

Integrated Approach of Yoga Therapy towards Chronic Low Back Pain: A Case Report

Reshma P. Jogdand^{1*}, Shekhar Mukhiya Sunuwar², Amit Singh³ and R. Nagrathna⁴

Department of Life Sciences, SVYASA University, Bangalore^{1,3,4}
The School of Yoga and Naturopathic Medicine, SVYASA University, Bangalore²

KEY WORDS

Lower back pain
Yoga therapy
Naturopathy
Physiotherapy
Quality of life

ABSTRACT

This case report represents the patient of lower back pain (LBP) who visited Arogyadhama (SVYASA University, Bangalore). Patient was suffering from low back pain and multiple joint pain at the time of visit and 14 days Yoga intervention was provided to the patient for pain management, which helped the patient in relieving the pain and improving the muscular strength and quality of life significantly. The present case study is an attempt to provide IAYT (Integrated approach of Yoga therapy) practices in combination with naturopathy and physiotherapy for the maintenance of LBP profile and symptoms.

doi: 10.38205/imcr.020115

*Corresponding Author:

Reshma P. Jogdand
Department of Life Sciences,
SVYASA University, Bangalore
Contact no: +91-9449164937
E-mail: reshma.bnys@gmail.com

Introduction

Chronic low back pain (CLBP) is a chronic pain syndrome of the lower back region lasting at least for 3 months. It is the most common musculoskeletal condition affecting the adult population. Many authors define CLBP as pain that lasts beyond the expected period of healing (1). CLBP is a main cause of physical disability worldwide and needs significant government assistance and financial help to resolve the issue (2). Non-specific LBP does not have any recognizable pathology (such as infection, tumor, osteoporosis, rheumatoid arthritis, fracture, or inflammation) and traits (3).

Commonness of incessant LBP is 4.2% among the adults in the age group of 24 to 39 years and 19.6% among 20 to 59 years (5). Among nine investigations, six show prevalence of LBP in about 3.9%–10.2% people aged 18 or more, whereas other three investigations show prevalence range of the same between 13.1% and 20.3%. LBP predominance was noticed 25.4% among Brazilian population while it was 15 to 45% in French human services laborers. Pervasiveness of CLBP is evaluated to be 5.91% in Italy (2). The prevalence of acute and CLBP in adults doubled in the last decade and continues to increase dramatically in the aging population, affecting both men and women in all ethnic groups (6).

Side effects, pathology, and radiological appearances are ineffectively associated with CLBP. Intensity of pain is indefinite in about 85% of individuals suffering from CLBP. About 4% of individuals with CLBP in essential consideration has pressure breaks, and about 1% are known to be associated

with tumor. The commonness of prolapsed intervertebral plate among individuals with CLBP is about 1% to 3%, while Ankylosing spondylitis and spinal diseases are more uncommon. These findings can't be used for an authoritative conclusion on incessant LBP. Different factors, other than physical, may be associated with progression of CLBP which includes hazard factors such as substantial physical work, bowing, turning, lifting and Psychosocial chance elements, such as nervousness, gloom, and mental worry, at work. Having a past history of LBP and a more extended span of critical hazard factors for chronicity. One efficient survey of described that some mental components such as trouble, burdensome state of mind, and somatization are related with an expanded danger of constant LBP. Working environment and individual factors are also thought to be associated with the progress of interminable LBP (4).

Case presentation

Recruitment of patient

A 51 year old female from Telengana who visited Prashanti Kutiram (Arogyadhama) SVYASA for treatment of her CLBP was enrolled as a participant for this case study after taking her written consent and explaining her about the treatment regimen. She was kept in section 'E', which deals with spinal disorders and back pain. She resided in the campus for a period of 14 days (6th March, 2020 to 19th March, 2020). Yoga therapy, which included loosening practices (Table 1), Pranayams (Table 2), breathing practices (Table 3) and asanas

(Table 4) was combined with Naturopathy (Table 5) and Physiotherapy (Table 6)s for her CLBP treatment. Specific diet plan (Table 7) was also followed by participant. Below is a treatment regimen that was provided to the patient during her stay in SVYASA.

