

Interpersonal and Social Rhythm Therapy's Effectiveness on Functional Outcomes among Clients with Bipolar Disorders

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Abstract:

Background: Bipolar disorder is considered one of the most debilitating mental illnesses. While most studies focus on symptoms, recurrences, and mood states, functioning is becoming an increasingly important research focus. This study aimed to assess the effect of Interpersonal and Social Rhythm Therapy on functional outcomes among clients with bipolar disorders. **Methods:** A prospective quasi-experimental study was conducted on a purposive sample of 27 outpatients diagnosed with bipolar disorders at the Main University Hospital's psychiatric outpatient clinics. **Tools:** Interpersonal Problem Areas Rating Scale, Social Rhythm Metric Scale SRM-II-5, and The Multnomah Community Ability Scale were used. **Results:** There was a statistically significant improvement in the total score of the Multnomah Community Ability Scale from the first measurement compared to after the intervention and one month later (55.52 SD=7.42, 68.67 SD=7.13, 68.74 SD=7.24, respectively), with a large effect size of 90.2%. Significant improvements were also observed in the mean scores of the Social Rhythm Metric Scale SRM-II-5 from (2.91 SD= 1.32) to 4.89 SD= 1.23, and 5.04 SD=1.21 respectively immediately after the intervention and one-month later, with a large effect size of 83.2%. **Conclusions:** Interpersonal and Social Rhythm Therapy was found to be effective in improving functional outcomes and regularizing social rhythm among patients with bipolar disorder. These improvements can enhance patients' social roles, helping them control mood disturbances associated with social rhythm disruption and loss of social roles. Therefore, psychiatric nurses might consider incorporating IPSRT intervention as a crucial component in the care of patients with bipolar disorders.

Keywords: Bipolar Disorders, Functional Outcomes, Interpersonal and Social Rhythm Therapy.

Introduction: Bipolar disorder (BD) is one of the most debilitating mental illnesses, with a lifetime incidence of 2.4% and a prevalence of 0.6% for the bipolar I subtype and 0.4% for the bipolar II subtype, both of which typically emerge during the adolescent years. Between half and sixty percent of those who develop bipolar disorder do so before the age of nineteen (Rowland & Marwaha, 2018). Approximately 22 million people worldwide are considered to be moderately or severely disabled due to BD, and the World Health Organization (WHO) has listed BD as the 12th most significant cause of disability globally.

Unfortunately, the symptoms of bipolar illness may be catastrophic during this vital developmental phase. Most teenagers with bipolar disorder have severe difficulties in all areas of their lives. High rates of psychosis, mental comorbidity, and hospitalization are seen in adolescents with bipolar illness (Phillips & Kupfer, 2013). The risk of suicide is elevated in those with early-onset bipolar illness. Patients, loved ones, and society bear a disproportionate share of the burden (Hansson et al., 2018). According to the DSM-5, bipolar I disorder is characterized by manic and depressive episodes that occur at regular intervals. A period of at least a week in which the individual's mood is elevated, expansive, or irritable and in which he/she also exhibits abnormally high levels of activity or energy (Haile et al., 2021). In a severe depressive episode, a change in functioning may be identified if five or more of the following symptoms are present throughout the same two-week periods, significant weight loss or gain, depression or loss of interest, insomnia or hypersomnia, psychomotor agitation or retardation, and tiredness, feelings of inadequacy, as well as excessive or inappropriate guilt (which may be delusional) leading to recurrent suicidal ideation, with or without a precise plan (Kennedy, 2008).

Generally, little attention has been dedicated to psychosocial consequences in clients with bipolar illness. Recent investigations, in contrast to the pioneering ones, indicate a substantial amount of psychosocial dysfunction even in euthymic individuals (Geddes & Miklowitz, 2013). Work, school, independence, leisure, and relationships are all components of "functioning." According to some definitions, functional recovery is when a person returns to their pre-episode level of functioning. In a study of hospitalized patients with a first manic episode with psychotic symptoms, it was observed that most patients (97%) achieved syndrome recovery at 24-month follow-up, but only 37% achieved functional recovery (Raiman et al., 2021). These results show that a divide develops early on between clinical and functional outcomes in bipolar disorder. As a result, a person's health-related quality of life and functioning, including their ability to hold down a job and be productive at work, may suffer from the effects of bipolar illness (Chen et al., 2019).

