Efficacy of Interpersonal and Social Rhythm Therapy on Sleep Disorders and Psychological Adjustment among Patients with Bipolar Disorder

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Abstract

Background: Bipolar disorder (BD) is a recurrent mental illness that affects more than 1% of the world's population, it typically manifests in young adulthood. Interpersonal and Social Rhythm Therapy is one of the interventions that has been created to carry out the bipolar illness treatment plan (IPSRT). The goal of this intervention is to better manage patients' stressful life events, lessen disruptions to their social and circadian cycles, and enhance medication compliance. **The study aimed** to evaluate the efficacy of interpersonal and social rhythm therapy on sleep and psychological adjustment among patients with bipolar disorders. **The setting of the study**: The study was done at the psychiatric inpatient ward at the Psychiatric and Addiction Treatment Hospital in Mit-Khalf,Menoufia, Egypt. **Subjects:** A purposive sample of 50 bipolar disorder patients. **Research Design:** The study's aim was accomplished using a quasi-experimental design. **Data collection:** Three tools were used; Tool (1): Structured socio-demographic and medical characteristics questionnaire for an interview Tool (II): The Arabic version of the psychological adjustment questionnaire and Tools (III): Sleep Disorders scale. **Results:** According to the study's findings, most of the patients were between the ages of 31 and 40, and more than half (76%) of them were male**.** When compared to before applying interpersonal and social rhythm therapy, there was a highly statistically significant improvement in sleep disorder, overall psychological adjustment, and its subdomains. **Conclusion:** It was concluded that applying interpersonal and social rhythm therapy proved to be effective in improving sleep and psychological adjustment among patients with bipolar disorders.

keywords: interpersonal and social rhythm therapy, psychological adjustment, sleep disorder Activities, and bipolar disorder

Introduction

Bipolar disorder (BD) is one of the most debilitating mental disorders, with a lifetime frequency of 2.4%, 0.6% for type I, and 0.4% for type II bipolar disorder [1]. It places a heavy strain on patients, their loved ones, and the entire society [2]. Manic and depressed mood fluctuations, as well as a variety of other symptoms such as affective, cognitive, and physical changes, characterize its symptoms [3]. Moreover, many bipolar disorder patients also experience comorbid mental conditions, such as sleep difficulties and irregular sleeping patterns [4]. The overall

health, physical-cognitive, and psychological elements of Quality of life (QOL) are all negatively impacted by inadequate sleep, which results in everyday dysfunction and a decline in personal performance [5].

About 50% of people around the world have sleep disturbances, and this number is significantly greater in people who are in psychiatric settings. Sleep abnormalities are usually linked to BD and are frequently a reliable indicator of mood change. Thus, maintaining constant sleep-wake cycles is essential to maintaining stability in BD, emphasizing the critical function of circadian rhythms in this illness. Insomnia is the BD symptom that affects people the most, followed by excessive daytime drowsiness, nightmares, trouble going asleep or staying asleep, poor sleep quality, sleep talking, sleepwalking, and obstructive sleep apnea [6].

Psychological adjustment of patients with bipolar disorder is highly impaired, and almost all of them struggle to maintain familial ties while managing extremely poor psychosocial functioning [7]. One of the most significant functional impairments in bipolar disorder is family dysfunction, and worse family dysfunction is associated with worse psychosocial performance [8]. Medication and/or psychological therapies are utilized to manage these diseases. However, it has been noted that poor treatment adherence for many diseases prevents psychological adjustment, lessens the impact of treatment, lowers the quality of life, and puts an increased burden on the healthcare system [9].

Numerous studies have shown that psychological therapies, when combined with mood-stabilizing drugs, assist to lessen symptoms, lengthen the time a patient feels well, improving recovery, and reducing the likelihood of relapse. There are four approaches: interpersonal and social rhythm treatment, cognitive behavioral therapy (CBT), family-focused therapy, and psychoeducation [10]. Social rhythms are regular patterns of everyday routines that can affect the circadian clock both directly and indirectly through light exposure. Social rhythm therapies (SRTs) encourage the adoption of consistent, daily routines of activity to aid in the restoration of circadian biological processes and to enhance mood [11].

