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A COMPARATIVE STUDY TO ASSESS THE EFFICACY OF INTERPERSONAL AND SOCIAL RHYTHM THERAPY (IPSRT) IN BIPOLAR AFFECTIVE DISORDER PATIENTS

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ABSTRACT

Background: Bipolar disorder is one of the most burdensome mental disorder which is associated with high levels of morbidity and disability in the person who often exhibits frequent recurrences which is attributed to factors such as non-compliance of drug, stressful life events, and disruptions in the social rhythm. Along with pharmacotherapy, effective treatment of bipolar affective disorder (BPAD) should center on principles of social rhythm stabilization, stabilizing the interpersonal relationship, knowing and working on the stressors of the patient. IPSRT acts on the social rhythm as well as the inter-relationship of a person and it can act as a supportive measure in the patients of BPAD.

Aim and objective: This study aimed to evaluate the efficacy of IPSRT in bipolar affective disorder patients.

Material and Methods: A comparative prospective study was carried in the Department of Psychiatry at Rama Medical College Hospital & Research Centre, Kanpur on 44 BPAD patients which was divided into two groups, experimental (IPSRT + pharmacotherapy) and control group (Pharmacotherapy alone). In the IPSRT sessions, we have focused on the patient's disruptions in social routines, interpersonal problems, and social role transitions which had been associated with affective episodes. The efficacy of IPSRT was measured by comparison of mean scores at baseline & then at 3-month using the Hamilton Depression Rating Scale (HAM-D), Young Mania Rating Scale (YMRS), and Global Assessment of functioning (GAF).

Results and Discussion: There was a considerable improvement in the HAMD-17, YMRS, and GAF scores in both the experimental and the control group, however on comparison at baseline and then at 3 months p-value of HAMD-17(0.001), YMRS(<0.0001) and GAF(0.0001) in experimental group

was more significant as compared to that of HAMD-17(0.0063), YMRS(0.0012) and GAF(0.004) of the control group. In those patients who received IPSRT, their social and circadian rhythm were regularized as well as their interpersonal relationships improved.
Conclusion: IPSRT may serve as an add-on therapy along with pharmacotherapy which can help the patients in reduction of psychopathology. It also works on interpersonal and social relationship impairment in Bipolar patients.

Keywords: Bipolar disorder, IPSRT, Efficacy, Comparison

Introduction

Bipolar disorder is highly burdensome mental disorder that is linked to significant levels of morbidity and disability in individuals. Its lifetime prevalence is around 1%[1].Approximately 50 to 60% of individuals with bipolar disorder experience the onset of their illness before 19 years of age[2,3].
Patients having bipolar disorder exhibit dysfunction in their social as well as circadian rhythm. Social rhythmicity refers to the regularity with which a person engages in social and lifestyle activities such as going to bed, timing of meals, and social interactions.
In humans, the Circadian rhythm regulates normal metabolic and endocrine processes such as sleep/wake patterns, core body temperature, and hormone release[4].These rhythms can be endogenously determined and self-sustaining, but are also influenced and synchronized by external cues such as light, temperature, or social interactions referred to as "zeitgeber's"[5] .According to the social zeitgeber theory, alterations in mood arise as a consequence of life events that disturb social zeitgebers which consequently, derail social and biological circadian rhythms.
Treating bipolar disorder presents numerous challenges as we must not only address the acute episodes in bipolar patients but also strive to prevent symptomatic relapses and ensure full recovery between episodes in terms of both symptom remission and restoration of functioning.
In addition to pharmacotherapy, the management of bipolar disorder should center on principles of stabilizing social rhythm, stabilizing interpersonal relationships, and addressing the patient's stressors. Various therapies have been developed over the years for bipolar patients like behavioural therapy, cognitive therapy, family-focused therapy, interpersonal and social rhythm therapy (IPSRT), etc.
IPSRT is a modular, manual-based intervention, specifically designed for BPAD patients by Frank et al.[6] The primary goal of IPSRT therapy is to prevent new episodes of illness or at least prolong the duration between episodes. Through IPSRT, the patient learns skills focused not only on enhancing the regularity of daily routines and normalizing the sleep-wake cycles but also on improving the patient's social relationships, helping the patient cope with grief, providing the patient with skills to help them address conflicts, and maximizing the patient's role in their social environment.[7] IPSRT attempts to reduce denial and enhance acceptance of the lifelong nature of the illness and its underestimated propensity to recur. It addressed three mechanisms of relapse: disrupted social rhythms, non-adherence to the medication regime, and interpersonal life events[8,9].
Very few Indian studies have been conducted on IPSRT therapy in Bipolar patients.
This study attempts to understand the efficacy of IPSRT therapy on Indian bipolar patients, and how effective it is in improving the stressors, interpersonal relationships, and biological rhythm that get disrupted in patients of bipolar patients.