Most interventional studies in people with BD have examined symptoms, recurrences, and mood states as the primary end variable. However, functioning is also becoming an increasingly important focus of research (Grunze & Born, 2020). Clinical effectiveness studies are providing increasing evidence for the use of psychotherapies as an adjunct to psychopharmacology in the management of BD. One of the most well-supported forms of psychotherapy is Interpersonal and Social Rhythm Therapy (IPSRT), which combines the two previous therapies to assist patients in coping with their condition and lessen the likelihood of recurrence. Interpersonal and Social Rhythm Therapy (IPSRT) aims to restore balance to internal body clocks and social interactions (Novick & Swartz, 2019).

Therefore, including pharmacological and psychosocial therapies in standard clinical practice is crucial for the best possible care

of individuals with bipolar illnesses (Shah et al., 2017). Therefore, this study aimed to assess the effect of Interpersonal and Social Rhythm Therapy on functional outcomes among clients with bipolar disorders.

Research Hypothesis

Clients with bipolar disorders who attend IPSRT sessions exhibit higher levels of functional outcomes than before the sessions.

Materials and Method

Materials

Design: A quasi-experimental repeated measures (within-group) research design will be followed in this study.

Settings: The study was conducted in the psychiatric outpatient clinics of the Main University Hospital, which is affiliated with the Faculty of Medicine at Alexandria University. The clinics provide free treatment services for clients suffering from neuropsychiatric disorders. These services include psychiatric examination, diagnosis, and dispensing of medications and psychotherapy for some patients. The clinics work 3 days a week (Sunday, Monday, and Tuesday) for patients with mental illness, from 8 am to 2 pm.

Subjects: Based on the outpatient records of the setting mentioned above, the number of patients diagnosed with BD who visit the psychiatric outpatient clinics per week ranges between 1 to 4 patients, 4-16 patients per month, and 12-48 patients / 3 months (the psychiatric outpatient clinics' records of the Main University Hospital 2022/2023).

The G*Power Windows. 3.1.9.7 Program was used to estimate the sample size using the following parameters: about 27 outpatients with BD per 3 months, effect size $f = 0.50$, α err. Prob. = 0.01, Power (1- β err. prob.) = 0.99, number of groups = 1 and number of measurements = 4. The Program revealed a sample size of 27 patients. Accordingly, the study subjects will comprise a convenience sample of 27 patients diagnosed with BD according to the DSM-5, with no comorbidity.

Tools:

Tool 1: Sociodemographic and Clinical Data Structured Interview Schedule for Patients with BD:

The researcher constructed this instrument to gather clients' sociodemographic information, including age, gender, and marital status. The clinical information or illness history, such as the diagnosis, the type of episode, the duration of the illness, the triggers of prior episodes, and the drugs prescribed, were also elicited.

Tool II: The Multnomah Community Ability Scale (MCAS):

Barker et al. (1994) developed the Multnomah Community Ability Measure (MCAS), a standardized scale, to evaluate the level of functioning of mentally ill individuals living in the community. Using seventeen indicators completed and scored by the researcher during a semi-structured interview schedule, it evaluates a client's functioning skills in the community during the past three months. The indicators are rated from 1 to 5 on a 5-point Likert ordinal scale, where 1 indicates a higher degree of disability, and 5 indicates a lower level.

Tool III: Interpersonal Problem Areas Rating Scale (IPARS-M):

It is a structured interview guide designed by Klerman et al. (1984) to evaluate four main interpersonal problem areas in a patient's life: unresolved grief, interpersonal role conflicts, role transitions, and interpersonal deficiencies in the past or present. Then, it was revised by Andrade et al. (2008) by adding a fifth problem named "loss of healthy self." The researcher verified all relevant explanatory elements and noted whether each problem area was present. By the end, the client and the researcher had decided to concentrate on two key concerns that impacted the client.

