has been increased significantly after treatment in both Group A and Group B. Since p-value for Wilcoxon signed rank test is less than that of 0.05 for FKSS indicates that average FKSS score has been increased significantly after treatment in both Group A and Group B. Analysis showed that mean value for WOMAC in Group A pre score is 0.4295 and mean value for WOMAC post score is 0.2386. Since p-value for Wilcoxon signed rank test is less than that of 0.05 for WOMAC indicates that average WOMAC score is reduced significantly after treatment in both Group A and Group B. Since p-value for Wilcoxon signed rank test is less than that of 0.05 for Flexion indicates that average Flexion score has been increased significantly after treatment in both Group A and Group B. Analysis showed that mean value for Flexion in Group B pre score is 96.75 and mean value for Flexion post score is 106.25.

CONCLUSION

The study concluded from the results that in both the groups i.e. Group A and Group B there is a significant improvement in the patient's condition in terms of pain as per VAS. The study also concluded that in Group A the improvement in pain level is better than the improvement level in Group B which means that Maitland mobilization technique gives better results when compared to the conventional physiotherapy

exercises in case of Knee Osteoarthritis. The study concluded that in both Group A and Group B average KSS score has increased significantly after treatment which means that both the interventions made significant impact in improving the condition of the patients. Study concluded that FKSS score has increased significantly after treatment in both Group A and Group B which means that both the interventions made significant impact in improving the condition of the patients. Study concluded that in both the groups i.e. Group A and Group B, WOMAC score reduced significantly after treatment which means both the interventions were equally beneficial for the patients with Knee Osteoarthritis. Study concluded that both the interventions i.e. Maitland Mobilization and conventional physiotherapy techniques made significant impact upon the patient's condition in both the Groups in terms of Flexion of Knee joint.

Conflicts of interest: None

REFERENCES

- [1]. G. Peat, R. McCarney, P. Croft Knee pain and osteoarthritis in older adults: a review of community burden and current use of primary health care *Ann Rheum Dis*, 2001;60:91-97.
- [2]. Shakoor, N., & Loeser, R. F. (2004). Treatment options to provide pain relief and preserve joint function. *Drug Benefit Trends*, 2004;16(SUPPL. C):18-22.
- [3]. W. Zhang, R.W. Moskowitz, G. Nuki, S. Abramson, R.D. Altman, N. Arden, et al. OARSI recommendations for the management of hip and knee osteoarthritis, Part I: Critical appraisal of existing treatment guidelines and systematic review of current research evidence. *Osteoarthritis Cartilage*, 2007;15:981-1000.
- [4]. Panel, N. O. E. I. E. Treatment guidelines 1998.
- [5]. Deyle, G. D., Henderson, N. E., Matekel, R. L., Ryder, M. G., Garber, M. B., & Allison, S. C. Effectiveness of manual physical therapy and exercise in osteoarthritis of the knee: a randomized, controlled trial. *Annals of internal medicine*, 2000;132(3):173-181.

How to cite this article: Manoj Shukla, Mukesh Goyal. EFFECT OF MAITLAND MOBILIZATION AND CONVENTIONAL PHYSIOTHERAPY EXERCISES IN OSTEOARTHRITIS KNEE: A COMPARATIVE STUDY. *Int J Physiother Res* 2018;6(6):2952-2956. DOI: 10.16965/ijpr.2018.192