The goal of IPSRT is to stabilize everyday rhythms including sleeping, waking up, and mealtimes. A regular schedule enables better mood regulation. Establishing a daily schedule for sleep, diet, and exercise may be beneficial for those with bipolar disorder [12]. Focusing on the resolution of existing interpersonal issues, such as unresolved sorrow, interpersonal disagreements, role shifts, and interpersonal isolation, is what the interpersonal components of therapy entail [13]. Moreover, Interpersonal and social rhythm therapy (IPSRT) helps people improve their affective state by understanding and dealing with their biological and social rhythms [14]. For those who suffer from mood disorders, particularly bipolar disorder, IPSRT is useful supplemental therapy. It lists methods to help and enhance medication adherence, deal with environmental stressors, and lessen erratic behavior and disruptions in social and circadian rhythms [15]. In addition, interpersonal problems including lack of support from a spouse or partner, interruption of routine rest, the birth of a child, and changes in the workplace may contribute to the return of BD [16]. As a result, IPSRT lessens the effects of bipolar disorders by controlling patients' daily routines and enhancing their social interaction and performance. Therefore, this study aims to investigate the efficacy of interpersonal and social rhythm therapy on sleep disorders and psychological adjustment among patients with bipolar disorder.

The aim of the study   -

Evaluate the efficacy of interpersonal a
social rhythm therapy on sleep a
psychological adjustment among patients w
bipolar disorders

Research Hypotheses

Patients with bipolar disorders who particip
in interpersonal and social rhythm therapy will
have better sleep and psychological
adjustment post-therapy than pre-intervention

Methods

Research Design

A quasi-experimental design was employed to
accomplish the study's aim.

Research Setting

The study was done at the psychiatric
inpatient ward at the Psychiatric and
Addiction Treatment Hospital in Mit Khalf
,Menoufia, Egypt.

Sample

A purposive sample of patients with bipolar
disorders (50 patients) who were admitted in
the above previously mentioned setting and
selected in accordance with the 2002 edition
of the Epi-Info statistics program developed
by the World Health Organization and the
Centers for Disease Control and Prevention in
Atlanta, Georgia, in the United States. The
criteria used for sample size calculation were
as follows: 95% confidence limit. The sample
was chosen using the following criteria:

The Inclusion Criteria

For a patient to be eligible for the study, they
must fulfill the following requirements: A
participant must: a) aged between 18 to 70; b)
have a diagnosis of bipolar disorder; c) be
taking a stabilized dose of mood stabilizer for
at least a year, at therapeutic blood levels for
lithium or valproic acid; and d) express their
willingness to participate in the study by
providing written informed consent after
receiving a thorough explanation of the aim of
the study.

The Exclusion Criteria

- Unwillingness to provide formal consent for
the study's participation; b) a neurologic
disease diagnosis, c) drug and/or alcohol
abuse; and d) treatment with any other
psychotherapy intervention at the time of
recruitment are all grounds for exclusion from
the study.

The instruments: The study's objective was
accomplished by using three tools:

**Tools (I): A Socio-demographic and
Clinical Characteristics Structured
Interview Schedule:**

It was constructed by researchers based on a
review of the pertinent literature to extract
information on the socio-demographic and
clinical characteristics of patients (age, sex,
marital status, level of education, physical
illness, familial problems, compliance with
medications, source of social support ad onset
of the illness).

**Tool (II): The Arabic version of the
psychological adjustment questionnaire**

It was adopted by moqbel, (2010) [17] it was
an Arabic valid and reliable scale to assess
psychological adjustment. It consisted of 63
statements and contained four subdomains;
Personal (16 items), physical (17 items),
familial (15 items), and social (15 items). a
three-point Likert-type scale. The responses
were categorized as 1 (disagree), 2
(sometimes), and 3(agree). The higher scores
indicate a high level of psychological
adjustment.

