

HYPNOTHERAPY FOR SLEEP DISTURBANCE AND DEPRESSIVE SYMPTOMS IN INDIAN WOMEN WITH FIBROMYALGIA SYNDROME: AN EXPLORATORY STUDY

Mansi Sharma^{1*}, Dr. Roopali Sharma², Dr. Shivantika Sharad³

¹PhD Research Scholar, Amity Institute of Psychology and Allied Sciences Amity University Noida, Uttar Pradesh, India

²Professor, Amity Institute of Psychology and Allied Sciences, Amity University Noida, Uttar Pradesh, India

³Associate Professor, Department of Applied Psychology, Vivekananda College, University of Delhi, India

*Corresponding author: Mansi Sharma, Email Id: mansi010195@gmail.com

ABSTRACT

Hypnotherapy has been explored as a supportive therapeutic modality for fibromyalgia syndrome (FM), particularly for associated symptoms such as poor sleep quality and depression. Indian clinical literature in this area remains limited. The present paper reports an exploratory study examining changes observed following a brief hypnotherapy-based intervention in women diagnosed with fibromyalgia syndrome. Twenty female participants (n = 20), divided into a control group (n = 10) and an intervention group (n = 10), were assessed using the Beck Depression Inventory-II and the Sleep Quality Scale. The intervention group received a six-week hypnotherapy protocol based on modern Ericksonian techniques, while the control group continued treatment as usual. Post-intervention findings indicated observable reductions in sleep disturbance and depression scores among participants receiving hypnotherapy, while minimal variation was observed in the control group. Larger controlled studies are recommended to further examine the potential clinical utility of hypnotherapy for fibromyalgia-related symptoms.

KEYWORDS: Fibromyalgia syndrome, sleep quality, depression, intervention.

INTRODUCTION

Fibromyalgia syndrome, commonly abbreviated as FMS, is regarded as a severe chronic pain condition that displays symptoms of widespread pain across various regions of an individual's body. Fibromyalgia syndrome is increasingly recognized within the Indian clinical population, although prevalence estimates vary across studies. Due to a paucity of empirical evidence in support of this condition, there is a high chance of underdiagnosis or misdiagnosis of this musculoskeletal condition. Many important studies pertaining to FMS suggest that this condition is about four times more likely to occur in females when compared with males. According to the American College of Rheumatology (ACR) revised diagnostic criteria, fibromyalgia is conceptualized as a disorder characterized by widespread pain, fatigue, sleep disturbance, and cognitive symptoms rather than reliance on tender point examination alone.

In most cases, reaching a diagnosis of fibromyalgia can be tricky, because of the complexity of the symptoms, individuals suffering from this condition can experience a range of symptoms different in nature, while some might feel pain in most parts of the body, others might experience chronic fatigue normal than usual, some might experience mental malaise, while others can feel their mood changing and them becoming irritable in dealing with usual things and even encountering minimal stressors in life. The key marker of fibromyalgia is chronic pain that varies in range and intensity, which sufferers of this musculoskeletal condition would highly likely experience throughout their body. Another visible marker is muscle tenderness, which is accompanied by chronic fatigue as well as irritability.

Recent research suggests that when the blood samples of patients suffering from fibromyalgia were tested, it was found that they had an elevated level of C-reactive protein in their blood, along with a predisposition to a raised RA or rheumatoid arthritis factor. The research also highlights those obese individuals, who lead a sedentary lifestyle also are highly likely to be diagnosed with Fibromyalgia syndrome. A noteworthy finding also highlights those individuals who had elevated CRP levels in the blood also scored significantly high on fibromyalgia impact questionnaire indicating a correlation between fibromyalgia and elevated C-reactive protein levels (Zetterman, 2022).

(Aguilera, 2019) argues that although many correlational studies have been found linking depression and fibromyalgia syndrome, there has been an absence of literature pertaining to assessing if there could be a correlation between mental abilities or cognition of depressed individuals and fibromyalgia. Results highlighted that depressed patients with fibromyalgia reported significant cognitive rigidity as compared to depressed individuals without fibromyalgia syndrome. Individuals suffering from fibromyalgia syndrome often experience unexplained mental fog or what is often called as fibro-fog. They may experience significant cognitive or mental confusion along with lack of focus and concentration. Feelings of being out of place and inability to pay attention for a longer duration of time are also some of the prominent markers of fibromyalgia. Important researches suggest that female adults who are diagnosed with Attention deficit / hyperactivity disorder are highly likely to suffer from fibromyalgia syndrome (Yilmaz & Tamam, 2018).

