

# Adherence of the Patients is Crucial for Successful Outcomes of Physiotherapeutic Interventions: A Case Study of Severe Chronic Low Back Pain

Pradip Kumar Sarkar<sup>1</sup>, Amarjit Singh<sup>2</sup>

<sup>1</sup>Department of PRM (Physiotherapy), <sup>2</sup>Department of Community Medicine, Post Graduate Institute of Medical Education & Research, Chandigarh, India.

Corresponding Author: Dr. Pradip Kumar Sarkar

DOI: <https://doi.org/10.52403/ijhsr.20240219>

## ABSTRACT

Low back pain (LBP) is a disabling problem among both the sexes throughout the world. It is a big burden to the national economy, as it is associated with disability, work absence and poor quality of life. It affects 60-80% of people at some point of life. A point prevalence of up to 23% in the world's adults has been reported for chronic LBP. Different types of home- or clinic- based physiotherapy management protocols are available for LBP. But adherence of physiotherapy management protocol is important. These can improve the chronic LBP to enable the patients to live a normal life.

**Keywords:** Chronic low back pain, Adherence physiotherapy, Quality of life.

## INTRODUCTION

Low back pain (LBP) is a disabling problem among both the sexes throughout the world. It is a big burden to the national economy, as it is associated with disability, work absence and poor quality of life. Pain in the lumbosacral region of the spine that persist for more than 12 weeks is referred to as chronic low back pain (CLBP). In general, CLBP is thought to be a result of mechanical factors like poor work habits & posture, type of profession and psychological factors rather than an underlying ailment like pathological factors.<sup>1</sup>

Back pain affects 60-80% of people at some point of life. A point prevalence of up to 23% in the world's adults has been reported for chronic LBP. This population has also shown a one-year recurrence rate of 24-80%. Even 11-33% adolescents suffer from LBP<sup>2</sup>.

CLBP is associated with disability at bio psychosocial level, with the pain and disability at physiological, psychological and social factors which reciprocally affect one another.<sup>3,4</sup> Patients with CLBP frequently experiences a reduced quality of life as it can interfere with the day-to-day activities of daily living like dressing, cooking, walking, bathing and work-related functions etc.<sup>2</sup> However, many studies have shown that both pain and disability have an impact on a patient's quality of life and are more influenced by their duration.<sup>5</sup>

To deal with the quality of life in the patients with chronic low back pain, various outcome measures have been designed. These outcome measures are a crucial component of evidence-based practice intended to show efficacy and support physical therapist's care<sup>5</sup>.

Contemporary healthcare systems are heavily burdened by CLBP, because it poses high treatment expenses and rising societal

costs to the sufferer. Patient adherence is crucial for the success of home-based, unsupervised exercise programs but challenging to acquire. It is a self-limiting condition. "The extent to which a person's behaviour corresponds with approved suggestions from a health care practitioner" is how adherent behaviour is defined (WHO, 2003). Patients must attend clinic appointments, stick to the clinic and home-based components of the treatment, therefore evaluating adherence is challenging because it is not a single, consistent behaviour.<sup>6</sup>

Obesity and musculoskeletal disorders (MSD) are also strongly linked.<sup>7,8</sup> MSD like LBP represent a considerable health problem globally.<sup>9</sup> MSD are cumulative in nature and develop gradually in response to prolonged repetitive activities or load that affects the soft tissues of the body.<sup>10</sup> The association between overweight and obesity and MSD has been well described in literature but it remains controversial.<sup>11</sup> Due to MSDs people tend to avoid physical work and consequent gain weight.<sup>12,13</sup> Excessive weight gain may result in development of obesity which can cause musculoskeletal problem indicating strong bidirectional relationship between both.<sup>14</sup> Obesity is commonly defined on the basis of the Body Mass Index (BMI), which is calculated by dividing body weight (kg) by body height (m) squared.<sup>15</sup> This measure commonly describes the level of fatness in population and widely used to estimate population trends in fat for the past several decades.<sup>16</sup>

LBP affect activities of daily living (ADL). A variety of factors can cause CLBP in women. While some causes are common to all sexes, conditions and factors specifically related to CLBP among female includes menstrual pain, post-menopausal pain, pelvic inflammatory disease, fibroid, endometriosis, pregnancy related LBP, ovarian cyst, prolapse uterus, urinary incontinence etc<sup>17</sup>. But there are scopes which can help to prevent or relieve most LBP episodes, especially for women younger than age 60 and in post-natal stage.

