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Functional Outcome Measures in Acute Low Back Pain Patients in Follow up

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Abstract

Introduction with Objective: *To assess the functional outcome measures in acute low back patients in different follow up.* ***Materials and Methods:*** *This observational study was carried out at the Department of Physical Medicine and Rehabilitation, Dhaka Medical College Hospital (DMCH), Dhaka from November 2021 - May 2022. All patients of acute low back pain attending the Physical Medicine and Rehabilitation department, Dhaka Medical College Hospital during study period were the study population. Purposive sampling was done according to availability of the patients. All the data were compiled and sorted properly and the quantitative data was analyzed statistically by using Statistical Package for Social Science.* ***Result:*** *Mean age of study population was 33.72±10.55 years with a majority of age group 16-45 years. Male predominance was found 57%. At 2 weeks, 6 weeks and 12 weeks 68.9% of the patient's had recovered. 52.2% of patient's noticed days off from their work initially due to low back pain and this figure reduced to 25.6% , 16.6% 8.9% at 2 weeks, 6 weeks and 12 weeks respectively.* ***Conclusion:*** *31.1% of the patient's didn't recover from the presenting episode within 12 weeks.*

Keywords: *Functional outcome, Low back pain.*

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Introduction:

Low back pain is the most common reason that patients' seek physical therapy[1]. It is estimated that 80%-90% of all people experiences at least one episode of back pain in their lifetime[2]. Additionally it causes work losses, which in recent years have increased more rapidly than any other common form of incapacity[3]. The course of low back pain is extremely unpredictable—probably due to a large number of different and usually unknown underlying pathological processes[4]. It therefore seems unlikely that any particular treatment will show a major effect when applied indiscriminately to all low back pain patients. This is in accordance with recent studies in which various treatment regimes had proved to have little influence on the time to recovery in patients with low back pain[5]. Causes of acute low back pain (LBP) are due to back strain, acute disc herniation, osteoarthritis, spinal stenosis, spondylolisthesis, ankylosing spondylitis, infection and malignancy[6]. In

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case of acute LBP 5-10% of cases become chronic[7]. The impact of surgery on the management of acute LBP is low[8]. For the majority of non surgical patients, activity modification, analgesics, muscle relaxant, education, spinal manipulation therapy and epidural injections are recommended to shorten recovery time and as symptomatic therapy[9]. There are many different scales to assess and measure pain intensity and disabilities resulting from low back pain. Among those, Numeric Rating Scale (NRS)[10] and Roland Morris Disability Questionnaire (RMDQ) are two valid, reliable and widely used scales to assess pain intensity and disabilities or functional outcomes respectively. Roland and Morris[11] developed a 24-item back pain disability scale to serve as a primary outcome measure. RMDQ is a self administered disability measure in which greater levels of disability are reflected by higher numbers on a 24-point scale. It is among the most widely used measure of back related function[12] and has been proposed as part of an international instrument for standardized use[13]. Roland and Morris 65 classified patients with positive response to 14 or more of the 24 items as having an unfavorable outcome.

Materials & Methods:

This observational study was conducted at the Department of Physical Medicine and Rehabilitation in Dhaka Medical College Hospital, for a period of 6 months following the date of acceptance of research protocol. A total of 90 patients attending in outpatient ward of above mentioned department with acute low back pain <8 weeks were included as study population according to selection criteria. Following informed written consent, detailed history, physical examination and necessary investigations were performed. Data were collected by interview using a structured questionnaire. Collected data were analyzed by the SPSS 26.

Results:

The age range of the patients in this study was 16-60 years. The mean (±SD) age of the patients was 33.72 ± 10.55 years. Among the total number of 90 patients, 78(86.7%) cases were of age group 16-45 years and 12(13.3%) cases were >45 years age group. Out of total 90 patients, male was predominant than female, which was 57(63.3%) cases and 33(36.7%) cases respectively (Table I).

Table I: Socio-Demographic Charateristics of the study subjects (n=90)

Parameter	Number	percentage
Age (years)		
16-45	78	86.7%
>45	12	13.3%
Sex		
Male	57	63.7%
Female	33	36.7%

Among the total 90 patients, maximum showed moderate pain intensity which was 50(55.6%) cases followed by severe and mild intensity which was 33(36.7%) and 7(7.8%) cases respectively. Out of 90 patients, 56(62.2%) cases belong to RMDQ <14 group and 34 (37.8%) cases belong to RMDQ ≥ 14 group. Out of 90 patients, 47(52.2%) cases were not working due to LBP and 43(47.8%) cases continue their work (Table II).

