

Effect of yoga as add-on therapy in schizophrenia patients

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Abstract

Background: Yoga has proven value in treatment of various psychiatric disorders like Anxiety, Depression and Obsessive compulsive disorder. But its role in Schizophrenia was not established thoroughly. **Aim:** Present study was aimed to study the role of Yoga in Schizophrenia. **Materials and Methods:** 65 Schizophrenic patients, diagnosed according to ICD-10 criterion were recruited and randomized in to two groups. Group-A patients received only pharmacotherapy and Group-B patients received pharmacotherapy and Yoga. Response was measured and compared by using **Positive and Negative Syndrome Scale (PANSS)** at initiation, randomization and completion of study. **Results:** Group-B patients, who received pharmacotherapy and Yoga, had shown significant improvement in negative symptoms and general psychopathology subscales of PANSS. **Conclusions:** Adding Yoga therapy to pharmacotherapy in Schizophrenia patients yields better outcome.

Keywords: PANSS, Pharmacotherapy, Schizophrenia, Yoga.

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Received Date: 08/01/2015 Revised Date: 12/10/2015 Accepted Date: 02/10/2016

Access this article online	
Quick Response Code:	Website: www.medpulse.in
	DOI: ---

INTRODUCTION

Schizophrenia is a chronic and debilitating disorder characterized by a heterogeneous group of symptoms, including positive symptoms (delusions, hallucinations, disorganised thought), negative symptoms (flattened affect, stereotyped thinking, difficulty in abstract thinking) and multifaceted cognitive deficits, most prominently in the areas of attention, memory and executive functioning.¹ In a study commissioned by the World Health Organization and the World Bank, Schizophrenia ranked as the ninth leading cause of disability in people aged 15 – 44 years worldwide and fourth in developed countries.² Active psychosis was

ranked the third most disabling condition, higher than paraplegia and blindness, in the general population.³ Yoga appears to have significant effects in positive mental health. It has been found to be effective in the management of substance use, anxiety disorders, depression, OCD and stress. It has been proved to have significant positive effects on motor and cognitive functioning. Yoga has effects as a treatment for anxiety disorders and beneficial in both the short and long-term.⁴ Significant reduction in pain perception was recorded on a visual analogue scale in patients with severe tension headache who practiced yogic meditation.⁵ A significant decrease in self-reported symptoms of depression and anxiety was observed with one hour of Yoga classes each week for consecutive weeks.⁶ A very grounding and centring yoga sadhana could channel the patients with schizophrenia towards a calmer and more controlled mood. Our current study was aimed at to examine effect of yoga when added to pharmacotherapy in schizophrenia patients.

MATERIALS AND METHODS

Patients admitted in Government Hospital for Mental Care, Visakhapatnam were randomly selected for the

study. Inclusion and exclusion criteria were applied and a clinical diagnosis was made according to ICD-10.

Positive and negative syndrome scale (PANSS)

is a 30-item, 7-point rating instrument. In the 30 items, seven were grouped to form a positive scale, measuring symptoms that are superadded to a normal mental status, and seven items constitute negative scale, assessing features absent from a normal mental status, remaining 16 items constitute general psychopathology scale that gauges the overall severity of schizophrenic disorder by summation of remaining 16 items.

Inclusion Criteria

1. Patients fulfilling criteria for Schizophrenia as per ICD-10.
2. Patients between 18-55 years of age.
3. Patients of either sex are eligible for study.
4. Patients or attendants able to give informed consent.
5. Patients with PANSS between 80-120 and who were cooperative for yoga therapy were included.

Exclusion Criteria

1. Patient with primary diagnosis of schizophrenia associated with any co-morbid psychiatric disorder like mood disorder, anxiety disorder etc.,
2. Patients with any chronic physical illness like recent myocardial infarction, fractures, organic brain disorder, or substance dependence.
3. Mental retardation.

Procedure

On the day of admission PANSS was applied to the patients. Routine pharmacological treatment was started after necessary investigations. After two weeks of treatment, stabilized patients were recruited into study. Patients were administered PANSS after two weeks of treatment and randomized into two groups. Group-A patients received only pharmacotherapy and Group-B patients received pharmacotherapy and Yoga, in the form of Suryanamaskaras and Pranayama for thirty minutes per day for a period of one month. At the end of one month patients of both groups were measured with PANSS and the results were compared with base line scores.

RESULTS

The changes in different subscales of PANSS in Only Pharmacotherapy group prior to randomization were shown in table 1 and the changes in different subscales of PANSS in yoga plus Pharmacotherapy group prior to randomization were shown in table 2. Results have shown that there was statistically significant reduction in scores of different subscales of PANSS.

Table 1: Comparison of sub scales of PANSS prior to randomization in Group-A (n=31)

Domain	Mean	SD	t test
Total Positive 1 [#]	19.55	1.261	2.444*
Total Positive 2 ^{\$}	14.77	1.765	
Total Negative 1	21.68	2.242	2.341*
Total Negative 2	17.71	1.774	
General Psychopathology 1	45.19	2.056	2.684*
General Psychopathology 2	34.19	2.857	
PANSS1	86.74	2.886	2.495*
PANSS2	66.65	3.656	

* P<0.05, # On the day of admission, \$ On the day of randomization.