If prevention fails, simple home treatment and using the body correctly often will heal the back within a few weeks. Surgery is rarely needed to treat LBP if conservative measures are taken timely. Physiotherapy can easily prevent and even cure LBP.

### **Management available for chronic LBP:**

Different types of management procedures are available for CLBP in physiotherapy. Many of them involve a need to follow the prescribed protocol at home and some of them are to be carried out in the physiotherapy clinical set up<sup>18</sup>. So, the subjects can improve their quality of life and at the same time burden of the patients in the out-patient's department (OPD) in the hospital may also reduce<sup>19</sup>. Studies shows that simple exercise and postural advice during and after pregnancy gives very good results. Scientifically designed exercise program helps to reduce pain & stiffness in the joints, easier normal delivery, improves urinary control, improves flexibility, reduce coccyx pain, and even maintains long term fitness level of women.

CLBP is a simple problem, made difficult due to poor patient adherence to the advice given. Following Case Report amply demonstrates it.

### **CASE REPORT**

A 29-year-old unmarried woman working privately as a fashion designer, was referred to the physiotherapy department from pain clinic of PGIMER, Chandigarh in February, 2017. She was an active and enthusiastic girl who wanted to participate sports and games. But she was forced to stop participating in sports due to her poor fitness level. She was having CLBP for last 13 years. She had consulted different general medical practitioners, who advised her conservative management along with physiotherapy.

However, she never adhered to the regime advised by physiotherapists. Apparently, she was not advised to do it seriously by her doctors. No improvement was there. Rather,

her condition deteriorated day by day, physically and psychologically.

**Past History:** The patient had injured her low back area at the age of 16 years while she was playing with her class mates in the school. Her family physician prescribed her some medications and advised her to avoid any heavy activities. But there was not much relief. She consulted different general medical practitioners for next 3-4 years but the pain persisted.

As the pain continued to worsen day by day, she consulted specialists, orthopedicians and neurosurgeons in a private hospital. Oral medications were advised along with local administration of steroid (epidural injection) in the low back area (L-2, L-3) under local anesthesia in 2008. She was alright for few months after taking such treatment, but problem relapsed with a more severe intensity and she was unable to continue her regular activities of daily life.

#### **Management done at physiotherapy department, PGIMER, Chandigarh:**

The patient was advised a physiotherapy protocol which included a warm-up session of different exercises (awareness of the back, pelvic tilt, lumbar rotation, arm movements, whole-body movement in standing). These well-known exercises target the muscles of the back extensors, abdominals, lateral buttocks, trunk rotators, posterior buttocks, leg muscles, oblique abdominals (e.g. the plank, diagonal arm and leg lift), as well as exercises for flexibility. After each set of exercise session, the patient was asked to keep a record of the level of each exercise<sup>20</sup>.

In addition, following exercise program along with the electrotherapy modalities were also advised with regular follow ups.

- a) Microwave Diathermy and Intermittent lumbar traction (MWD & ILT) for 10 sittings.
- b) Ultrasound therapy in the tender point (lumbo-sacral area & SI joint area).

- c) Spinal stabilization, spinal flexion & spinal rotation exercise.
- d) Tender point massage.
- e) Postural adjustment and modifications as per the requirements of the patient's professional and personal aspects.

The first set of management protocol was completed over 15 days. The patient sincerely followed the advice. There was significant improvement in her pain and flexibility. As per patient's version, there was a 40% relief in pain and flexibility.

After that, the patient was asked to continue the exercises along with hot water fomentation and postural care at home. She was advised to avoid any heavy exercise at home, with a caution to stop the exercise if any complications arose. She was advised to report for the follow up after one month for another set of physiotherapeutic intervention. She strictly continued at home with all the exercises advised.