IAYT Protocol

Treatment Regimen

Loosening Practice (7)

Table 1: Loosening practices followed by participant

S. No.	Practice	Duration per session	Frequency per day	Duration of intervention
1	Ankle movement	10 times	2 times a day	2 weeks
2	Feet movement inward-outward	10 times	2 times a day	2 weeks
3	Ankle rotation	10 times	2 times a day	2 weeks
4	Butterfly	20 times	2 times a day	2 weeks
5	St. leg raising	5 times	2 times a day	2 weeks
6	Shoulder Rotation	10 times	2 times a day	2 weeks
7	Upper arm stretch	10 times	2 times a day	2 weeks
8	Vertical stretch of knee	10 times	2 times a day	2 weeks
9	Neck movement	10 times	2 times a day	2 weeks
10	Side leg raising	10 times	2 times a day	2 weeks
11	Alternate foot knee	10 times	2 times a day	2 weeks
12	Sideward bending	10 times	2 times a day	2 weeks
13	Cross leg L.S	10 times	2 times a day	2 weeks
14	Hip stretch	10 times	2 times a day	2 weeks
15	Back stretch with alternate leg	10 times	2 times a day	2 weeks
16	Full butterfly	10 times	2 times a day	2 weeks
17	Alternate & both leg raising	10 times	2 times a day	2 weeks
18	Side leg raising	10 times	2 times a day	2 weeks

Pranayama (8)

Table 2: Pranayams followed by participant

	Pranayama	Duration of procedure	Frequency	Duration of Intervention
1	<i>Nadishuddhi Pranayama</i>	27 Rounds for each nostril	4 times a day	2 weeks
2	<i>Brahmari</i>	9 Rounds	2 times a day	2 weeks
3	<i>Naadaanusandhna</i>	5 Rounds	2 times a day	2 weeks

Deep Relaxation Technique (10–15 minutes) (9)

Each session of passive exercise, pranayama was completed with D.R.T. (Deep Relaxation Technique). Deep Relaxation Technique (D.R.T.) is a deeper and more intense form of relaxation. For making participant comfortable during relaxation session, DRT was done in *Savasana* (Corpse Pose) because it is generally done for 15 minutes.

Breathing Practices (10)

Table 3: Breathing practices followed by participant

S. No.	Breathing Practices	Duration of procedure	Frequency	Duration of Intervention
1	Hand Stretch Breathing	2 minutes	2 times a day	2 weeks
2	Hands In and Out Breathing	2 minutes	2 times a day	2 weeks
3	Ankle stretch Breathing	2 minutes	2 times a day	2 weeks
4	Tiger Breathing	2 minutes	2 times a day	2 weeks

Yogasana (11)

Table 4: Asanas followed by participant

	Yogasanas	Duration of procedure	Frequency	Duration of Intervention
	Standing Position			
1	sasankasana	2 minutes	2 times a day	2 weeks
2.	Dorsal stretch (naukasana)	2 minutes	2 times a day	2 weeks
3	Pavanmuktasanakriya (without lifting the head)	2 minutes	2 times a day	2 weeks
4.	Bhujanagasana	2 minutes	2 times a day	2 weeks
5	Dorsal stretch	1 minute	2 times a day	2 weeks
6	salabhasana	2 minutes	2 times a day	2 weeks
7	Walking		2 times a day	2 weeks
8	Side leg raising	1 minute	2 times a day	2 weeks

Naturopathy (12)

Table 5: Naturopathy treatment followed by participant

S. No.	Treatments	Duration (minutes)	Frequency	Periods
1	Mud pack	15	1 time a day	1 week
2	Salt water bath	45	1 time a day	1 week
3	Mustard pack	30	1 time a day	1 week
4	Hot fomentation	15	1 time a day	1 week
5	Vibro massage	15	1 time a day	1 week

Physiotherapy (13)(14)

Table 6: Physiotherapy treatment followed by participant

S. No.	Treatments	Duration (minutes)	Frequency	Periods
1	ix. IFT	5	1 time a day	1 week
2	x. Ultrasound	5	1 time aday	1 week

Diet Protocol (8)

The participant was advised to take naturopathic diet consecutively for 14 days of her stay in Prashanti kuteeram. The pattern was as follows.

Lunch: (boiled diet) 1 chapati, 1 cup adl, 1 cup rice, butter-milk, 100 gm boiled vegetables (beans + pumpkin + beetroot + methi + spinach + knolkhol)

Dinner: (Raw diet) 2-3 slices fruits (papaya + watermelon + pomegranate/muskmelon), Vegetable salad (cucumber + pomegranate + beetroot + carrot), Butter milk.