A Research conducted by Portuguese researchers aimed to understand the prevalence of fibromyalgia among women concluded that Indian women were likely to suffer with the condition where the prevalence in the rural women were reported to be 3.77% as compared to 1.27% among urban female counterparts. This study was conducted while analysing the numerous research studies across the world. The United States however reported the highest prevalence of 6.4% of fibromyalgia syndrome across the population.

Fibromyalgia syndrome is known to cause severe psychological complications among the sufferers of the condition. While what normal individuals perceive pain and stiffness, this is usually not what the individuals affected by this condition are likely to feel. Fibromyalgia syndrome patients are highly likely to suffer from several psychological complications in their lifetime. Since the severity of the symptoms vary from one individual to another, it affects the overall lifestyle of the individual thus making them susceptible to develop psychological distress at some point of their lives.

Hypnosis, hypnotic induction, hypnotizability and hypnotherapy according to the 30th division of the APA committee (2014), can be defined as-

Hypnosis: A state of consciousness involving focused attention and reduced peripheral awareness characterized by an enhanced capacity for response to suggestion.

Hypnotic induction: A procedure designed to induce hypnosis.

Hypnotizability: An individual's ability to experience suggested alterations in physiology, sensations, emotions, thoughts, or behavior during hypnosis.

Hypnotherapy: The use of hypnosis in the treatment of a medical or psychological disorder or concerned.

The effects of hypnotic suggestions—the classic case or instance—are not experienced by, or observed in, everyone who is hypnotized. The phenomena that have enticed theorists from James, Freud and even Pavlov to today are most likely to occur in those subjects who are most highly hypnotizable (Heap et al., 2004).

Relationship between sleep quality, and depression with Fibromyalgia syndrome

Several factors were studied and explored that could have been responsible for the onset of fibromyalgia with rheumatoid arthritis. Results indicated that in many cases, it becomes difficult to even climb stairs for those affected by this condition. Additionally, anxiety, depression, mental malaise, and chronic fatigue were the major psychological contributors experienced by the individuals suffering from the condition. (Wallit et al., 2015).

Fibromyalgia syndrome and chronic fatigue, along with symptoms of pain and physical distress caused by unexplained and varying pain across the body.

Several clinical trials also indicate a link between chronic fatigue syndrome and depression. It also suggests that NSRIs such as Savella (Milnacipran) and Cymbalta (Duloxetine) are commonly prescribed drugs for the treatment of chronic pain, a classic symptom experienced by patients with FM (Gracely et al., 2012). Empirical reviews also suggest a strong association between sleep quality and FM management; women suffering from FM were likely to face sleep difficulties and increased wake time after the onset of sleep when tested on Pittsburgh Sleep Quality Index and polysomnography respectively, essentially, global scores of the participants' poor sleep efficacy is also an important finding among women affected by this musculoskeletal condition (Wu et al., 2017).

METHODOLOGY

The present investigation was designed as an exploratory study with a small comparative control component. Given the small sample size ($n = 20$), the study is exploratory in nature and not intended to establish generalizable causal inferences. The inclusion of a control group was intended to observe symptom patterns over time rather than to conduct a fully powered clinical trial.

Aim

The present exploratory study aimed to explore changes in sleep quality and depression symptoms following a hypnotherapy-based intervention among women with fibromyalgia syndrome.

