

Yoga therapy for fibromyalgia syndrome: A case report

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ABSTRACT

Fibromyalgia is a rheumatologic syndrome leading to increased pain sensitivity, sleep disturbance, fatigue, stiffness, and tenderness of joints, muscles, and tendons due to dysregulation of neurophysiological functions. In the present case report, a 42-year-old, non-Indian, nonsmoking, nonalcoholic, female presented with complaints of severe difficulty in walking, joint pains, and generalized loss of balance of the body. The patient was an established case of fibromyalgia. The treatment plan for the patient included 9 months of yoga therapy. No concomitant allopathic medication was given during this whole treatment period. The patient was given special yoga postures to improve flexibility and movement of joints, daily 1 hour, 6 days/week in the morning, and evening for 9 months. The muscle fatigue, quality of life and sleep was assessed at the baseline, 3rd, 6th, and 9th month. The result of present case study demonstrated reduction in muscle fatigue and improvement in quality of life and sleep.

Keywords: Fatigue, fibromyalgia, pain, quality of life, sleep disturbance, yoga

Introduction

Fibromyalgia syndrome (FMS) is a rheumatologic syndrome leading to increased pain sensitivity, sleep disturbance, fatigue, stiffness and tenderness of joints, muscles, and tendons due to dysregulation of neurophysiological functions.^[1] Patients with FMS have increased levels of tenderness to palpation and additional symptoms such as disturbed sleep, stiffness, fatigue, and psychological distress.^[2] Nevertheless, FMS can be managed well by lifestyle modification and primary care.^[3] Antidepressants, anticonvulsants, or muscle relaxants are the most common line of treatment for FMS.^[4] Since, no causal treatment for FMS is available, interest in treatments aiming at primary care, and improvement in physical function has increased. Therefore, aerobic exercise and strengthening exercises are mostly administered as primary care for FMS patients.^[5] In fact, physical training has shown improved aerobic fitness and work capacity in FMS patients.^[6] Alternate therapies such as acupuncture is

available; although, extensive research is needed in this field.^[7] However, currently the treatment options are focused on relieving FMS symptoms and preventing flare-ups.

Therefore, a case study was planned in a patient suffering from FMS who presented with severe pain and disability. Yoga therapy showed positive results in minimizing the fibromyalgia symptoms individually in the past studies.^[8] However, most of the studies were conducted for a short duration. Thus, this study was planned in order to examine the effect of yoga therapy for a longer duration in treatment of FMS.

Case History

A family of four, comprising of husband, wife, and two daughters arrived at Kaivalyadhama Yoga Institute on 30.07.17. The husband had enrolled for 9 months of Diploma course at Kaivalyadhama Yoga Institute. As his wife was suffering from FMS, she decided to undergo yoga therapy at Kaivalyadhama Yoga Institute. She was 42 year old, non-Indian, nonsmoking, nonalcoholic, with the complaints of severe difficulty in walking, joint pains, and generalized loss of balance of the body since

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18 months. The patient could walk only using a walker or a stick. The patient also complained of nausea/vomiting, ankle pain, knee pain, poor vision, fatigue, and sleep disturbances. Patient was suffering from vertigo and was an established case of Hashimoto's thyroiditis and FMS. The patient was on B12 injections and thyroid medication at the time of arrival. The case was subsequently admitted to the Health Care Centre, Kaivalyadhama Yoga Institute on 30.07.17 for yoga therapy for 9 months. Written informed consent was taken from the patient for publication of this report.

Therapeutic focus

Looking at the patient's complaints, therapy was primarily focused on strengthening of the muscles and stress relief through yoga practices. No concomitant allopathic medication was given during this duration. The patient was given special yoga postures to improve the flexibility and movement of joints, 1 hour/day for 6 days/week in the morning and evening under the supervision of trained yoga therapist for 9 months. Timeline of the case and intervention details have been presented in Table 1.

Assessment

According to the symptoms of the patient, following standard tests were administered at the baseline, 3rd, 6th, and 9th months.

Hand steadiness

Hand steadiness was assessed by using an apparatus that consists of a metal plate with nine holes of decreasing size. Patient was instructed to avoid the contact of stylus with the sides of the

plates while performing the test. Total errors were counted on electronic counter.

Grip strength

Hand grip strength of both hands was assessed using hydraulic hand dynamometer (Saehan, Korea).

Fatigue

Finger tapping board was used to assess fatigue. The patient was asked to tap the metal bar as many times as possible for 30 seconds.

Back leg strength

A calibrated BLC dynamometer (Baseline, USA) was used to assess isometric muscle strength. The patient was asked to pull as hard as possible on the chain and straighten the legs.

Flexibility

Sit and reach test (Baseline, USA) was used to measure hamstring and lower back flexibility. With the palms facing downward, and the hands-on top of each other, the patient was asked to reach forward along the measuring line as far as possible. The score was recorded to the nearest centimeter as the distance reached by the hand.