After one month, the patient was better. She was then put on the second set of treatment for another 10 sittings along with few more exercises for increasing physical fitness related to strength, flexibility and pain reduction. This set of physiotherapeutic treatment were continued every three months till next one and half year. The patient strictly followed up all the advice as per the instructions of the physiotherapist. Physically and mentally patient became much better gradually and started living a normal life. There was very good improvement in comparison to pretreatment stage. She continued doing the exercises and other home management later on as per the advice of the physiotherapist.

#### **RESULT**

The follow up was continued for every six months till next 5 years. She was able to maintain her fitness level later on very well. In 2020, she got married and started living normally. In the last review in July 2023, it was found that the patient was doing very well. Occasionally, she does have low back pain episodes even now. For this, she takes hot water fomentation which gives her very

good relief from pain along with the exercises which was advised for her. She was having remarkable positive result in respect of physically and mentally.

## DISCUSSION

As LBP becomes persistent over time it is linked to long-term incapacity and, as a result, which imposes a heavy socioeconomic burden on the affected people. Around 80 percent of low back pain-related medical expenses and societal costs are borne by the 10 percent of patients who also have chronic pain and disability. Low back pain is a common condition that responds well to physiotherapeutic treatment. However, the patients must follow their treatment regimen for physical therapy to be successful. One of the core and crucial components of physiotherapy is giving patients a home exercise program which shall strictly be followed for better outcomes.<sup>2</sup>

It is observed by the physical therapists that many a time patient do not follow the home exercise regimens they are recommended. Completing all home exercises as directed and adjusting to suggested behavioural changes are clearly necessary for a successful response to physical therapy. Poor treatment outcomes are the result of patient non-adherence with physical therapy<sup>21</sup>. It is reportedly one of the main causes of delayed recovery or recurrence of the symptoms.

This also happened with this patient previously. But when she reported to physiotherapy department PGIMER, Chandigarh, she got the correct advice and motivation. Then she became a very good follower of the physiotherapeutic instructions.

She had even contemplated committing suicide, because of all the complications she was suffering from. But after the complete physiotherapy session, she started living like a normal woman.

## CONCLUSION

Here, the responsibilities of physiotherapists are also very much important. They are required to motivate the patient along the normal physiotherapeutic treatment. They should also investigate the root cause of the problems so that treatment plan can be arranged accordingly<sup>22</sup>. For this planning, physiotherapist needs to spend more time with the patients so that they can explain their problems to them without any hesitation. So, the outcome depends on the adherence of the patients with physical therapy treatment as well as the proper planning of the treatment strategy and motivation of the patient by the physiotherapist.

### Declaration by Authors

**Acknowledgement:** None

**Source of Funding:** None

**Conflict of Interest:** The authors declare no conflict of interest.

## REFERENCES

1. Vincent E C, Sarwan G, Alexander M. D, Varacallo M. Back Pain. 2023 Feb 23. StatPearls Publishing.
2. Balagué F1, Mannion AF, Pellisé F, Cedraschi C. Non-specific low back pain. Lancet. 2012 Feb 4; 379(9814):482-91.
3. Kovacs FM, Abreira V, Zamora J et.al. Correlation between pain, disability, and quality of life in patients with common low back pain. Spine. 2004; 29(2):206-10.
4. Durmus D, Alayli G, Goktepe AS et.al. Is phonophoresis effective in the treatment of chronic low back pain? A single-blind randomized controlled trial. Rheumatol. Int. 2013; 33(12):1737-44.
5. Gatchel RJ, Peng YB, Peters ML et.al. The biopsychosocial approach to chronic pain: scientific advances and future directions. Psychol Bull. 2007; 133(4):581-589.
6. Hägg O, Burckhardt C, Fritzell P et.al. Quality of life in chronic low back pain: A comparison with fibromyalgia and the general population. J. Musculoskelet. Pain. 2003; 11(1):31-8.
7. Kinkade S. Evaluation and treatment of acute low back pain. Am Ac of Family Phys. 2007: 1182-1188.

