



شبكة المعلومات الجامعية

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ





شبكة المعلومات الجامعية



شبكة المعلومات الجامعية

التوثيق الالكتروني والميكرو فيلم



شبكة المعلومات الجامعية

جامعة عين شمس

التوثيق الالكتروني والميكروفيلم

قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
علي هذه الأفلام قد اعدت دون أية تغيرات



يجب أن

تحفظ هذه الأفلام بعيداً عن الغبار

في درجة حرارة من 15 – 20 مئوية ورطوبة نسبية من 20-40 %

To be kept away from dust in dry cool place of
15 – 25c and relative humidity 20-40 %



شبكة المعلومات الجامعية



بالرسالة صفحات

لم ترد بالأصل



شبكة المعلومات الجامعية



بعض الوثائق الأصلية تالفة

INFLUENCE OF PROGRESSIVE PRESSURE RELEASE ON LOW BACK DYSFUNCTION

BY

MARY KAMAL NASSIF
B.Sc. in Physical Therapy, 2001
Basic Science Department

THESIS

Submitted to the Department of Basic Science in Partial Fulfillment of
the requirement for the Master Degree
in Physical Therapy

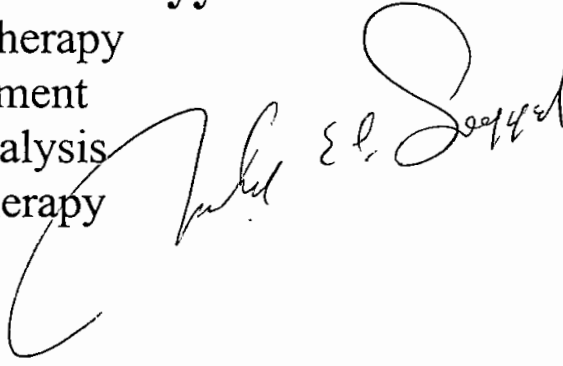
B
0001

**Faculty of Physical Therapy
Cairo University
2007**

Supervisors

Prof. Dr. Mohsen Mohamed El Sayyad

Professor of Physical Therapy
Basic Science Department
Director of Motion Analysis
Faculty of Physical Therapy
Cairo University



Prof. Dr. Hassan Mahmoud Baraka

Professor of Orthopedics
Orthopedics Department
Faculty of Medicine
Al-Azhar University

Dr. Neveen Abdel Lateef Abdel Raouf

Lecturer of Physical Therapy
Basic Science Department
Faculty of Physical Therapy
Cairo University

DEDICATION

*To my **Parents**: who made me what I am today, who taught me to love learning and who always made my education one of their top priorities; they have been my role-model for hard work, persistence and personal sacrifice, and who instilled in me the inspiration to set high goals and the confidence to achieve them.*

*This is also dedicated to my loving **Sisters** for their great support & encouragement.*

Acknowledgement

To undertake such a dissertation would not have been possible without the support and cooperation of many individuals. My first debt of gratitude must go to my Principal Advisor, **Professor. Dr. Mohsen Mohamed El Sayyad**, for his unconditional support and commitment. He has been a mentor, role model and critic in every way. He, more than anyone, has helped to shape who I am as both a researcher and a teacher. He patiently provided the vision, encouragement and advice necessary for me to proceed and complete this dissertation. His suggestions and constant, careful review of this dissertation have been instrumental in making it a professional and polished document. Throughout my work he has encouraged me to develop independent, critical thinking and research skills. He continuously stimulated my analytical thinking and greatly assisted me with scientific writing. I couldn't have made it without his support and encouragement; for everything you have done, I thank you, my Prof. Dr. Mohsen.

I would also like to thank **Prof. Dr. Hassan Mahmoud Baraka** for his encouragement. I am grateful to him for reading my reports; commenting on my views and helping me understand and enrich my ideas. I'm also extremely grateful to my Supervisor, **Dr. Neveen Abdel Lateef Abdel Raouf**, she has always been there to listen and give advice. I am deeply grateful to her for the long discussions that helped me sort out my ideas. I am also thankful to her for carefully reading and commenting on countless revisions of this manuscript.

I would like to specifically thank my colleagues, **Drs. Ahmad Hamad** and **Nader Adel**, for their friendship and support, as well as for providing me with the space to work in and for creating a pleasant working atmosphere. I would also like to whole heartedly thank **Ashraf Shenouda** for his constant input, advice and moral support. I would like to express my deepest gratitude to **Dr. Leila Saad** for her support and advice, using her precious times to guide me in presentation skills. To them all, I am eternally grateful.

In conclusion, this whole journey would not have been possible without the total trust my patients have had in me.

Influence of progressive pressure release on low back dysfunction/ Mary Nassif. Supervisors; Prof. Dr. Mohsen Mohamed El Sayyad, Dr. Neveen Abdel Lateef Abdel Raouf, Faculty of Physical Therapy, Cairo University & Prof. Dr. Hassan Mahmoud Baraka, Faculty of Medicine, Al Azhar University (Egypt). Faculty of Physical Therapy-Thesis; M.Sc., Basic Science Department; 2007.