Table 7: Weekly diet plan followed by participant

	8:00 am	10:00 am	12:00 pm	2:00 pm	5:00 pm	7:30 pm	8:30 pm
Saturday	Ash gourd juice	Barley water	Lunch	Buttermilk	Ash gourd juice	Dinner	Kashayam
Sunday	Carrot juice	Watermelon	Lunch	Buttermilk	Carrot juice	Dinner	Kashayam
Monday	Bottle gourd juice	Musk melon	Lunch	Buttermilk	Bottle gourd juice	Dinner	Kashayam
Thursday	Bottle gourd	Watermelon	Lunch	Buttermilk	Bottle gourd	Dinner	Kashayam
Wednesday	Ash guard juice	Carrot juice	Lunch	Buttermilk	Ash guard juice	Dinner	Kashayam
Thursday	Carrot juice	Ash guard	Lunch	Buttermilk		Dinner	Kashayam
Friday	Breakfast	-	Pongal + buttermilk	Buttermilk	-	Dinner	-

Diagnosis

Reduction of low back pain was noticed.

Table 8: Score of different parameters before and after the treatment regimen

Parameters	DOA	DOD
Pulse Beats/min	80 bpm	74 bpm
BP in mmHg	130/70 mm/Hg	148/98 mm/Hg
Respiratory Cycles/min	17 cpm	11 cpm
Bhramari Time (Sec)	15 sec	15 sec
Symptoms score	03	01
Straight leg raising Lt/Rt in degree	80/80	90/90
Sit and reach	46 cm	47 cm
Pain Scale Reading	09	05

Discussion

It was observed that the patient was able to maintain a healthy living by adopting IAYT which may have helped improving the patient’s overall health. During her stay she had undergone

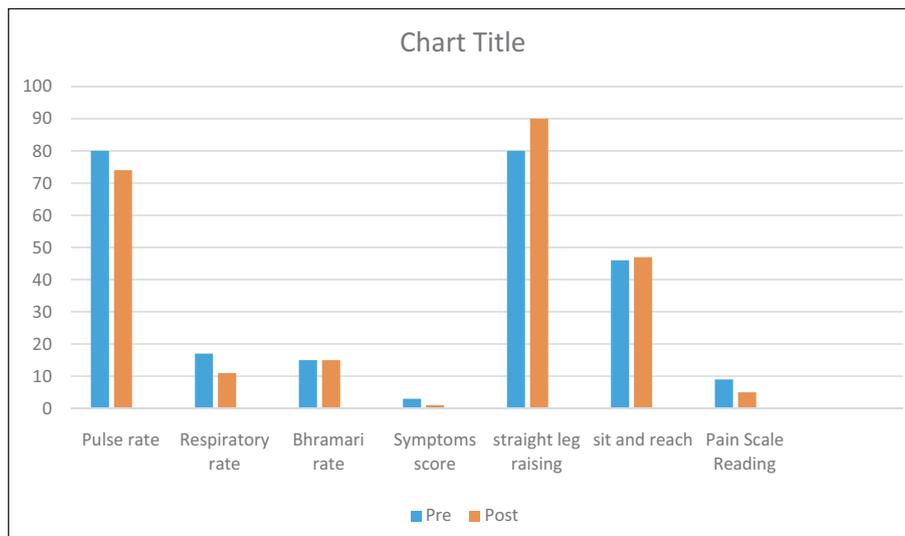


Fig. 1: Bars represent the intensity of different parameters diagnosed during treatment period of 14 days.

above mentioned yoga practice, meditation, relaxation techniques, Naturopathy treatments and Physiotherapy practices. There was marked positive changes in all vitals including Blood pressure, Respiratory rate and there was significant improvement in symptoms score and good number of reduction in straight leg raising and sit and reach scale.

Conclusion

Overall treatment of Yoga combined with physiotherapy, naturopathy and specific diet plan helped her to reduce LBP and symptom score such as difficulty in performing day to day activities and disturbed sleep due to pain and helped her to maintain the better quality of life. Above mentioned integrated treatment can be recommended to the patients with CLBP.