8. Aure O F, Nilsen JH, Vasseljen O. Manual Therapy and Exercise Therapy in Patients With Chronic Low Back Pain: A Randomized, Controlled Trial With 1-Year Follow-Up. *Spine*. 2003; 28(6):525-532.
9. Ferreira ML, Ferreira PH, Latimer J, Herbert RD, Hodges PW, Jennings MD, Maher CG, Refshauge KM. Comparison of General Exercise, Motor Control Exercise and Spinal Manipulative Therapy for Chronic Low Back Pain: A Randomized Trial. *Pain*. 2007; 131:31-37.
10. Chou R, Qaseem A, Snow V, Casey D, Cross TJ, Shekelle P, Owens DK. Diagnosis and Treatment of Low Back Pain: A Joint Clinical Practice Guideline from the American College of Physicians and the American Pain Society. *Ann Intern Med*. 2007; 147:478-491.
11. Qaseem A, Wilt TJ, McLean RM, et al. Noninvasive treatments for acute, subacute, and chronic low back pain: a clinical practice guideline from the American College of Physicians. *Ann Intern Med* 2017; 166: 514-530.
12. Koes BW, van Tulder M, Lin C-WC, Macedo LG, McAuley J, Maher C. An updated overview of clinical guidelines for the management of non-specific low back pain in primary care. *Eur Spine J* 2010;19:2075–94
13. O'Sullivan, P. and Lin, I. Acute low back pain beyond drug therapies. *Pain Management Today*, 2014, 1(1):8-14
14. Koes BW, van Tulder MW, Thomas S. Diagnosis and treatment of low back pain. *BMJ* 2006; 332:1430–34.
15. Hancock MJ, Maher CG, Latimer J, et al. Systematic review of tests to identify the disc, SIJ or facet joint as the source of low back pain. *Eur Spine J* 2007; 16:1539–50.
16. Ford J, Hahne A, Surkitt L, Chan A, Richards M. The Evolving Case Supporting Individualised Physiotherapy for Low Back Pain. *Journal of clinical medicine*. 2019 Sep; 8(9):1334.
17. Kozinoga M, Majchrzycki, Piotrowska S. Low back pain in women before and after menopause. *Menopause Review*. 2015 Sep; 14(3): 203–207.
18. Sarkar P K, Singh P, Singh A, Dhillon M S, Suri V. *Pregnancy And Motherhood: Safe Exercise for Fitness*. New Era International. 2018; ISBN 978-81-290-0195-5.
19. Hill JC, Whitehurst DG, Lewis M, Bryan S, Dunn KM, Foster NE, Konstantinou K, Main CJ, Mason E, Somerville S, Sowden G, Vohora K, Hay EM. Comparison of stratified primary care management for low back pain with current best practice (STarT Back): A randomised controlled trial. *Lancet* 2011; 378:1560-71.
20. Finta R, Nagy E, Bender T. The effect of diaphragm training on lumbar stabilizer muscles: a new concept for improving segmental stability in the case of low back pain. *Journal of pain research*. 2018 Nov 28:3031-45.
21. Kjaer P, Kongsted A, Ris I, Abbott A, Rasmussen CD, Roos EM, Skou ST, Andersen TE, Hartvigsen J. GLA: D® Back group-based patient education integrated with exercises to support self-management of back pain-development, theories and scientific evidence. *BMC musculoskeletal disorders*. 2018 Dec 1; 19(1):418.
22. Almeida M, Saragiotto, Richards B, Maher C. Primary care management of non-specific low back pain: key messages from recent clinical guidelines. *Med J Aust* 2018; 208 (6): 272-275.

How to cite this article: Pradip Kumar Sarkar, Amarjit Singh. Adherence of the patients is crucial for successful outcomes of physiotherapeutic interventions: a case study of severe chronic low back pain. *Int J Health Sci Res*. 2024; 14(2):149-153. DOI: <https://doi.org/10.52403/ijhsr.20240219>

\*\*\*\*\*