**Tools (III): Sleep Disorders Scale (Arabic
version)**

This scale was developed and validated by
Albania, (2008) [18] to measure sleep
disorders. It consisted of 39 items in the form
of using a three-point Likert scale, from 1
never to 3 always.

The Scoring system for sleep disorders

39 - 70 (mild),71–88 (moderate) and 89–117
(severe)

The procedure of data collection

Validity of the tools: A panel of five professionals in the field of psychiatric and mental health nursing evaluated the content validity of the instruments to make sure they were relevant and completed.

Reliability of the tools: The researcher used reliability to verify the internal consistency of the tool by giving the same tools to the same people under identical circumstances. When results from repeated tests were evaluated (test-retest reliability), the tools revealed reliability of 0,74 for the tool (2) and 0.85 for the tool (3).

A pilot study:

A pilot study was carried out to evaluate the usefulness and application of the instruments and to determine how long it would take to fill them. For the pilot study, a total of 10% of the sample was recruited. The pilot study's subjects all met the requirements for inclusion. Only minor changes to instrument one were found in the pilot trial, and those participants were kept out of the main study.

Administrative approval: The General Secretariat of Mental Health Hospitals' commission for Research Ethics and the director of the psychiatric and addiction treatment facility in mit-Khalf at Menoufia, Egypt, both gave their official approval for the study to go forward.

Ethical consideration: Following a thorough explanation of the study's purpose, nature, and confidentiality, the patient's written consent was obtained.

Assessment phase (pretest phase)

- Establishing a rapport with the bipolar patients and outlining the study's purpose and planned action steps were the objectives of this phase.
- The interview was done on the ward after the researcher checked all of the inpatients' records for those who met the inclusion criteria.

- The researcher used the three study instruments as a guide to conduct individual patient interviews to get baseline assessments (pre-test). Each patient interview lasted between 40 and 60 minutes, depending on the patient's capacity for comprehension and communication.

Implementation phase

- This phase's objective was to give bipolar patients theoretical information about interpersonal and social rhythm therapy, including its definition and benefits, to acquire patient cooperation and participation before implementing social rhythm therapy.

- The study's participants were distributed into smaller groups. Each category was comparable regarding sex and client preference for interpersonal and social rhythm therapy. Eight sessions were held with six to eight participants in each subgroup. There will be two sessions each week for a month. It takes between 45 and 60 minutes for each session.

- From the beginning of March until the end of September (2021), interpersonal and social rhythm therapy was utilized.

- The sessions were carried out in the conference room of the study's location.

- To increase patient participation, individual patient differences, levels of knowledge, willingness, and responsiveness during the sessions, were taken into account.

- The researcher was the session's organizer and information source., and motivator for the patients. He also served as a facilitator, instructor, and trainer in addition to being the group leader.

- Start a group session by walking around the circle and asking each patient to answer a question about how they are feeling right now (sometimes called a round or a check-in).

- The following was the layout of each session: The researcher gave a brief overview of the session's subject and planned activities within the first five minutes. The remaining 40 minutes were spent summarising, receiving feedback, expressing gratitude, and providing them with information about the schedule for the following session.
- Group discussions, flip charts, images, a laptop, and headphones were all used during the study.

Sessions are scheduled as follows

Session 1: (Preparation)This session's objective was to actively engage bipolar patients in their interpersonal and social rhythm therapy. This is done by introducing the researcher to the bipolar patients, laying out the group rules, such as confidentiality, and explaining the goal and scope of the study.

Session 2: (bipolar disorders) By examining the patients' knowledge of the condition and its particular effects on them, this session aimed to strengthen the subjects' understanding of bipolar illness**,** determining the pattern and course of a patient's bipolar illness symptoms, as well as the connection between routine disturbances and mood disruptions. A video and power point were provided by the researcher.

Session 3: (Improving relationships) assists patients in realizing the impact their relationships have on their lives. The two objectives are to improve social interaction for patients and lessen depressive symptoms. This helps the patient identify and prioritize any interpersonal difficulties they wish to address. Additionally, provide assistance with issue clarity, communication analysis, and encouraging listening.