Material and Methods

This was a hospital-based study using pre-post design with experimental and control group. The study was conducted at Rama Medical College, Hospital and Research Centre, Kanpur over a three-month period. Permission was obtained from the Institutional Ethical Committee, and written informed consent was obtained from patients who were willing to participate in the study. The sample was drawn based on the purposive sampling technique. Patients attending the Outpatient department of psychiatry who were diagnosed with bipolar affective disorder according to the ICD-10 Diagnostic

Research Criteria were recruited. A total of 54 patients were taken for the study, but 6 patients did not come for follow-up. The final sample of the study was 48 patients. Participants were randomly assigned to the experimental group receiving the Interpersonal and Social Rhythm Therapy(IPSRT) plus pharmacotherapy or the control group, receiving the pharmacotherapy alone.

Inclusion criteria

- Patients between the age range of 18–60 years.
- Patients of either sex.
- Patients who gave informed consent to participate in the study.
- Cooperative patients.

Exclusion criteria

- Patients having other psychiatric co-morbidities or having a known history of organic brain disorders.
- Presence of drug and/or alcohol abuse; receiving any other psychotherapeutic intervention at the moment of the recruitment.

Assessment Tools

1.Hamilton Depression Rating Scale (HAM-D)[10] was employed to evaluate the severity of depressive symptoms. This scale consists of 17 items that measure depressive symptoms using a semi-structured interview. Eight of the 17 HDRS-17 items are rated on a 5-point scale, while the remaining 9 items are rated on a 3-point scale, yielding a minimum score of 0 and a maximum score of 52.

2. Young Mania Rating Scale (YMRS)[11], developed by Vincent E Ziegler and published & popularized by Robert Young measures the severity of manic symptoms. This 11-item scale assesses various aspects, including mood, motor activity/ energy levels, interest in sex, sleep, irritability, rate and frequency of speech, flight of ideas, grandiosity, aggressive behaviour, appearance, and insight into the current presentation.

3. Global Assessment of Functioning (GAF)[12]is a numeric scale used by mental health clinicians and physicians to rate subjectively the social, occupational, and psychological functioning of an individual. Scores on this scale span from 100 (extremely high functioning) to 1 (severely impaired).

Procedure

All the recruited patient's socio-demographic and clinical characteristics were recorded through a semi-structured questionnaire. Patients were then assessed through the administration of the Hamilton Depression Rating Scale, Young Mania Rating Scale, and Global Assessment of Functioning before starting the therapy.

In the experimental group, medications as well as IPSRT therapy were given. In the control group only medications were given, any type of psychosocial therapy was not given.

IPSRT was done in 12 weekly sessions, each lasting about 90 min. IPSRT was given to the experimental group in 4 phases.

The **first phase**(initial phase) comprised of 2 sessions in which comprehensive illness history was taken. Assessment of the nature and quality of the patient's current and past interpersonal relationships and identification of the relationship which was there between the stressful life events & mood shifts of the person was done. The patient and involved family members were also educated about the nature of bipolar mood disorder. Patients were asked to fill in the social rhythm metric scale [13] for recording daily activities (e.g., time out of bed, first contact with another person, start working at what time, meal times, bedtime).

The **second phase** comprised of 4 sessions in which the reorganization of social rhythms and the interpersonal problem area resolution specified in the initial phase was done. Patients were assisted

in scheduling daily routines more consistently, potential causes of rhythm disruption that may emerge in the future, and how to maintain the highest level of regularity were discussed. The subjects were taught strategies to maintain self-control in challenging situations.

The **third phase** i.e., the maintenance phase which also comprised of 4 sessions. In this phase, patients were taught various relaxation techniques (such as deep breathing exercises, mental relaxation exercises, progressive muscle relaxation exercises, and meditation). Focus was given to reinforce new social rhythms and building confidence in the learned techniques to prevent future affective episodes.

The **final phase** consisted of two sessions, during which previous knowledge was reviewed, patient experiences were discussed, relaxation technique sessions were explored, and advice regarding the future was given.

Patients were assessed at baseline and after 3 months of giving the IPSRT using the above-mentioned tools.