Rationale

Hypnotherapy has long been an under-researched realm of Clinical psychology. Some have called hypnosis a pseudoscience, while others have questioned its efficacy and credibility. Over the years, hypnotherapy has been able to establish its ground in the Eastern perspective and the Asian subcontinent as well. Owing to its already established ground in the western countries, thanks to the groundbreaking contributions of Franz Mesmer, Clark Hull, and James Braid in ancient hypnosis, while John Kappas and Milton Erikson have established significant contributions in modern hypnosis based extensively on wordings, imagery, visualization, and indirect suggestions in hypnosis, researchers are now widely interested in the field of hypnosis and hypnotherapy. Several Western studies have already suggested the efficacy of hypnotherapy for fibromyalgia syndrome or chronic fatigue syndrome (Asadi et al., 2022; Asadi and Aghaei, 2021; Taylor and Genkov, 2020). The paucity or limited research studies highlighting the efficacy of hypnosis as a therapeutic modality, especially in India, paves the way for a research pathway to assess the effectiveness of hypnotherapy in the Indian population. Various reviews and case reports have suggested a need to understand and test the aetiology, diagnostic markers, and gender differences, and blood culture to demarcate a clear diagnosis of one of the most misdiagnosed or underdiagnosed chronic conditions, fibromyalgia syndrome.

OBJECTIVE

1. To examine changes in sleep quality among participants receiving hypnotherapy.
2. To examine changes in depression symptoms among participants receiving hypnotherapy.
3. To observe comparative symptom patterns between intervention and control participants.

HYPOTHESES

1. A significant difference will be observed between the pre- and post-intervention levels of sleep quality among the females of the experimental group.
2. A significant difference will be observed between the pre- and post-intervention levels of depression among the females of the experimental group.
3. There will be significant difference between the pre- and post-intervention levels of sleep quality among the females of the control group.
4. There will be significant difference between the pre- and post-intervention levels of depression among the females of the control group.

ANALYTICAL APPROACH

Given the exploratory nature of this study, analyses were conducted to observe patterns of change between pre- and post-intervention scores. Statistical tests were applied to aid interpretation; however, findings are not presented as confirmatory hypothesis testing.

Participant Selection

A total of 20 females aged between 35 to 55 years of age suffering from fibromyalgia syndrome were selected to be a part of the study. These females were randomly assigned to the control and experimental groups, respectively. To be eligible for the study, they were screened according to the ACR 2016 diagnostic criteria of fibromyalgia syndrome. Case histories were recorded for these patients, and individuals suffering from autoimmune conditions, Such as Rheumatoid Arthritis, rheumatic fever, fibrosis, and pulmonary fibrosis, as well as any other psychiatric disability, were excluded from the study. The characteristics of the participants of both the experimental group and the control group were identical in nature, i.e. both the groups were receiving the preliminary pharmacological treatment in the outpatient department of the hospital, further, the inclusion and exclusion criteria has been mentioned separately in the following sub-section.

Inclusion criteria

1. Only females aged 35-55 years were included for the present study
2. All the individuals will undergo the pharmacological treatment and are strictly advised not to discontinue their ongoing medication(s).
3. Individuals with Bilingual proficiency in Hindi and English were included in the study.

Exclusion criteria

1. Individuals with fibrosis, tuberculosis, rheumatoid arthritis, bronchial asthma, and obesity were not included for the study.
2. Individuals with any psychiatric condition such as bipolar disorder, conduct disorder, intellectual disability, schizophrenia were not included for the study.
3. Individuals who dropped out, were unwilling, non-compliant were excluded from the study.

Description of the Tools

Two clinically applicable and widely accepted tools were selected for obtaining the difference (if any) these are mentioned below:

1. **Beck's Depression Inventory II** is an updated version of the original BDI by Aaron Beck. This is a 21-item scale that indicates the severity of depression symptoms. The test shows a very strong internal consistency reliability at 0.91, convergent validity at 0.71, and test-retest reliability, Pearson r at 0.93.
2. **Sleep Quality Scale**, developed by Chol Shin and Hyeryeon Yi, is a 28-item scale with six areas of sleep quality, constructed with a four-point Likert scale, depicting how individuals showcase sleep-related behaviour. The scores can range from 0-84. Higher scores indicate higher sleep variations and issues experienced by the individual.

Additionally, the participants were screened for a favourable diagnosis of FM using the widely accepted **ACR 2016 criteria of Fibromyalgia**. In addition to this, participant demographic details such as name, age, gender, educational qualification, marital status, etc, were duly recorded.