Table II: Baseline Charateristics of the study subjects (n=90)

Parameter	Number	percentage
Intensity of pain		
Mild	07	7.8%
Moderate	50	55.6%
Severe	33	36.7%
Disability (RMDQ)		
<14	56	62.2%
≥ 14	34	37.8%
Working status		
Working	43	47.8%
Not working	47	52.2%

At 2 weeks, 6 weeks and 12 weeks, 46(51.1%), 57(63.3%) and 62(68.9%) cases became pain free. During enrollment, mild pain intensity was found in 7(7.8%) cases and this figure increased to 18(20%), 20(22.2%) & 20(22.2%) cases at 2 weeks, 6 weeks & 12 weeks respectively. Moderate pain was found in 50(55.6%) cases during enrollment and during follow up, it was found in 21(23.3%), 13(14.4%) & 8(8.9%) cases at 2 weeks, 6 weeks & 12 weeks respectively. Severe pain was found in 33(36.7%) cases at enrollment and this figure decreased to 5(5.6%) cases at 2 weeks and no pain was found at 6 weeks & 12 weeks (Table III).

Table III: Low back pain intensity at enrollment and at follow up (n=90)

Intensity	Enrollment No. (%)	Week 2 No. (%)	Week 6 No. (%)	Week 12 No. (%)
Absent	0	46 (51.1)	57 (63.3)	62 (68.8)
Mild	7 (7.8)	18 (20.0)	20 (22.2)	20 (22.2)
Moderate	50 (55.6)	21 (23.3)	13 (14.4)	8 (8.9)
Severe	33 (36.7)	5 (5.6)	0	0

RMDQ (Roland Morris Disability Questionnaire) = 0 (No Disability) At 2 weeks, 6 weeks and 12 weeks, 60(66.7%), 67(74.4%) and 72(80.0%) cases became disability free. During enrollment, RMDQ <14 was found in 56(62.2%) cases, which was decreased to 25(27.8%), 23(25.6%) and 18(20.0%) cases at 2 weeks, 6 weeks and 12 weeks respectively. RMDQ >14 was found in

34(37.8%) cases during enrollment, which was decreased to 5(5.6%) cases at 2 weeks and no disability was found at 6 weeks & 12 weeks. At enrollment, 47(52.2%) cases could not continue their work due to LBP and this figure decreased to 23(25.6%), 15(16.7%) and 8(8.9%) cases at 2 weeks, 6 weeks and 12 weeks respectively. 43(47.8%) cases did not stop their work at enrollment and this figure raised to 67(74.4%), 75(83.3%) and 82(91.1%) cases at 2 weeks, 6 weeks and 12 weeks respectively (Table IV).

Table IV: Disability at enrollment and at follow up (n=90)

Disability	Enrollment No. (%)	Week 2 No. (%)	Week 6 No. (%)	Week 12 No. (%)
RMDQ = 0	0	60 (66.7)	67 (74.4)	72 (80.0)
RMDQ<14	56 (62.2)	25 (27.8)	23 (25.6)	18 (20.0)
RMDQ 14	34 (37.8)	5 (5.6)	0	0
Not working	47 (52.2)	23 (25.6)	15 (16.7)	8 (8.9)
Working	43 (47.4)	67 (74.4)	75 (83.3)	82 (91.1)

Among the total 90 patients,most of the patients had recovered, which was 62 (68.9%) cases and 28 (31.1%) cases had not recovered (Table V).

Table V: Distribution of study population according to functional outcome (n=90)

Outcome	Frequency	Percentage
Recovered	62	68.9
Not recovered	28	31.1

Discussion:

Most of the patients in this study were in middle age group. The sample population showed, the mean (± SD) age of the patients was 33.72 ± 10.55 years, which has more or less similarity with another study done in Bangladesh, where the mean (± SD) age of the patients was 38.5 ± 9.01[14]. Among the total 90 patients, 57 (63.3%) were male and 33 (36.7%) were female. Costeaet al[15] studied 103 patents, among them 60% were male. In this study, at 2 weeks, 6 weeks and 12 weeks; 51.1%, 63.3% and 68.9% of participants reported being pain free; 66.7%, 74.4% and 80% reported being disability free. Participants who could not continue their work due to LBP at enrollment was 52.2% and this figure reduced to 25.6%, 16.7% & 8.9% at 2 weeks, 6 weeks & 12 weeks respectively. Nicholas Henschke et al[16] found that among 969 patients; at 6 weeks, 3 months and 12 months; 40%, 52% and 57% of patients reported being pain free; 60%, 71% and 75% reported being disability free respectively. The present study more or less correlates with the above international study. The slight discrepancy in the study may be due to small number of patients included in this study. The present study showed, 68.9% recovered completely by 12 weeks and 31.1% developed chronicity. Nicholas Henschkeet al[16] found, 57% recovered completely by 3 months and one third of patients did not recovered within 1 year. In this study, we found, recovery was rapid. Costeet al[15] enrolled 103 patients from French primary care and found recovery was rapid. The present study more or less correlates with the above international study.

Conclusion:

In this study, most of the patients had recovered from acute low back pain and recovery was rapid.

Conflict of Interest: None.

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