Abstract

Background & Purpose: Low back dysfunction is a universal problem striving for a solution. Myofascial dysfunction can be the main source of dysfunction and is characterized by myofascial trigger points. However there are not many controlled studies that have analyzed the effect of manual therapies in their treatment. The purpose of this study was to establish whether progressive pressure release had specific efficacy in management of myofascial trigger points in patients with low back dysfunction. **Subjects:** Thirty patients with low back dysfunction, aged 20 to 40 years (30.86,±5.35), with one or more trigger points in four selected lumbogluteal muscles (quadratus lumborum, piriformis, gluteus medius and minimus) participated in the study. **Method:** Subjects were randomly divided into 2 groups; group (A) was the control group that received myofascial release and spray and stretch, 3 days/week for 4 weeks. Group (B), the treatment group received the same treatment in addition to progressive pressure release, 3 days/week for 4 weeks. Lumbar range of motion was measured by a back range of motion device and trigger point tenderness was measured by an electronic algometer through pressure pain threshold value. Measurements were obtained in the first treatment session, pre-treatment and at the last session, post-treatment. **Results:** Data obtained was analyzed via paired and independent t-test. There were statistical differences between the 2 groups, where the treatment group showed greater improvement in lumbar range of motion and pain threshold with a p value ($P<0.05$). **Discussion & Conclusion:** Progressive pressure release was shown to be effective in reducing trigger point tenderness and in increasing lumbar range of motion, in individuals with low back dysfunction.

Keywords: Low back dysfunction, Myofascial trigger points, Progressive pressure release, BROM device, Digital algometer, Pressure pain threshold.

Contents

	Page
Acknowledgment.....	II
Abstract.....	IV
List of tables.....	VII
List of figures.....	IX
List of abbreviations.....	XIV
Chapter I: Introduction.....	1
Statement of the problem.....	5
Purpose.....	6
Justification.....	7
Hypothesis.....	10
Terminology.....	11
Chapter II: Literature Review.....	13
Anatomy; Anatomy of skeletal muscles.....	13
Connective tissue.....	17
Fascia.....	20
Biomechanical and muscular imbalances.....	23
Low back dysfunction.....	28
Predisposing factors.....	28
Pathogenesis.....	29
Common types.....	31
Myofascial trigger points.....	34
Perpetuating factors.....	35
Clinical characteristics.....	37
Types.....	38
Etiology.....	39
Pathophysiology.....	40
Reliability & validity in MTrP identification.....	48
Lumbogluteal muscles; MTrPs & referred zones.....	51
Myofascial trigger point therapy.....	55
Non-invasive therapy.....	56
Electrotherapy.....	56
Manual therapy.....	58
Invasive therapies.....	64

Summary.....	65
Chapter III: Materials & Methods.....	67
Inclusive & exclusive criteria.....	67
Design of the study.....	68
Instrumentation.....	69
BROM device.....	69
Electronic algometer.....	70
Procedure.....	72
Evaluative procedure.....	72
ROM assessment.....	72
MTrP identification.....	73
MTrP tenderness assessment.....	75
Treatment procedure.....	79
Progressive pressure release.....	79
Myofascial release.....	85
Spray & stretch.....	88
Data collection.....	94
Data analysis and statistical design.....	95
Chapter IV: Results.....	96
Subjects general characteristics.....	96
ROM assessment.....	98
Flexion.....	98
Extension.....	101
Lateral flexion.....	104
Rotation.....	108
Digital algometer assessment.....	112
Quadratus lumborum.....	112
Gluteus medius.....	116
Gluteus minimus.....	120
Piriformis.....	124
Chapter V: Discussion.....	128
Chapter VI: Summary, Findings, Conclusion,	
Implementations & Recommendations.....	137
References	141
Appendices.....	154

List of Tables

Tables	Page
1: Physical characteristics of patients in both groups (A&B).....	96
2: Mean, \pm SD, t and P values of Flexion ROM for group A.....	98
3: Mean, \pm SD, t and P values of flexion ROM for group B.....	99
4: Independent t-test between groups A and B for Flexion ROM.....	100
5: Mean, \pm SD, t and P values of Extension ROM for group A.....	101
6: Mean, \pm SD, t and P values of Extension ROM for group B.....	102
7: Independent t-test between groups A and B for Extension ROM.....	103
8: Mean, \pm SD, t and P values of right and left Lateral Flexion for group A.....	104
9: Mean, \pm SD, t and P values of right and left Lateral flexion for group B.....	106
10: Independent t-test between groups A and B for lateral flexion.....	107
11: Mean, \pm SD, t and P values of right and left Rotation ROM for group A.....	108
12: Mean, \pm SD, t and P values of right and left Rotation ROM for group B.....	110
13: Independent t-test between groups A and B for rotation ROM.....	111
14: Mean, \pm SD, t and P values of right and left QL muscle for group A.....	112
15: Mean, \pm SD, t and P values of right and left QL muscle for group B.....	114
16: Independent t-test between groups A and B for QL muscle.....	115

17: Mean, \pmSD, t and P values of right and left	
GM muscle for group A.....	116
18: Mean, \pmSD, t and P values of right and left	
GM muscle for group B.....	118
19: Independent t-test between groups A and B for GM muscle.....	119
20: Mean, \pmSD, t and P values of right and left	
GMin muscle for group A.....	120
21: Mean, \pmSD, t and P values of right and left	
GMin muscle for group B.....	122
22: Independent t-test between groups A and B for GMin muscle.....	123
23: Mean, \pmSD, t and P values of right and left	
PR muscle for group A.....	124
24: Mean, \pmSD, t and P values of right and left	
PR muscle for group B.....	126
25: Independent t-test between groups A and B for PR muscle.....	127
26: Hypothesis.....	136