

THE IMPACT OF PROPOSED NURSING
REHABILITATION PROGRAM ON POST-LUMBAR
LAMINECTOMY PATIENT'S OUTCOMES

تأثير برنامج مقترح تمريري تأهيلي علي حالة المرضي بعد إستئصال جزء عظمي من إحدى
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By

Lamia Mohamed Nabil Ismail

(B.Sc., M.Sc.Nursing)

Medical Surgical Nursing
Cairo University

Supervisors

Prof. Dr. Khairia Abo Bakr Elsayi	Prof. Dr. Salah Abd El-Monem Sawan
Professor of Medical-Surgical Nursing	Professor of Physical therapy
Faculty of Nursing	Faculty of Physical therapy

Dr. Labiba Abd Elkader Mohamed
Assist. Prof. of Medical-Surgical Nursing
Faculty of Nursing

FACULTY OF NURSING

CAIRO UNIVERSITY

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APPROVAL PAGE FORM

This Dissertation for the Doctoral Degree in Medical-Surgical Nursing

By

Lamia Mohamed Nabil Ismail

Has Been Approved For the Department Of Medical-Surgical Nursing

By

Prof. Dr. Khairia Abo Bakr Elsawi

Professor of Medical-Surgical Nursing

Faculty of Nursing

Cairo University

Prof. Dr. Salah Abd El-Monem Sawan

Professor of Physical therapy

Cairo University

Dr. Labiba Abd Elkader Mohamed

Assist. Prof. of Medical-Surgical Nursing

Faculty of Nursing

Cairo University

Date:.....

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Abstract

By

Lamia Mohamed Nabil Ismail

The primary aim of this study was to determine the impact of proposed nursing rehabilitation program on post-Lumbar Laminectomy patient's outcomes including a) Clinical outcome in terms of symptom control with a particular focus on pain control, b) Functional outcomes in terms of physical and psychosocial functioning, and self-care abilities, and c) Cognitive outcome in terms of change in the level of patients' knowledge as a result of instructions received. The Nursing Role Effectiveness Model was used as a theoretical framework; developed by Irvine, Sidani, and McGillis-Hill (1998) to identify the contribution of nurses' roles to outcome achievement. A total sample of 60 adult patients undergoing lumbar laminectomy was selected for this study and divided into two groups each of which had 30 patients. Study group was received a suggested rehabilitation program and control group was received a traditional / routine care of anti-inflammatory drugs. The patients in both groups were assessed pre and post treatment by using of Patient Preliminary Informational Variables Questionnaire (PPIVQ); Physical Functional Assessment Tool for LBP (PFATLBP); Oswestry Low Back Pain Disability Questionnaires; and Low Back Pain Knowledge Assessment Questionnaires. The result of this study revealed that after the intervention, a significant difference with the study group in the pain intensity reduction, the reduced patient's disability level and improved in spine flexibility; and improvement in the total mean score of knowledge regarding the rehabilitation program compared to the control group. Conclusion: The findings of this study support the research hypotheses that study group who received rehabilitation program showed better patient's outcome as compared to a control group. So, rehabilitation program is recommended to be used postoperatively; also, the physiotherapist and nurses should be involved in structured plan of care that takes in consideration the proper preparation of the patient undergoing laminectomy in order to prevent and minimize as possible as the recurrence of LBP.

Key words: patient's outcomes; pain intensity; functional status; nerve decompression / laminectomy, rehabilitation program, postural correction technique, proper body mechanics and lifestyle modification.

Signed:.....

Chairperson

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The candidate

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List of Abbreviations

No.		
1.	ADL	Activities of daily living.
2.	AROM	Active Range of Motion.
3.	CLBP	Chronic Low Back Pain.
4.	CLBPD	Chronic Low Back Pain Disability.
5.	CNS	Central Nervous System.
6.	EMG	Electromyogram.
7.	HCPs	Health care providers.
8.	IASP	International Association for the Study of Pain.
9.	LBD	Low Back Dysfunction.
10.	LDH	Lumbar Disc Herniation.
11.	LBP	Low Back Pain.
12.	LBPKAQ	Low Back Pain Knowledge Assessment Questionnaire regarding rehabilitation Program.
13.	MRC	Medical Research Council.
14.	MRI	Magnetic Resonance Image.
15.	NSAIDs	Non-Steroidal Anti-Inflammatory Drugs.
16.	NRS	Numerical rating scales.
17.	OA	Outcome Assessment.
18.	ODI	Oswestry Disability Index.
19.	OLBPD	Oswestry Low Back Pain Disability.
20.	OLBPD Q	Oswestry Low Back Pain Disability Questionnaire.
21.	PRI	Pain Rating Index.
22.	PROM	Passive Range of Motion.
23.	PFATLBP	Physical and Functional Assessment Tool for Low Back Pain.
24.	PSIS	Posterior superior iliac spine.
25.	PPIVQ	Patient Preliminary Informational Variables Questionnaires.
26.	SCI	Spinal Cord Injury.
27.	SIP	Sickness Impact Profile.
28.	SLR	Straight Leg Raising.
29.	UK	United Kingdom.
30.	VAS	Visual Analog Scales.
31.	WHO	World Health Organization.
32.	WRLBP	Work-Related Low Back Pain.