Tool IV Social Rhythm Metric Scale

SRM-II-5: The Social Rhythm Metric (SRM), a tool for measuring everyday social rhythms in people with bipolar disorder, is used to quantify these rhythms.

It was initially created by Monk et al. (1990) as a collection of 17 daily activities, but it was then condensed to SRM-II-5 (Monk et al., 2002), which only comprised five daily activities that are believed to make up a person's social rhythm (getting out of bed, making first contact with another person, starting work, eating dinner, and going to bed). A score is given by the SRM-II-5 depending on how long each activity takes on average. If an activity occurs at least three times each week, and the timing is within 45 minutes of the typical or habitual time, it is considered a hit for the daily pattern. The total number of hits from these activities is divided by the total number of activities that happen at least thrice weekly to determine the SRM-II-5 score.

Method

- Approval was obtained from the Ethical Research Committee, Faculty of Nursing, Alexandria University.
- Written permissions for conducting the study were obtained from the responsible authorities.
- The researcher successfully completed an online training program on Interpersonal and Social Rhythm Therapy (IPSRT) for bipolar disorders under the supervision of Frank E, Swartz H, and Frankel D (<https://www.ipsrt.org/>).
- Tool I: Sociodemographic and Clinical Data Structured Interview Schedule for Patients with OCD) was developed by the researcher.
- Tools **IPARS-M** and **SRM-II-5** were translated into Arabic by the researcher.
- Tools 1, 3, and 4 were tested for face validity by a jury of five experts in psychiatric nursing.
- A pilot study was carried out on 3 outpatients with BD to assess and ensure the clarity of the tools and identify any obstacles that may hinder the data collection. Those patients were excluded from the actual study subjects.

- The reliability of tools 2 and 3 was tested using Cronbach's alpha method on 5 outpatients who met the inclusion criteria.
- Records were reviewed to ensure patients' diagnosis and identify subjects who met the predetermined inclusion criteria.
- Patients were interviewed individually to establish rapport, explain the purpose of the study, and identify the disturbance in functional outcomes, social rhythm, and problem areas using the study tools.
- **The following steps were used to conduct the experimental part of the study:**

The application of Interpersonal and Social Rhythm Therapy (IPSRT) (Frank, 2005). It was initially developed by Klerman and colleagues (1984) to treat unipolar depression and modified by Frank (2005) to become IPSRT, geared toward stabilizing clients' routines while simultaneously improving the quality of their interpersonal relationships and their performance of crucial social roles. Through this approach, IPSRT aims to improve client's current mood and level of functioning and to provide them with the skills necessary to shield them from new affective episodes. IPSRT is composed of 12–14 sessions spread over 3 months. The client will be met individually once weekly in a comfortable, private room for 60–90 minutes per session, according to the client's ability to complete the session.

Ethical considerations:

- Informed written consent was obtained from the recruited patients or their accompanying persons after explaining the aim of the study.
- Data confidentiality was assured and respected.
- The patient's privacy was considered and respected.

- The patient's voluntary participation and the right to withdraw were respected.

Statistical analysis of the data

Data were coded, computerized, and then analyzed using the Statistical Package for Social Science (SPSS) software package version 23.0. Following data entry, checking and verification processes were carried out to avoid any errors during data entry. Numbers and percentages were used for describing and summarizing qualitative data. Minimum, maximum, mean, and standard deviation were used for describing and summarizing quantitative data. ANOVA with repeated measures followed by Adjustment Bonferroni for multiple comparisons between the three periods. The significance of the obtained results was judged at the 5% level.