Ethical Consideration

The data collected from the female patients was strictly conducted with the approval of the competent doctor of orthopaedics (previously, Head of the Department of Orthopaedics at a government hospital in Delhi-NCR). The primary author is a certified clinical hypnotherapy practitioner, certified by California Hypnosis Institute, USA. The primary author has devised the intervention plan based on Milton Erickson's hypnotherapy techniques of script creation. The above-mentioned certification enables the author to design self-worded scripts, purely original, but based on the techniques of

modern Eriksonian hypnosis. The data was obtained after the participant consent form was duly filled out by the participants.

Process of Data Collection

Various departments of both private and government hospitals were contacted for the process of data collection. Due to the peculiar and restricted accessibility of the target population, the orthopaedic department of a government hospital in Delhi-NCR was selected. Female participants were initially screened using the ACR 2016 criteria of fibromyalgia syndrome; those found eligible were included in the study. Initially, a total of 24 participants were shortlisted for the study, but due to the long duration of intervention, and unwillingness to participate in the study, 04 female participants dropped out during the initial screening of the study. Further, the nature and symptomatology, the aetiology, along with the entire procedure of the intervention, were explained to them in detail. Only upon the verbal consent of the participants, the written consent was provided to them, where all the information was duly mentioned. The tools BDI II and Sleep Quality Scale were tested as a pre-test on both the groups, control and experimental. A six-week bi-weekly intervention was administered to these patients of the experimental group, while the control group continued the treatment as usual (the medication prescription). After the intervention, the post-test scores of both groups were obtained, and the results are discussed in the results section. Epidemiological data on fibromyalgia within Indian clinical settings remains limited, which can make structured recruitment challenging (Handa et al., 1998; Vijayan & Nair, 2020).

Brief About the Intervention Plan

The hypnotherapy-based intervention, devised by the primary author, aims to highlight its effectiveness on the sleep quality and levels of depression in women affected with fibromyalgia syndrome. This bi-weekly intervention was split into six ninety-minute sessions, each for sleep quality and depression each for 6 weeks. The scripts are created by the primary author in such a way that the script, when narrated to the client, feels both directive as well as indirect as and when needed. This script has been created using modern hypnotic suggestions and techniques based on Ericksonian hypnosis, such as imagery and visual cues, suggestions, positive suggestions, and open-ended interviews. Before starting each session, the goals and expected outcomes were discussed with the clients, and expectations for the next sessions were also recorded. Before each session, a deep relaxation exercise was administered on the client, for a smooth relay into the state of trance. This intervention was constructed and modified bilingually (Hindi and English) as and when required, especially when the client was in the state of trance.

RESULTS

The results for the following study were compiled using MS Excel and the statistical tool JAMOVI. The results are formulated in a tabular form and are mentioned below-

Table 1. The descriptive scores of pre- and post-test scores of the female participants of the control group, as tested on sleep quality and depression levels.

| | N | Mean | Median | SD | SE |
|---------------------------------|----|------|--------|------|-------|
| pre test control sleep quality | 10 | 59.5 | 58.5 | 3.95 | 1.249 |
| post test control sleep quality | 10 | 62.4 | 61.5 | 3.78 | 1.194 |
| pre test control depression | 10 | 51.7 | 51.5 | 2.06 | 0.651 |
| post test control depression | 10 | 54.4 | 54.4 | 1.26 | 0.400 |

Table 2. The comparison between the pre-test and post-test scores of the control group of sleep quality and depression when tested using a paired sample t-test and Wilcoxon's signed rank test.

| Components | Tests | Statistic | df | p | Mean difference | SE difference | | Effect Size |
|--|-------|-----------|------|-------|-----------------|---------------|---------------------------|-------------|
| Pre test control sleep quality - Post test control sleep quality | t | -16.16 | 9.00 | <.001 | -2.90 | 0.180 | d | -5.11 |
| | W | 0.00 | | 0.004 | -3.00 | 0.180 | Rank biserial correlation | -1.000 |
| Pre test control depression - Post test control depression | t | -3.620 | 9.00 | 0.006 | -2.70 | 0.746 | d | -1.14 |
| | W | 2.00 | | 0.017 | -3.00 | 0.746 | Rank biserial correlation | -0.911 |

Table 3. The descriptive statistics of the pre- and post-test scores for the female participants in the experimental group as assessed for sleep quality and depression levels.