Session 4: (Strategies for regular social patterns) aimed to identify the studied subjects' concepts of social rhythms and also to clarify the relationship between bipolar

disorders and social rhythm disruptions. Identifying difficult social rhythms and developing methods to establish more regular patterns, such as using the social rhythm metric (SRM) to assist the patient in keeping track of when they go to bed, get out of bed, go to work, eat, and interact with others. Other methods included keeping a record of the ideal (or target) time to complete everyday tasks, recording the time the patient spent performing the activity each day; assisting them in scheduling these routines more consistently, discussing with them potential causes of rhythm disruption that may emerge in the future, and working with them to develop strategies for maintaining the highest level of regularity despite the existence of these potential disruptions.

Session 5: (strategies improve sleep quality) Implementation of strategies intended to improve sleep quality. The participants were asked to keep up a regular sleeping schedule and only go to bed when they were truly exhausted. Get them out of bed and avoid having a big meal just before bed if they are still awake after 30 minutes.

Session 6: (problem-solving skills) are the ability to identify the essence of a problem, deconstruct it, and formulate a series of acceptable solutions to address its issues. The subjects were taught to identify the problem, define the main elements of the problem, consider potential solutions, and maintain self-control in challenging situations to improve the participants' confidence and self-control in those situations, as well as better, prepare them for future problems. The final phase in the problem-solving process is to create a step-by-step execution plan, act decisively and successfully, and search for lessons to learn.

Session 7: (relaxation techniques) Patients were instructed in various relaxation techniques (such as deep breathing exercises, mental relaxation exercises, progressive muscle relaxation exercises, and meditation

exercises), with the steps being explained and put into practice repeatedly to ensure that patients have mastered their use.

Session 8: (Closure) In this session, previous knowledge was reviewed, patient experiences were discussed, and feedback on the social rhythm treatment and relaxation technique sessions was explored. The researcher praised the patients who had participated in the social rhythm treatment session.

Evaluation phase

By immediately reapplying the study tools, the training was evaluated (tools II and III) as needed (post-test)

Statistical Analysis

The Statistical Package of Social Science (SPSS) version 19 was used on an IBM personal computer to gather, tabulate, and statistically analyze the data (SPSS, Inc, Chicago, Illinois, USA). **The mean, standard deviation (SD), range, and percentages** were used to display quantitative data, whereas the numbers and percentages were used to provide qualitative data. **The Shapiro-Wilk normality** test was used to determine whether the data were normally distributed or not. **The t-test** is used to compare two groups using quantitative variables that are regularly distributed. When comparing three or more groups with quantitative variables that are normally distributed, **ANOVA (F)** is employed. **The paired t-test** is used to compare two related groups using quantitative variables that are normally distributed. **The nonparametric Wilcoxon signed-rank test** is used to compare two related groups using quantitative data that is not regularly distributed. **The marginal homogeneity test** is used for comparisons between two related groups with quantitative characteristics. When two numerical variables are correlated but are not normally distributed, Spearman's correlation is used. **The significance level was set at p-value <0.05.**

Results

Table 1: revealed that most patients studied were between the ages of 31 and 40 years; more than half (76%) were male; roughly half (48%) were single; 40% had secondary education; 60% had familial problems; 88% had medication compliance; and that 46% had an onset of illness **less** than five years.

Figure (1): illustrated the comparison between the level of sleep disorder among the studied group pre and post-intervention, it showed that mild sleep disorders increased from 44% before the interpersonal and social rhythm therapy to 88% after the social rhythm therapy, and severe sleep disorders decreased from 20% before interpersonal and social rhythm therapy to 0% after the social rhythm therapy.

Figure (2): showed the comparison between the psychological adjustment of the studied group pre and post-intervention, the table revealed that the mean score of the total psychological adjustment and its subdomains (personal, physical, familial, and social) was increased after interpersonal and social rhythm therapy than before where mean score pre-intervention was (35.1,33.3,31.5, 32.7 respectively) and post-intervention increased to (38.6,37.9,37.6, 37.9 respectively). in addition, the total psychological adjustment means score pre-intervention was (132.7) which increased to (152.2) post-intervention.