Acknowledgement

First of all, I bestow in front of Lord Dhanavantari and express deepest gratitude to the almighty. In addition I would like to acknowledge the following people who played an instrumental role in the completion of this project. I express my appreciation to the blessings of my gurus and salutations to my parents and all my teachers. I am grateful to Dr. Nagarathna and Dr. Amit Singh of research for sharing their thoughts with other people. Special thanks to a person who motivated me for this work is Dr. Amit Singh, his guidance and support makes me more strong and confident to study in this area.

I am appreciative to section therapist for their guidance and allowing me to provide Yoga therapy to their patients and their immense support in my presented work. My love and regards goes to my loving parents for their endless support and encouragement finally, my hearted thank to my husband Mr. Sumit Aundhekar for extending his support through out my work. I express my gratitude to all the Participants, as they were the true inspiration and purpose.

Authorship contribution

RJ and SM has written Article.

RN guided to write article.

AS has contributed in a treatment planning.

Informed consent

Yes.

Source of funding

Nil.

Conflict of interest

Nil.

Received Date: 04-07-20; Revised Date: 24-08-20

Accepted Date: 15-09-20

References

1. Johannes CB, Le TK, Zhou X, Johnston JA, Dworkin RH. The prevalence of chronic pain in United States adults: results of an Internet-based survey. *The Journal of Pain*. 2010 Nov 1;11(11):1230–9.
2. Allegri M, Montella S, Salici F, Valente A, Marchesini M, Compagnone C, Baciarello M, Manfredini ME, Fanelli G. Mechanisms of low back pain: a guide for diagnosis and therapy. *F1000Research*. 2016;5.
3. Andersson GB. Epidemiological features of chronic low-back pain. *The lancet*. 1999 Aug 14;354(9178):581–5.
4. Chou R, Huffman LH. Nonpharmacologic therapies for acute and chronic low back pain: a review of the evidence for an American Pain Society/ American College of Physicians clinical practice guideline. *Annals of internal medicine*. 2007 Oct 2;147(7):492–504.
5. Meucci RD, Fassa AG, Paniz VM, Silva MC, Wegman DH. Increase of chronic low back pain prevalence in a medium-sized city of southern Brazil. *BMC musculoskeletal disorders*. 2013 Dec;14(1):1–1.
6. Meucci RD, Fassa AG, Faria NM. Prevalence of chronic low back pain: systematic review. *Revista de saude publica*. 2015 Oct 20;49:73.
7. Ebnezar J, Nagarathna R, Bali Yogitha HR. Effect of integrated yoga therapy on pain, morning stiffness and anxiety in osteoarthritis of the knee joint: a randomized control study. *International Journal of Yoga*. 2012 Jan;5(1):28.
8. Macphail K. C-reactive protein, chronic low back pain and, diet and lifestyle. *International Musculoskeletal Medicine*. 2015 Apr 1;37(1):29–32.
9. Blödt S, Pach D, Roll S, Witt CM. Effectiveness of app-based relaxation for patients with chronic low back pain (Relaxback) and chronic neck pain (Relaxneck): study protocol for two randomized pragmatic trials. *Trials*. 2014 Dec;15(1):1–9.
10. Smith MD, Russell A, Hodges PW. Disorders of breathing and continence have a stronger association with back pain than obesity and physical activity. *Australian Journal of Physiotherapy*. 2006 Jan 1;52(1):11–6.
11. Tilbrook HE, Cox H, Hewitt CE, Kang'ombe AR, Chuang LH, Jayakody S, Aplin JD, Semlyen A, Trehwela A, Watt I, Torgerson DJ. Yoga for chronic low back pain: a randomized trial. *Annals of internal medicine*. 2011 Nov 1;155(9):569–78.
12. Konrad K, Tatrai T, Hunka A, Vereckei E, Korondi I. Controlled trial of balneotherapy in treatment of low back pain. *Annals of the rheumatic diseases*. 1992 Jun 1;51(6):820–2.
13. Hurley DA, Minder PM, McDonough SM, Walsh DM, Moore AP, Baxter DG. Interferential therapy electrode placement technique in acute low back pain: a preliminary investigation. *Archives of physical medicine and rehabilitation*. 2001 Apr 1;82(4):485–93.
14. Ebadi S, Henschke N, Nakhostin Ansari N, Fallah E, van Tulder MW. Therapeutic ultrasound for chronic low-back pain. *Cochrane Database Syst Rev*. 2014 Mar 14;(3):CD009169.