List of Definition of terms

Terms	Definition
Back Strain:	Back strain is an acute injury leading to lower back pain. It occurs when the patient flexes the back without bending the knees or makes rotating movements, creating significant stress on the intervertebral disk and muscles of the lower back (Robinson, 2004 and D'Amico & Barbarito, 2007).
Cauda Equina Syndrome:	Injury to the lumbosacral nerve roots below the conus medullaris results in the cauda equina syndrome. The patient experiences areflexia of the bowel, bladder, and lower extremities (D'orazio, 2007).
Chronic mechanical low back pain:	It is unpleasant feeling or sensation of the back that arising from repetitive strain and persisting for more than 3 months. It is significantly influenced by motion and often relieved by rest or certain position (Wilby, Seeley and Laing, 2008). Chronic Mechanical LBP is defined as pain without inflammatory or infectious cause and excluded organic and traumatic origin that is mechanical in nature and varies with physical activities and time. Additionally, it presents within the lumbosacral region, buttocks and thighs and it is seen to be pain that persists beyond twelve weeks (Vingard and Nachemson, 2005).
Disability:	It is a restriction or a lack of ability to perform an activity in the manner or within the range that is considered normal for human being (Schneider, Schmitt and Zoller, 2005).
Disk Herniation / prolapsed / rupture or extrusion:	An intervertebral disk is a pad that rests between the centers of two adjacent vertebrae. Disk provides cushions for spinal movement. Displacement of intervertebral disk material may be referred to as prolapse, herniation, rupture, or extrusion (Senegas, 2008).

List of Definition of terms (Cont'd)

Terms	Definition
Lumbar disc herniation (LDH):	Refers to the process in which there has been rupture of the annulus fibers and subsequent displacement of the central mass of the disc in the intervertebral space common to posterior or posterolateral aspect of the disc (Nyland, 2006). Prolapsed or herniated disc – This condition is the result of the interior soft portion of the disc bulging out (herniation) and pushing through a weak area in the outside of the disc (D'Orazio, 2007).
Posture:	It is the relative position or attitude of the body at any one period of time with minimal joints stress (Umphred, 1998). Langran (2004) added that posture has been defined as "a position or attitude of the body, the relative arrangement of the body parts for a specific activity, or a characteristic manner of bearing one's body". Optimal Posture is one in which the body segments are balance in the position of optimal alignment and maximum support with full mobility available. It allows for pain free movement with a minimum of energy expenditure (Trinkoff, 2002).
Poor posture:	It is a faulty relationship of the various parts of the body which produces increased strain on the supporting structures and in which there is less efficient balance of the body over its base of support (Schoen, 2000). Static Fatigued patient: it is inability of the muscles to work hard to hold up the body due to poor posture which results in decrease of mobility and needing of extra energy to feel good (Seely and Stephen, 2002). Dynamic Fatigued Patient: it is inability of the muscles to sustain dynamic effort for a long period of time because of poor posture which results in decreased of blood flow to the muscles (Trinkoff, 2002).

List of Definition of terms (Cont'd)

Terms	Definition
Physical functioning	<u>Theoretical definition:</u> Physical function refers to those sensorimotor skills necessary for the performance of usual daily activities. Getting out of bed, bathing, climbing stairs, and walking are examples of physical functions (O'Sullivan and Schmitz, 1994). <u>Operational definition:</u> physical outcome is measured using the revised Oswestry Index Questionnaires (Version 2).
Radiculopathy:	It is often caused by direct pressure from a herniated disc or degenerative changes in the lumbar spine that cause irritation and inflammation of the nerve roots. Radiculopathy usually creates a pattern of pain and numbness that is felt in legs in the area of skin supplied the by sensory fibers of the nerve root and weakness in the muscles that are also supplied by the same nerve root. The number of roots that are involved can vary from one to several and it can also affect both sides of the body at the same time (Nyland, 2006).
Rehabilitation Nursing:	<u>Theoretical definition:</u> Rehabilitation nursing is the diagnosis and treatment of human responses of individuals and groups to actual or potential health problems stemming from altered functional ability and altered lifestyle. Rehabilitation nursing interventions are nursing actions identified as appropriate to overcome or mitigate the effects of the patient's problems on optimal life functioning and to accomplish the desired patient outcomes (Chin, Finocchiaro and Rosebrough, 1998). Carragee (2006) viewed rehabilitation after lumbar disc surgery as process of interaction and negotiation between the patients and the health care system about realistic goals and relevant activities.

List of Definition of terms (Cont'd)

Terms	Definition
Rehabilitation	<u>Operational definition:</u> A group of nursing protocols
Nursing (Cont'd):	designed to eliminate or reduce the post-laminectomy patient's problems with the overall goal of enhancing their function and promoting independence and avoid recurrence of symptoms.
Spinal Stenosis	It is a condition that is caused when pressure is put on both the spinal cord and nerves caused by a narrowing of the spinal canal. This causes pain and numbness. If compression remains untreated, weakness or paralysis of the innervated muscles groups may result (Black and Hawks, 2005).
Spine Degeneration	With ageing, the spine ligaments can harden and become thicker causing enlargement of the joint bones creating bone spurs (Rucker, Cole and Weinstein, 2001).
Spondylolisthesis:	It is the forward slipping of one vertebra out of alignment (Punder, 2000).
Spondylolysis:	Spondyl(e) means vertebra. Spondylolysis is a structural defect in the lamina or neural arch of the spine. The vertebral arch slips forward. The lumbar spine is most commonly involved (Micheal, 2003).