Table (2): Revealed that more than half of the 60% of bipolar patients who had moderate sleep disorders were female while 85% of bipolar patients who had mild levels of sleep were male, and there was a significant relationship between sex and sleep disorders (P value 0.002). At a P value of 0.001, there was a highly significant correlation between sleep disturbances and illness onset.

Table (3): revealed the relation between the socio-demographic and clinical characteristics of the studied group and their adjustment post-intervention, it was found no statistically significant relationship between the study's

bipolar patients' socio-demographic features and their adjustment.

Table (4): illustrated the correlation between sleep disorder and psychological adjustment among the study group which reflected a higher significant negative correlation between sleep disorder, personal adjustment, and social adjustment (p=0.005, 0.002

respectively). Whereas, the correlation between sleep disorder, familial adjustment, and overall adjustment had a moderate significant negative difference (p = 0.036, 0.028, respectively). This indicates that the overall adjustment score is lower in patients with sleep disorders

Table (1): Socio-demographic and clinical characteristics of the studied group (N=50)

| Socio-demographic characters	No.	%
Age / years		
20 – 30	9	18.0
31 – 40	31	62.0
41 – 50	6	12.0
> 50	4	8.00
Sex		
Male	38	76.0
Female	12	24.0
Social status		
Single	24	48.0
Married	18	36.0
Widow	2	4.00
Divorce	6	12.0
Educational level		
Illiterate	4	8.00
Primary	15	30.0
Secondary	20	40.0
University	11	22.0
Physical illness		
Yes	9	18.0
No	41	82.0
Familial problems		
Yes	30	60.0
No	20	40.0
Medication compliance		
Yes	44	88.0
No	5	10.0
Onset of illness		
< 5 years	23	46.0
5 – 10 years	20	40.0
> 10 years	7	14.0
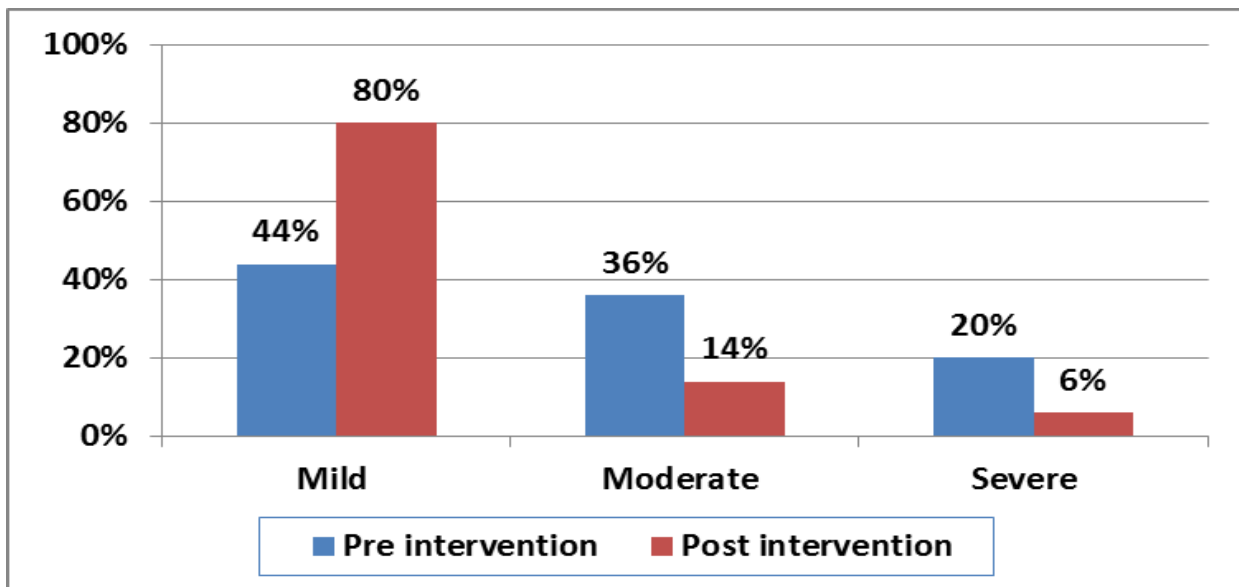
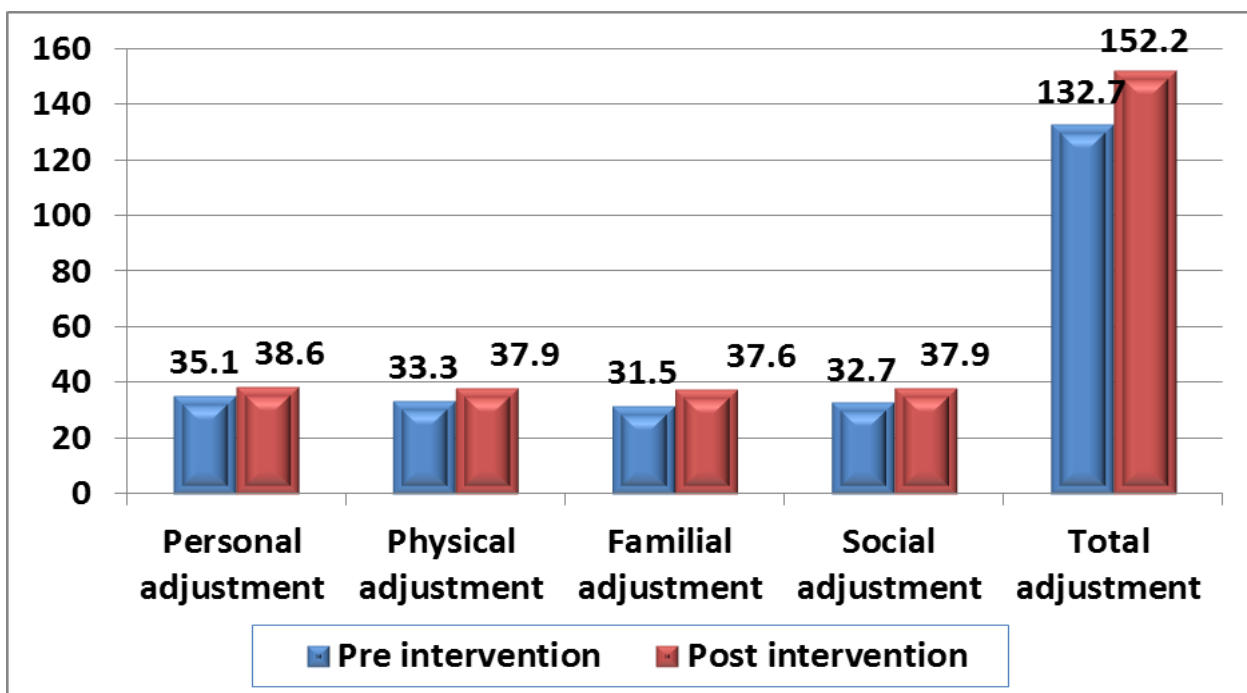**Figure (1): Comparison between the level of sleep disorder among the studied group pre and post-intervention (N= 50):**

Figure (2): Comparison between psychological adjustment of the studied group pre and post-intervention (N= 50)

Table (2): Relation between socio-demographic and clinical characteristics of the studied group and level of sleep disorder post-intervention (N=50):