Table 2: Comparison of sub scales of panss scale prior to randomization in Group-B (n=34)

Domain	Mean	SD	t test
Total Positive 1 [#]	19.26	1.286	2.121*
Total Positive 2 ^{\$}	14.35	1.454	
Total Negative 1	22.26	2.165	2.011*
Total Negative 2	17.59	1.617	
General Psychopathology 1	43.41	2.105	2.699*
General Psychopathology 2	32.26	2.526	
PANSS1	84.97	3.555	2.388*
PANSS2	63.97	3.020	

* P<0.05, # On the day of admission, \$ On the day of randomization

The changes in different subscales of PANSS in Only Pharmacotherapy post randomization were shown table 3 and the changes in different subscales of PANSS in yoga plus Pharmacotherapy post randomization, were shown in table 4. Results show more improvement of negative symptoms, general psychopathology and total pans score in yoga plus pharmacotherapy group, but the difference in positive symptoms is not much significant when compared to only pharmacotherapy group.

Table 3: Comparison of sub scales of PANSS post randomization in Group-A (n=31)

Domain	Mean	SD	t test
Total Positive 2 ^{\$}	14.77	1.765	2.548*
Total Positive 3 [^]	11.16	.860	
Total Negative 2	17.71	1.774	2.612*
Total Negative 3	14.58	1.928	
General Psychopathology 2	34.19	2.857	2.711*
General Psychopathology 3	32.52	2.064	
PANSS2	66.65	3.656	2.621*
PANSS3	59.26	3.396	

*P<0.05, \$ On the day of randomization ^ On the day of completion

Table 4: Comparison of sub scales of PANSS post randomization in Group-B (n=34)

Domain	Mean	SD	t test
Total Positive 2 [§]	14.35	1.454	2.751*
Total Positive 3 [^]	10.71	1.219	
Total Negative 2	17.59	1.617	5.299**
Total Negative 3	13.12	2.114	
General Psychopathology 2	32.26	2.526	5.323**
General Psychopathology 3	26.24	4.068	
PANSS2	63.97	3.020	4.531**
PANSS3	50.65	5.521	

* P<0.05, **P<0.01, § On the day of randomization, ^ On the day of completion

DISCUSSION

Yoga therapy and PANSS

Mean total score of PANSS of only pharmacotherapy group at initiation of treatment was 66.7, and after four weeks of ongoing pharmacotherapy, the score was 59.3. In yoga plus pharmacotherapy group mean score at initiation of treatment is 64.0, and at end of four weeks of yoga therapy, was 50.7. In yoga add-on group the total PANSS have come down significantly. In pharmacotherapy only group the mean values have come down with p value <0.05 but yoga as an add-on has a definite advantage as the change in total PANSS was significant with p value < 0.01. These findings were supported by a study done by Duraiswamy G *et al.*⁷

Yoga therapy and positive symptoms

In our study both the groups have shown improvement in positive symptoms significantly with p value <0.05. Yoga plus pharmacotherapy group in addition, have shown more reduction in the baseline mean values of positive subscale when compared to only pharmacotherapy group. Earlier study by Duraiswamy G *et al.*,⁷ did not find any improvement in positive symptoms after yoga therapy, however subsequent studies by Visceglia, *et al.*,⁸ have found improvement in positive symptoms after yoga therapy as also evidenced in this study.

Yoga therapy and negative symptoms

Improvement in negative symptoms has been consistently reported with yoga therapy in previous study by Behere RV *et al.*⁹ In our study both the groups showed significant improvement in negative symptoms, however the degree of improvement was greater in the yoga plus pharmacotherapy group as the p value in yoga therapy group is 0.01 when compared to only pharmacotherapy group with p value <0.05. These findings were consistent with the above mentioned study

Yoga therapy and general psychopathology

This subscale of PANSS has shown a better reduction in yoga plus pharmacotherapy group when compared to only pharmacotherapy group given by the p values <0.01 and <0.05 respectively in both groups. Studies done by

Vancampfort D *et al.*,^[10] and De Hert M *et al.*,¹¹ notified similar reduction in the general psychopathology scores in the group of patients where yoga has been an add-on treatment to ongoing pharmacotherapy.

Limitations of the study

1. Current study was based exclusively on hospital based inpatient sample and therefore, may not be the representative sample of patients in community.
2. There was no standardized protocol of pharmacotherapy prior to and after randomization.

CONCLUSIONS

Patients who received yoga plus pharmacotherapy reported statistically significant improvement in negative symptoms and general psychopathology sub scales of PANSS. There was no statistically significant difference in the improvement of positive symptoms in the patients of both the groups.

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Source of Support: None Declared
Conflict of Interest: None Declared