Socio-demographic and individual characteristics were presented as numbers and percentages. Descriptive statistics were used to analyse participant's sociodemographic characteristics and the efficacy of IPSRT in bipolar patients. t-test was applied to rule out any differences in the group at the baseline i.e. before starting the therapy. After the intervention, groups were again tested based on paired t-test to know the association between IPSRT therapy and YMRS, HAMD-17, and GAF. Statistical analysis was performed using IBM SPSS 29.0.1.0 for Windows.

Results

The socio-demographic and clinical characteristics of recruited patients are reported in Table 1. The two samples were almost having equal distribution with regard to socio-demographic variables and clinical variables, with only exception of family type and education. In the experimental group, 10 patients having manic episode were treated with lithium and antipsychotic and remaining 4 were treated mood stabiliser other than lithium along with antipsychotic, 10 patients having depressive episode were treated with antidepressant and mood stabiliser other than lithium. While in the control group, 9 patients with maniac episode were treated with lithium and antipsychotic and 2 patients were given antipsychotic and mood stabiliser other than lithium, 13 patients of depressive episode were treated with antidepressant and mood stabiliser other than lithium.

Table-1: Frequency distribution of socio-demographic and clinical characteristics

DEMOGRAPHIC CHARACTERISTICS	EXPERIMENTAL GROUP		CONTROL GROUP	
	N	%	N	%
Age at Onset (M±SD)	23.75 ±2.63		23.58±2.21	
GENDER				
Male	13	54.16	14	58.30
Female	11	45.83	10	41.66
RELIGION				
Hindu	15	62.5	13	54.66
Muslim	5	20.83	7	29.16
Christian	2	8.33	1	4.16
Sikh	2	8.33	3	12.50
MARITAL STATUS				
Single	7	29.16	5	20.83
Married	14	58.33	17	70.83
Divorced	3	12.50	2	8.33
EDUCATION				
High school degree or less	4	16.66	9	37.50
Some college or associate degree	4	16.66	9	37.50
Bachelor's degree	11	45.83	4	16.66
Graduate or Professional Degree	5	20.83	2	8.33
FAMILY TYPE				
Nuclear	7	29.16	12	50.00
Joint	13	54.16	9	37.50
Three-generation family	4	16.66	3	12.50
CLINICAL CHARACTERISTICS				
No. of Prior Maniac Episodes (M± SD)	3.67±1.55		3.54±0.83	
No. of Prior Depressive Episodes (M±SD)	1.96±0.70		1.29±0.46	
PRESENT EPISODE				
Manic	14	58.33	11	45.83
Depressive	10	41.66	13	54.16
MEDICATION USE				
Lithium	10	41.66	9	37.5
Mood stabiliser other than lithium	14	58.33	15	62.5
Antipsychotic	14	58.33	11	45.83
Antidepressant	10	41.66	13	54.16

The two groups were compared on different scales i.e., HAMD-17, YMRS, GAF at baseline in Table 2. HAMD-17 score in the experimental group came out to be 20.14±10.65, in the control group 22.13±34, having p-value of 0.53. YMRS score in the experimental group came 19.79±12.18, in the control group 20.13±13.18, having p-value of 0.92. GAF score in the experimental group 60.88±9.60, in the control group 59.08±7.32, having p-value of 0.47. After comparison of 2 groups there were statistically no differences in the 2 groups at the baseline.

Table-2: Comparison of mean scores of 2 Groups at baseline

Scales	Scores Mean		F value	P value
	Experimental Group	Control Group		
HAMD-17	20.04±10.65	22.13±12.34	1.34	0.53
YMRS	19.79±12.18	20.13±13.18	1.17	0.92
GAF	60.88±9.60	59.08±7.32	1.71	0.47

The 2 groups were then compared after 3 months of giving IPSRT in the experimental group and control group in Table 3. HAMD-17 score in the experimental group after 3 months came out to be 13.83±6.53, whereas in the control group 15.96±7.12. YMRS score in the experimental group after 3 months came out to be 13.38±8.89, in the control group 15.75±11.07. GAF score in the experimental group after 3 months is 68.75±7.91, in the control group it is 64.21±7.69. There is statistical differences in both the groups after the intervention. However, patients from the experimental group as compared to control reported more significant improvement in depressive symptoms (HAMD-17: p=0.0010), maniac symptoms(YMRS: p<0.0001)and global functioning(GAF: p=0.0001).