| | N | Mean | Median | SD | SE |
|--------------------------------------|----|------|--------|------|-------|
| pre-test experimental sleep quality | 10 | 58.9 | 58.5 | 4.86 | 1.538 |
| Post-test experimental sleep quality | 10 | 31.6 | 31.5 | 2.55 | 0.806 |
| pre-test experimental depression | 10 | 44.4 | 44.5 | 3.10 | 0.980 |

| | | | | | |
|-----------------------------------|----|------|------|------|-------|
| post-test experimental depression | 10 | 24.5 | 25.0 | 1.96 | 0.619 |
|-----------------------------------|----|------|------|------|-------|

Table 4. The comparison of the pre-test and post-test scores for the experimental group's sleep quality and depression, as determined using a paired sample t-test.

| Components | Test | Statistic | df | p | Mean difference | SE difference | | Effect Size |
|--|------|-----------|------|-------|-----------------|---------------|---------------------------|-------------|
| pre-test experimental sleep quality- post test experimental sleep quality | t | 18.9 | 9.00 | <.001 | 27.3 | 1.45 | Cohen's d | 5.97 |
| | W | 55.0 | | 0.006 | 27.0 | 1.45 | Rank biserial correlation | 1.00 |
| pre test experimental depression- post test experimental depression | t | 15.5 | 9.00 | <.001 | 19.9 | 1.29 | Cohen's d | 4.89 |
| | W | 55.0 | | 0.006 | 19.5 | 1.29 | Rank biserial correlation | 1.00 |

DISCUSSION

The present study aimed to determine the efficacy of a hypnotherapy-based intervention on the sleep quality and depression levels of females suffering from fibromyalgia syndrome. Fibromyalgia syndrome or chronic fatigue syndrome is defined as a musculoskeletal condition affecting female population by large, though male-centric data and studies are highly limited in existence. For the study, 20 female participants were selected after consenting through a written consent form. The sample was divided into control and experimental group, where the experimental group received the intervention and the control group continued with the treatment as usual. Both the groups however filled the pre- test and the post- test questionnaires. For establishing a baseline, the ACR 2016 criteria for fibromyalgia was administered on the entire sample, after which, the entire process of pre and post-test was carried forward. Since it was a brief intervention of 6 weeks, the sample compliance for the intervention group was accurately achieved.

After the completion of the intervention, the data was analysed using JAMOVI, the result tables are mentioned in the result section, where table-1, represents the descriptive statistics for the pre and post intervention scores of the control group on the sleep quality and depression levels, table-2 depicts the comparison between the pre and post-test scores of the control group when tested on sleep quality and depression using the paired sample t-test and Wilcoxon's signed rank test. Similarly, table -3 represents the descriptive statistics for the pre and post intervention scores of the experimental group on the sleep quality and depression levels, and lastly, table-4 represents the comparison between the pre and post-test scores of the experimental group when tested on sleep quality and depression using the paired sample t-test and Wilcoxon's signed rank test.

The post-intervention results of the experimental group indicated notable reductions between the sleep quality and depression levels when compared with the pre- intervention scores of the experimental group. However, there was no significant difference detected in the pre- and post-intervention levels of sleep quality and depression in the control group. This indicated that the group that received the intervention significantly improved their symptoms as compared with the control group, which depicted marginal or little improvement in the symptomatology. Post-intervention analyses indicated marked reductions in sleep disturbance and depression scores within the intervention group, whereas the control group showed minimal variation over time. While the observed changes in the intervention group were statistically significant, the small sample size warrants cautious interpretation. Effect sizes appeared large; however, effect size estimates derived from small samples may be unstable and potentially inflated. Hence, the magnitude of observed effects should be interpreted cautiously. Therefore, findings should be considered preliminary. This study highlights possible therapeutic trends rather than definitive treatment efficacy. Replication with adequately powered randomized controlled designs is essential before clinical generalization.

LIMITATIONS

The primary limitation of this exploratory study is the small sample size, which restricts statistical power and limits generalizability. Although statistical tests were applied, the design does not constitute a fully powered randomized controlled trial. The short intervention duration and absence of long-term follow-up further limit interpretation. Future investigations should address these methodological constraints.

