UNIVERSITI TEKNOLOGI MARA

THE EFFECTIVENESS OF THERAPEUTIC ULTRASOUND ON MYOFASCIAL TRIGGER POINT SYNDROME ON PAIN AND RANGE OF MOTION: SYSTEMATIC REVIEW

NOOR HAFIFI NOOR HISHAM

Thesis submitted in fulfillment of the requirements for the degree of **Master of Science**

Faculty of Health Sciences

December 2014

AUTHOR'S DECLARATION

I declare that the work of this thesis was carried out in accordance with the regulations of

Universiti Teknologi MARA. It is original and is the resuls of my own work, unless

otherwise indicated or acknowledged as reference work. This thesis has not been submitted

to any other academic institutions or non-academic institution for any other degree or

qualification.

I, hereby, acknowledge that I have been supplied with the Academic Rules and

Regulations for Post Graduate, Universiti Teknologi MARA, regulating the conduct of my

study and research.

Name of student

Noor Hafifi Noor Hisham

Student I.D. No.

2011244198

Programme

Master of Science (HS780)

Faculty

Health Science

Thesis Title

Date

Treatm Serence

I hesis Title

The Effectiveness of Therapeutic Ultrasound

on Myofascial Trigger Point Syndrome On

Pain and Range of Motion: Systematic

Review

Signature of student

•

:

December 2014

ii

ABSTRACT

The purpose of this study is to investigate the effectiveness of therapeutic ultrasound (US) on myofascial trigger point syndrome (MTrPS) on pain and range of motion (ROM). The literatures were searched through CENTRAL, MEDLINE, CINAHL, PEDro and trial registries databases as well as relevant bibliographies from 1950 to June 2012. Only literatures on human subjects with English languages were included. Two (2) reviewers performed the study selection. The eligibility criteria were MTrPS patient, therapeutic US, randomized controlled trial (RCT), studies that compared with no intervention, sham intervention, or other interventions as well as studies that measure on impairment, activity limitation, participation restrictions and quality of life. Two (2) reviewers performed the data extraction and methodological quality assessment developed by The Cochrane Cystic Fibrosis and Genetic Group and PEDro RCT's assessment tool respectively. Six (6) of the included studies have moderate methodological quality and positive effects on pain and ROM. Therapeutic US might have potential benefits on MTrPS on pain and ROM, however, the findings cannot be recommended or refuted. More studies need to be conducted to support these findings.

ACKNOWLEDGEMENT

Apart from my efforts alone, the success of this review depends largely on the support, encouragement as well as guidances from many others. First of all, I would like to be thankful to the greatest almighty. Without His blessing, this thesis would not be completed. Then, I would like to express my sincere gratitude and deepest appreciation to my supervisor, Madam Kamaria Kamaruddin and Associate Professor Dr. Lydia Abdul Latiff on the useful comments, guidance, remarks and engagements during the duration of the project. In addition, I would like to thank both parents, Hisham Ramlan for their endless love and support for me to complete this research. My sincere thanks also goto my fiancé, Nasiha Shakina Shariffuddin who have understood and motivated me throughout the entire process of the study. Both sides made me continuously believe and develop the confidence in myself to face ongoing challenges. In addition, I would like to thank to my head of department, Mr. Jayaprabha Praveen Surendran due to his flexibility, concern and space for me to continue the study. Besides that, I would also like to thank the university where I'm studying, Universiti Teknologi MARA, and the university where I am working at, INTI International University for their permission and continuous support on this project such as financial support that enable me to go for several trainings and workshops in order to strengthen my interest and research. Last but not least, I also appreciate the guidance and support received from all the members who have contributed vital support for the success of this project. I am grateful for their constant support and help.

TABLE OF CONTENTS

	Page
AUTHOR'S DECLARATION	ii
ABSTRACT	iii
ACKNOWLEDGEMENT	iv
TABLE OF CONTENTS	v
LIST OF TABLES	viii
LIST OF FIGURES	ix
LIST OF ABBREVIATIONS	x
CHAPTER ONE: INTRODUCTION	
1.1 Background of The Study	1
1.2 Statement of The Problem	3
1.3 Purposes of The Study	4
1.4 Objectives of The Study	4
1.5 Scope and Delimitation of The Study	4
1.6 Definition of Terms	5
CHAPTER TWO: LITERATURE REVIEW	
2.1 Myofascial Trigger Point Syndromes (MTrPS)	6
2.1.1 The Epidemiology of MTrPS	7
2.1.2 The Physiology of Skeletal Muscle and Fascia	8
2.1.3 The Etiology of MTrPS	9
2.1.4 The Pathophysiology of MTrPS	10
2.1.5 The Prognosis of MTrPS	11
2.1.6 The Diagnosis of MTrPS	12
2.1.7 The Classification of MTrPS	13
2.1.8 The Treatment of MTrPS	14