Table 3: Comparison of mean scores at baseline and at 3 Months of 2 groups

Scales		Scores Mean		t value	P value
		At Baseline	At 3 Months		
HAMD-17	**Experimental Group**	20.04±10.65	13.83±6.53	3.77	0.0010**
	Control group	22.13±12.34	15.96±7.12	3.006	0.0063*
YMRS	**Experimental group**	19.79±12.18	13.38±8.89	5.06	<0.0001**
	Control group	20.13±13.18	15.75±11.07	3.70	0.0012*
GAF	**Experimental group**	60.88±9.60	68.75±7.91	4.63	0.0001**
	Control Group	59.08±7.32	64.21±7.69	3.19	0.004*

Discussion

Bipolar disorder had an impact not only on the life of patients but also on the family members of the patients. During the episodic period of the disorder, it hampers the socio-occupational and biological functioning of the patient but along with that during the remission phase also in some patients functioning does not come back to normalcy level. Individuals with bipolar disorder also have significant mortality as well as morbidity.

In our study a comparative analysis was done of two groups, an experimental group, and a control group, focusing on the baseline and 3-month scores of key scales: HAMD-17, YMRS, and GAF.

Significant improvements are evident in the scores of both groups following 3 months of treatment or intervention. HAMD-17 and YMRS scores decreased, indicating a reduction in depressive and manic symptoms, while GAF scores increased, reflecting improved overall functioning. According to the study conducted by Elizabeth et al. [14], IPSRT appears to be a promising adjunctive treatment for adolescents with bipolar disorder. This finding is almost consistent with the finding of our study, which shows more improvement in the patients on IPSRT therapy.

In our study, the difference in the scores of various scales at baseline and after 3 months in the experimental group came out to be highly significant ($p<0.001$) as compared to the significant difference ($p< 0.05$) in the control group. These findings are corroborated by the findings of Steardo et al.[15] who stated that at the end of the intervention, compared to controls, patients from the experimental group reported a significant improvement. Another study done by Gupta et al.[16] to assess the efficacy of IPSRT on Quality of Life and Global Functioning among BPAD patients. There was significant improvement in the GAF score of the control group only, as only manic patients were included in their study contrary to our study, where we have included both the manic as well as depressive patients. Moreover, they conducted their study for a duration of two months, whereas our study was conducted for 3 months.

In the experimental group in which we have given IPSRT the social rhythm got more regularised as compared to the control group, indicated by the Social Rhythm Metric-II 5-item version. This difference might be more significant in only the experimental group if we have also conducted a follow-up study for a long period i.e., two years as done by Frank et al. [17]

In many cases of BD, the use of standalone pharmacological treatment was found to be unable to induce remissions or prevent relapses. For this reason, adjuvant therapies are strongly required [18]. Many biological processes, including sleep/wake rhythm, regulation of body temperature, neurotransmitter release, and hormonal secretion, follow circadian rhythms and are regulated by a central pacemaker in the suprachiasmatic nucleus located in the anterior hypothalamus [19]. In bipolar patients, irregular circadian rhythms are strongly suggested to contribute to episodes of mania and depression. The application of IPSRT together with classical psychotropic medications is proposed to help BD patients in adjusting their daily routines and making them more adherent to prescribed drugs. IPSRT is deemed helpful in regularizing both the biological and psychosocial factors in BD patients to amend their circadian rhythm and sleep–wake cycle, as well as for rising patients' functioning [20].

In the current study IPSRT has been empirically supported as adjunctive psychotherapy for adult patients having bipolar disorder, which helps in delaying relapse, speeding recovery from a bipolar depressive episode, and enhancing occupational and psychosocial functioning in adults with bipolar disorder [21].

Conclusion

According to our study, IPSRT works on improving the disrupted sleep-wake cycle, medication adherence, resolving disputes in interpersonal relationships, working on various stressors that lead to mood fluctuations and developing coping skills and relaxation techniques. Thus, IPSRT along with pharmacotherapy help the patients of BPAD in the reduction of their mood symptoms, and improvement in their biological and occupational functioning, and quality of life.

Limitations of the Study

The study's sample size might be relatively small, limiting the generalizability of the findings to a broader population. Future studies with larger samples are needed to confirm these results.

The study only assessed outcomes over a 3-month period. Longer-term follow-up is necessary to understand the sustainability of the observed improvements and potential relapses. The study was conducted at a single centre, which could introduce bias and limit the diversity of the study population. Multi-centre studies are needed to enhance external validity.

Declarations:
Conflicts of interest: There is no conflict of interest associated with this study
Consent to participate: We have consent to participate.
Consent for publication: We have consent for the publication of this paper.

Authors' contributions: All the authors equally contributed the work.

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