Quality of life

Quality of life (QOL) was evaluated using WHO QOL- BREF questionnaire. The scale provides a measure of an individual's perception of quality of life for the four domains: (1)

Table 1: Timeline of the case

Relevant medical history and interventions			
Date	Summaries from initial and follow-up visits	Diagnostic testing	Interventions
30.07.2017	Severe difficulty in walking, joint pains, and generalized loss of balance of the body since 18 months.	Initial reports done on 30.05.2017: TFT, B12, Ca, RA, Anti-CCP, Vit. D	B12 injections, thyroid medication. After admission patient was advised to follow yogic diet and yoga practices.
30.07.2017	Could walk only using a walker or a stick. Complained of nausea/vomiting, ankle pain, knee pain, poor vision, fatigue and sleep disturbances. Hashimoto's thyroiditis and fibromyalgia syndrome.		Discontinued medication. Advised to take only thyroid medicines Yoga practice module under supervision of yoga expert.
14.09.2017	Follow-up	Hand steadiness, grip strength,	Shavasana (Corpse Pose); Ardhalasana (Half plow pose);
14.11.2017	Follow-up	fatigue, back leg strength, flexibility,	Makarkridasana (1-2) (Crocodile pose); Niralambasana
12.01.2018	Follow-up	quality of life, Musculoskeletal	(Neck stretching pose); Bhujangasana (Cobra pose);
13.03.2018	Follow-up	pain, Sleep rating	Ardha Shalabhasana (Half locust pose); Ardha Vakrasana
			(Half twisted pose); Parvatasana (Mountain Pose);
			Marjariasana (Cat Pose); Tadasana (Palm-tree Pose); Lateral
			Chakrasana (wheel pose); Kati Chakrasana (Spinal twist
			pose); Bramhamudra (Neck rotation); Anulom- vilom
			Pranayama (alternate nostril breathing); Omkar (3 rounds);
			Gayatri Mantra (3 rounds); Bhramari Pranayama (Humming
			bee breath) (10 rounds); Shavasana (Corpse Pose) (15-25 min.).
			All the asanas were maintained for 30 sec to 1 min.
	Final outcome	Patient showed an improvement in all the parameters and was able to walk without support and perform her day to day activities independently.	

Table 2: Results of muscle fitness, quality of life, and sleep at the baseline, 3rd, 6th, and 9th month of yoga therapy

Variable	Baseline	3 rd month	6 th month	9 th month
Muscular fitness				
Hand steadiness (errors)	113	85	81	54
Grip strength (right) (Kg)	27	32	33	35
Grip strength (left) (Kg)	29	31	32	34
Muscle fatigue (number)	100	260	322	699
Back leg strength (Kg)	82	137	142	153
Flexibility (Cm)	32	36	36	39
Psychological				
WHOQOL				
Physical health (Ts)	38	44	56	63
Psychological (Ts)	69	75	81	81
Social relationships (Ts)	69	81	81	75
Environment (Ts)	69	75	81	75
OMPQ (pts)	131	125	113	103
Sleep rating				
Q.1 Time taken to fall asleep (min)	30--90 min	30 min	5--60	5--30
Q.2 Total duration of sleep during night (h)	7--9 h	7--8	7--8	7--9
Q.3 Number of arousals during the night	2--10 time	1--4	2--4	2
Q.4 Reason for waking up	Pain/sick	Pain	Pain	Pain
Q.5 Feeling of being rested in the morning	No	Yes	Yes	Yes
Q.6 Sleeping in the day	Yes	Yes	Yes	Yes
Q.7 Day time sleep (min)	15 min--2 h	20 min	20--90	20 min

WHOQOL- World Health Organization quality of life; OMPQ- Orebro Musculoskeletal Pain Questionnaire

physical health (2) psychological health, (3) social relationships, and (4) environmental health.

Musculoskeletal pain

Orebro Musculoskeletal Pain Questionnaire was used to assess the degree of work disability due to musculoskeletal pain.

Sleep rating

Self-rated sleep quality was assessed using the Sleep Rating Questionnaire (SRQ) which consists of one open-ended (item 4) and six close-ended items.^[9]

Follow-up and outcomes

All the variables were assessed at the baseline, 3rd, 6th, and 9th month. Upon follow-up, patient reported improvement in physical fitness and quality of life. Pain, stiffness and fatigue were reduced and mobility was improved significantly. The results of musculoskeletal pain, grip strength, back leg strength, flexibility, hand steadiness, and sleep quality have been presented in Table 2.

Discussion

The result of present case study demonstrated reduction in muscle fatigue, pain, and improvement in quality of life and sleep. The patient showed improvement in nocturnal sleep, decrease in sleep onset, and reduced day time sleep. The patient was able to walk without support and able to perform her day to day activities without exhaustion.

FMS is characterized by widespread musculoskeletal pain and associated with multiple other symptoms which can be treated with primary care.^[5,10] The yoga therapy administered to the patient showed positive results in improving sleep quality, which may be due to increase in parasympathetic activity and decrease in sympathetic activation.^[11] In fact, benefits of yoga practices include increased muscular strength, flexibility, sense of well-being, decreased pain and improved sleep quality.^[12] The result of present case study is in accordance with previous research studies.

Yoga, being inexpensive and easy to incorporate in day to day life, is one of the most promising therapies for primary care of FMS.^[10,13]

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient(s) has given her consent for her images and other clinical information to be reported in the journal. The patient understands that her name and initials will not be published and due efforts will be made to conceal her identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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