Socio-demographic characters	Sleep disorder		Test of sig	P value
	Mild (N= 40)	Moderate (N=10)		
	N (%)	N (%)		
Age / years			X^2 3.62	0.304
20 – 30	6(15.0)	3(30.0)		
31 – 40	24(60.0)	7(70.0)		
41 – 50	6(15.0)	0(0.00)		
> 50	4(10.0)	0(0.00)		
Sex			FE 8.88	**0.002****
Male	34(85.0)	4(40.0)		
Female	6(15.0)	6(60.0)		
Social status			X^2 2.69	0.442
Single	21(52.5)	3(30.0)		
Married	14(35.0)	4(40.0)		
Widow	1(2.50)	1(10.0)		
Divorce	4(10.0)	2(20.0)		
Educational level			X^2 3.00	0.391
Illiterate	3(7.50)	1(10.0)		
Primary	10(25.0)	5(50.0)		
Secondary	18(45.0)	2(20.0)		
University	9(22.5)	2(20.0)		
Physical illness			FE 4.09	0.065
Yes	5(12.5)	4(40.0)		
No	35(87.5)	6(60.0)		
Familial problems			FE 0.521	0.720
Yes	23(57.5)	7(70.0)		
No	17(42.5)	3(30.0)		
Medication compliance			FE 0.758	0.586
Yes	36(90.0)	8(80.0)		
No	4(10.0)	2(20.0)		
Onset of illness			X^2 34.0	**<0.001****
< 5 years	23(57.5)	0(0.00)		
5 – 10 years	17(42.5)	3(30.0)		
> 10 years	0(0.00)	7(70.0)		

*Significant   FE: Fisher exact test

Table (3): Relation between socio-demographic and clinical characteristics of the studied group and their adjustment post-intervention (N=50):

Socio-demographic characters	Total adjustment Mean ±SD	Test of sig	P value
Age / years 20 – 30 31 – 40 41 – 50 > 50	154.0±7.71 153.9±10.1 141.8±10.9 150.7±12.7	F 2.57	0.065
Sex Male Female	151.5±11.2 154.4±7.69	t-test 0.885	0.381
Social status Single Married Widow Divorce	152.0±10.4 151.8±10.8 156.0±8.48 152.8±12.4	F 0.097	0.961
Educational level Illiterate Primary Secondary University	154.2±12.9 150.5±11.6 154.9±10.7 149.0±6.92	F 0.956	0.422
Physical illness Yes No	154.7±8.38 151.7±10.9	t-test 0.763	0.449
Familial problems Yes No	153.5±10.1 150.3±11.0	t-test 1.04	0.301
Medication compliance Yes No	152.4±10.4 147.8±10.1	t-test 0.943	0.350
Onset of illness < 5 years 5 – 10 years > 10 years	152.0±10.8 154.3±9.00 147.0±12.8	F 1.27	0.289

 F: ANOVA

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Table (4): Correlation between sleep disorder and psychological adjustment among the study group (N= 50):

Studied variables	Sleep disorder	
	R	P value
Personal adjustment	-0.388	0.005**
Physical adjustment	-0.248	0.082
Familial adjustment	-0.298	0.036*
Social adjustment	-0.435	0.002**
Total adjustment	-0.311	0.028*

*significant   **High significant   r: Spearman's correlation

Discussion

IPSRT was created specially to help patients handle stressful life events, lessen disruptions to their social and circadian rhythms, and enhance medication compliance. Interpersonal psychotherapy (IPT) and social rhythm treatment are the theoretical foundations of IPSRT. Only a few research has examined the effectiveness of IPSRT on BD patients' outcomes Steardo et al., (2020) [19]. So, in this study, the efficacy of IPSRT on psychological adjustment and sleep disorders was evaluated.

The majority of patients in the current study were between the ages of 31 and 40; more than half were males; roughly half were single, and approximately one-third of the sample had secondary education. This may be because, at this age, the disease's symptoms become more obvious and men are more susceptible than women.

This result was consistent with Ana M. Díaz Zuluaga et al., (2018) [19] research on "Evaluation and socio-occupational intervention in bipolar and schizophrenic patients within a multimodal intervention Program-Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) " which looked at similar

subjects. The sociodemographic factors showed statistically significant differences, with average ages of 37 and 43, respectively. More than half of the BD patients in the sample were single, roughly a quarter was unemployed, and roughly a third had finished their higher education. However, the findings contradicted with the present study findings as more than half of the BD patients were female.