Results

I. Distribution of the studied subjects according to their sociodemographic characteristics:

Table (I) presents the distribution of the studied subjects according to their sociodemographic characteristics. The total number of subjects for this study was 27 patients. The studied subjects ranging between 20 and 30 years constituted 51.9% of the total subjects, and those aged more than 30 years constituted 48.1 %, with a mean and standard deviation of 30.15 ± 7.33 . The percentage of male patients constituted 40.7% of the subjects, and female patients constituted 59.3%. Concerning their marital status, single subjects reached 66.7% of the total subjects, while married subjects amounted to 29.6%, and only 3.7% were divorced.

Regarding the studied subjects' educational level, patients with a university level of education represented 88.9 %, while those with a secondary level of education, a primary level, or only able to read and write constituted 3.7 % of the total studied subjects, respectively. Regarding subjects' occupations, 63% of the total subjects were unemployed, and 37% were employed.

Their monthly income was sufficient for about half of them (51.8%), and the other half mentioned that they had an insufficient income (48.2%). Concerning the place of residence, 70.4 % of the subjects were living in urban areas, while 29.7 were living in rural areas. As for the subjects' living conditions, 92.6 % of the subjects lived with their families, while 7.4% lived alone.

II. Distribution of the total subjects according to their clinical characteristics:

Table II presents the clinical characteristics of the subjects under study. The subjects were almost evenly split between the two types of bipolar disorders, with 51.9% diagnosed with Bipolar I and 48.1% diagnosed with Bipolar II. A significant majority, 88.9%, had no knowledge about their illness. The onset of the disease was almost evenly divided, with 51.9% diagnosed before age 20 and 48.1% diagnosed after. Concerning the studied subject's previous hospital admission, 51.9% have been previously hospitalized, while 48.1% had no prior admissions. Among those previously hospitalized (n= 14), 42.9% were hospitalized once, while only 28.6% were hospitalized twice or 3 or more times, respectively. The primary reason for the last hospitalization for 78.6% of the subjects was multiple social stressors, while noncompliance with medication and a combination of both reasons accounted for 7.1% and 14.3% of them, respectively. The most recent episodes experienced by the subjects varied, with 50% experiencing mania, 42.9% depression, and a small minority of 7.1% experiencing hypomania. Regarding the period of hospital stays, half of the studied subjects reported that they had spent less than two weeks at the hospital, while the other 50% reported that they had stayed there for two weeks or more. Regarding treatment, a vast majority of 88.9% were on medication, with a small percentage of 11.1% also receiving ECT in addition to medication. More than half of the study subjects (63.0%) were compliant

with their medication regimen, while 37.0% were not, primarily due to medication side effects, which were reported by a significant 80%. Regarding support systems, more than half of the subjects, 55.6%, reported having family and friends support, while the remaining 44.4% reported having no support.

Table III: Distribution of the studied subjects according to IPARS-M (n= 27).

Table III presents the distribution of the subjects under study according to the Interpersonal Problem Areas Rating Scale - Modified (IPARS-M). The table reveals that a more significant % of subjects, 55.6%, reported experiencing interpersonal deficiencies in the past or present, suggesting that this issue was more prevalent among the subjects under study. Interpersonal role conflicts were reported as a problem by 40.7% of the subjects. While 25.9% of the subjects identified unresolved grief as a significant issue, as well as loss of healthy self, which was reported by 25.9% of the subjects as well. Role transition was identified as a problem by 22.2% of the subjects.

Table IV compares the subjects studied using their SRM-II-5 scores. These scores were obtained at three different time points during the application of IPSRT for patients with bipolar disorder. The mean SRM-II-5 score at the first measurement was 2.91 ± 1.32 , significantly increasing to 4.89 ± 1.23 immediately post-intervention and 5.04 ± 1.21 one-month post-intervention. This indicates a substantial improvement in the social rhythm of the patients.

The effect size was significant at 83.2%, signifying a strong impact of the intervention. Statistical analysis revealed significant differences between the pre-intervention and immediate post-intervention scores and the one-month post-intervention scores ($P=0.001$ for both). However, there was no significant difference between the scores immediately post-intervention and one month post-intervention ($P=0.052$).

