

JUSTIFICATION LETTER

Dear Sir/Mam,

We would like to apply for the **Sun Pharma Science Scholar Award 2023**.

Fibromyalgia is an idiopathic chronic pain syndrome affecting 1-2% of the global population; predominantly females. Besides musculoskeletal pain at tender points; other symptoms include cognitive impairment, sleep disturbances, memory loss, anxiety and depression. Patients have to completely rely on medications, which temporarily reduce symptoms; as there is no permanent cure. Disease is controversial in itself as its pathophysiology is unknown and has several hypotheses for the same. Global burden increases day by day as it progresses throughout the patients' life and so there is a need of the hour to have an effective treatment strategy; whether it is therapeutic or lifestyle intervention. Yoga is a non-invasive lifestyle intervention which can be adopted in day-to-day life with no side effects at null cost.

In the present study entitled '*Effect of supervised medical yoga therapy on pain sensitivity, flexibility and range of motion of fibromyalgia patients*' conducted at Department of Physiology, AIIMS, New Delhi, we have explored the efficacy of regular and supervised medical yoga therapy (under supervision of medical experts) on the fibromyalgia pain and movement disability of the patients.

Abstract for the same has also been accepted for presentation in the 13th congress of the European Pain Federation EFIC on the 20-22 September 2023 held in Budapest, Hungary. The congress theme is 'Personalised Pain Management: The future is now', and it will be the largest international congress in 2023 focusing entirely on pain; all types of pain, their treatment and their management.

We think this study will strengthen the current research studies on chronic pain, specifically fibromyalgia.

Kindly consider our application for the award.

Aam!

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[Signature]



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Title: Effect of supervised medical yoga therapy on pain sensitivity, flexibility and range of motion of fibromyalgia patients

Keywords: Fibromyalgia, Supervised medical yoga therapy, Pain, Flexibility and Range of Motion

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ABSTRACT

Introduction: Fibromyalgia is an idiopathic chronic pain syndrome affecting 1-2% of the global population; predominantly females. Besides musculoskeletal pain at specified tender points; other symptoms include morning stiffness, cognitive impairment, sleep disturbances, memory loss, anxiety and depression. Patients have to completely rely on medications, which temporarily reduce symptoms; as there is no permanent cure. Yoga is a non-invasive and cost-effective lifestyle intervention which has been shown beneficial in various chronic pain conditions.

Aim of the study was to investigate the effect of supervised medical yoga therapy on pain sensitivity, flexibility and range of motion in fibromyalgia patients.

Methodology: We assessed pain catastrophization, pressure pain parameters, flexibility and range of motion in 22 fibromyalgia patients before and after 2 days of supervised medical yoga therapy.

Results: 22 fibromyalgia patients with mean VAS score 7.05 ± 0.8 , age 35.5 ± 14.5 years and weight 60.5 ± 8.5 Kg; completed the intervention. Pain was reduced to VAS score 3.3 ± 1.3 ($p < 0.05$) after intervention. Flexibility (cm) (Baseline: 2.1 ± 0.8 ; Post-yoga: 3.9 ± 1.3) and range of motion ($^{\circ}$) were significantly increased (Baseline: 16.7 ± 4.3 (Left), 17.4 ± 4.3 (Right); Post-yoga: 22.4 ± 3.5 (Left); 22.4 ± 3.6 (Right)). Pressure pain parameters in KPa were also found significantly increased for half of the parameters and half of the sites, post-intervention. Pain threshold at baseline: 173.6 ± 63.1 (Reference site), 145.3 ± 78.1 (Left shoulder), 145.9 ± 75.1 (Right shoulder) and 165.9 ± 62.5 (L5 area); post-yoga: 150.2 ± 43.7 (Reference site), 160.9 ± 70.0 (Left Shoulder), 160.1 ± 47.2 (Right Shoulder) and 196.1 ± 41.8 (L5 area). Pain tolerance at baseline: 251.1 ± 102.6 (Reference site), 232.1 ± 86.9 (Left Shoulder), 219.1 ± 94.2 (Right Shoulder) and 248.2 ± 86.5 (L5 area); post-yoga: 244.2 ± 64.8 (Reference site), 241.5 ± 76.4 (Left Shoulder), 238.2 ± 71.3 (Right Shoulder) and 297 ± 64.1 (L5 area). Moreover, we observed significant decrease in pain catastrophizing scale (PCS) score after the medical therapy.

Conclusion: Supervised medical yoga therapy can partially ameliorate pain and improve flexibility and range of motion of fibromyalgia patients.

Ethical Consideration: Ethical permission to conduct study was granted by the Institute Ethics Committee, All India Institute of Medical Sciences, New Delhi, India (Ref. No. IECPG-11/28.10.2021).