The results of the current study showed that mild sleep disorders increased from one-third of the studied sample before the social rhythm therapy to two-thirds of the studied sample after the social rhythm therapy, and severe sleep disorders decreased from approximately one-quarter of the studied sample before the social rhythm therapy to less than a tenth of the studied sample after the social rhythm therapy. This might be because IPSRT is simple to integrate into mental health hospitals' daily routine care and has a significant impact on sleep disruptions through the tracking of daily energy levels, which helps with better daily planning.

This was in line with research done by Fiorillo (2019) [20]. its title is "reducing the mortality gap in people with severe mental

disorders: the role of lifestyle psychosocial interventions" also, according to a study by Haynes PL et al., (2016) [21] on "Cognitive Behavioral Social Rhythm Group Therapy for Veterans with Posttraumatic Stress Disorder, Depression, and Sleep Disturbance". who revealed that IPSRT decreased the depression ratings in PTSD among depressed patients and persons with sleep disturbances. Additionally, Sahar M et al., (2021) [22] who investigated "The Rhythm is Gonna Get You: Social Rhythms, Sleep, Depressive, and Anxiety Symptoms" found that better sleep habits and thoughts mitigate this link between increased social rhythmicity and less depressive and anxiety symptoms.

The current study demonstrated that social rhythm therapy increased the mean score of the overall psychological adjustment and its subdomains (personal, physical, familial, and social) more than before. This can be a result of IPSRT's success in enhancing psychological adjustment. This was in the same line with Pirkashani et al., (2021) [23]. who studied "The effectiveness of interpersonal and social rhythm therapy with and without computer-based cognitive rehabilitation therapy on emotion regulation and response inhibition in methamphetamine abusers" and found that IPSRT increases the inhibitory response and decreases emotion dysregulation". Moreover, Steardo et al., (2020). [3] who studied" Efficacy of the interpersonal and social rhythm therapy (IPSRT) in patients with bipolar disorder: results from a real-world, controlled experiment" Their findings showed that patients in the experimental group reported significant improvements in anxious, depressive, and manic symptoms, overall functioning, and response to mood stabilizers after the intervention compared to controls.

According to the findings of the current study, sex and sleep disorders are significantly related. This might be because there were more males than females in the sample under study. This was in line with Rajab et al., (2021) [24] who studied "Gender Differences in Sleep and Mental Health among Saudi Adolescents," which found that girls had lower mean sleep scores than boys (58.7 vs. 63.4) and that girls also had lower mean scores across all of the different sleep domains (sleep disturbance, initiation, adequacy, maintenance, somnolence, and respiratory problems). However, this finding was contradicted by Zeng et al., (2020) [25.] who found that females had a considerably greater prevalence of insomnia compared with males (p 0.0001) in their study, "Gender Difference in the Prevalence of Insomnia: A Meta-Analysis of Observational Studies.

The findings of the current study demonstrated a highly significant relationship between sleep disturbances and the onset of illness. This might be a result of the major changes in sleep patterns as a result of bipolar disorder. This finding was consistent with Pancheri et al., (2019) [26], who discovered in a study titled "A systematic review of sleep abnormalities anticipating the beginning of bipolar disorder" that sleep difficulties began roughly 6 years before the onset of the first major mood episode (p = 0.008).

Concerning the correlation between psychological adjustment and sleep disorders, the current study's findings showed a negative significant correlation between overall adjustment and sleep disorders. This may be because psychological adjustment declines and vice versa when sleep disruption increases. This study was in the same line with Cha K, (2022) [27] who investigated "A Longitudinal Approach to the Relationships Among

Sleep, Behavioral Adjustment, and Maternal Depression in Preschoolers". According to his findings, the early levels of adjustment were inversely correlated with the initial levels of sleep problems (= 0.105, p 0.05).

Conclusion: It was concluded that applying interpersonal and social rhythm therapy proved to be effective in improving sleep and psychological adjustment among patients with bipolar disorders.

Recommendations

•The psychiatric nursing educational curriculum should include the effects of using interpersonal and social rhythm therapy as an intervention for patients with bipolar disorder

•In-services training program for psychiatric nurses about the importance of interpersonal and social rhythm therapy and how to apply it to reduce sleep disorders and improve psychological adjustment.

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