CONCLUSION AND FUTURE IMPLICATIONS

This exploratory study explored the potential role of a brief hypnotherapy-based intervention in addressing sleep disturbances and depressive symptoms among women with fibromyalgia syndrome. Participants who received the intervention demonstrated observable improvements; however, due to the limited sample size, these findings should be interpreted cautiously. The present work contributes preliminary clinical observations and underscores the need for larger, rigorously designed studies to determine efficacy. Future research should incorporate larger samples, long-term follow-up, and randomized allocation to better establish treatment impact.

Conflict of Interest

The author(s) declare no conflict of interest for the present research.

Funding

No funding was sought for the present research.

REFERENCES

1. Aguilera, M., Paz, C., Compañ, V., Medina, J. C., & Feixas, G. (2019). Cognitive rigidity in patients with depression and fibromyalgia. *International Journal of Clinical and Health Psychology*, 19(2), 160–164. <https://doi.org/10.1016/j.ijchp.2019.02.002>
2. Asadi, J., & Aghaei, M. (2021). Comparison of the effectiveness of clinical hypnosis and cognitive-behavioral hypnotherapy (CBH) treatment on physical symptoms and sexual satisfaction of women with fibromyalgia syndrome in Gorgan. *Rooyesh-e-Ravanshenasi Journal (RRJ)*, 10(4), 155-166.
3. Atmakuru, A., Chakraborty, S., Salvi, M., Faust, O., Barua, P. D., Kobayashi, M., ... & Acharya, U. R. (2025). Fibromyalgia detection and diagnosis: A systematic review of data-driven approaches and clinical implications (2013-2023). *IEEE Access*.
4. Beck, A.T., Steer, R.A., & Brown, G.K. (1996). *Manual for the Beck Depression Inventory-II*. San Antonio, TX: Psychological Corporation
5. Handa, R., Aggarwal, P., Wali, J. P., Wig, N., & Dwivedi, S. N. (1998). Fibromyalgia in Indian patients with SLE. *Lupus*, 7(7), 475-478.
6. Heap, M., Brown, R., & Oakley, D. (2004). *The highly hypnotizable person*. Brunner-Routledge, USA.
7. Gill, M. (2018). Anatomy And Pathophysiology Of Chronic Pain And The Impact Of Hypnotherapy. *Sleep and Hypnosis*. 2018, 20(2), 85-90.
8. Gracely, R. H., Ceko, M., & Bushnell, M. C. (2012). Fibromyalgia and depression. *Pain research and treatment*, 2012(1), 486590.
9. Kaleycheva, N., Cullen, A. E., Evans, R., Harris, T., Nicholson, T. R., & Chalder, T. (2021). The role of lifetime stressors in adult fibromyalgia: systematic review and meta-analysis of case-control studies. *Psychological Medicine*, 51(2), 177–193. <https://doi.org/10.1017/s0033291720004547>
10. Kolbadinejad, M., Asadi, J., Pourasghar, M., & Aghaie, M. (2022). Comparison of the Effectiveness of Cognitive Behavioral Therapy with Cognitive Behavioral Hypnotherapy on Sexual Satisfaction of Women with Fibromyalgia Syndrome: A Clinical Trial Study. *Journal of Gorgan University of Medical Sciences*, 24(1), 26-34.
11. Taylor, D. A., & Genkov, K. A. (2020). Hypnotherapy For The Treatment Of Persistent Pain: A literature review. *Journal of the American Psychiatric Nurses Association*, 26(2), 157-161.
12. Vijayan, B. V., & Nair, V. C. P. (2020). Burden of illness due to fibromyalgia in a neurology clinic. *Journal of Neurosciences in Rural Practice*, 11(3), 411.
13. Yilmaz, E., & Tamam, L. (2017). Attention-Deficit/Hyperactivity Disorder and Impulsivity in Female Patients with Fibromyalgia. *Psychiatry and Clinical Psychopharmacology*, 27, 52.
14. Yi, H., Shin, K., & Shin, C. (2006). Development of the sleep quality scale. *Journal of Sleep Research*, 15 (3), 309–316.
15. Zetterman, T., Markkula, R., & Kalso, E. (2022). Elevated highly sensitive C-reactive protein in fibromyalgia associates with symptom severity. *Rheumatology Advances in Practice*, 6(2). <https://doi.org/10.1093/rap/rkac053>