Table V shows a comparative analysis of the subjects studied based on their MCAS total scores. These scores and 4 subscales were obtained at three different time points during the application of IPSRT for patients with bipolar disorder.

The mean MCAS score at the first measurement was 55.52 ± 7.42 , significantly increasing to 68.67 ± 7.13 immediately post-intervention and slightly further to 68.74 ± 7.24 one-month post-intervention. This indicates a substantial improvement in the functional outcomes of the patients. The effect size was large at 90.2%, signifying a strong impact of the intervention. Statistical analysis revealed significant differences between the pre-intervention and immediate post-intervention scores and the one-month post-intervention scores ($P=0.001$ for both). However, there was no significant difference between the scores immediately post-intervention and one-month post-intervention ($P=1.000$). Concerning the total interference score with the functioning section, the mean score significantly improved from 19.2 ± 1.11 at the first measurement to 21.2 ± 1.4 immediately post-intervention and slightly further to 21.2 ± 1.46 one-month post-intervention. This indicates a substantial improvement in this section. The effect size was 62.6%. Statistical analysis revealed significant differences between the pre-intervention and immediate post-intervention scores and the one-month post-intervention scores ($P=0.001$ for both). However, there was no significant difference between the scores immediately post-intervention and one month post-intervention ($P=0.848$).

A significant improvement was observed in the total score of the Adjustment to Living section from 8.89 (SD=2.67) before implementing the IPSRT to 11.96 (SD=1.99) after immediate implementation and 11.96 ± 2.07 after implementing the IPSRT (post one month) with a statistically significant difference ($F=102.292$, $P=0.001$) and an effect size of 80.6%.

Meanwhile, no significant difference was found between immediate and one-month post-intervention ($P=1.000$). For the total social competence section three score, the mean score significantly improved from 12.04 ± 4.25 at the first measurement to 17.59 ± 4.0 immediately post-intervention and slightly further to 17.70 ± 4.04 one-month post-intervention.

In all areas, statistical analysis revealed significant differences between the pre-intervention and immediate post-intervention scores and the one-month post-intervention scores ($P=0.001$ for all). However, no significant differences existed between the scores immediately post-intervention and one-month post-intervention. Concerning the total score of behavioral issues section four, the mean score significantly improved from 15.41 ($SD=3.25$) at the first measurement to 17.89 ($SD=2.15$) immediately post-intervention and slightly further to 17.93 ($SD=2.34$) one-month post-intervention.

Discussion

Bipolar disorder is a severe, chronic mental illness characterized by dramatic fluctuations in mood, energy, activity levels, and the ability to carry out day-to-day tasks (American Psychiatric Association [APA], 2013). This disorder consists of alternating episodes of mania and depression interspersed with periods of relative stability known as euthymia. Pharmacotherapy with mood-stabilizing medications, such as lithium, remains the foundation of bipolar treatment (Geddes & Miklowitz, 2013). However, medication alone often provides incomplete protection against episode recurrence and residual symptoms (Crowe et al., 2010).

By integrating psychotherapeutic and pharmacological treatments, patients can be equipped with a comprehensive set of self-management skills to optimally manage their illness and pursue recovery. Delivering effective psychosocial therapies to improve functional outcomes and quality of life for those afflicted with bipolar disorder should, therefore, be an

urgent public health priority. The Interpersonal and Social Rhythm Therapy applied in the present study showed a potential effect on improving functional outcomes among bipolar patients.

The present study revealed that Interpersonal and Social Rhythm Therapy (IPSRT) improved statistically and significantly the stability of the participants' social rhythms immediately after the intervention and one month later, with a large effect size of 83.2%. These findings indicated that the improvements in social rhythm stability were sustained even after the intervention had ended, indicating the potential for long-term benefits. It is important to note that there were either no modifications to the medication or only minor adjustments for all the participants. The patient's heightened awareness serves as a diversion from the obsessive activity by acting as a distraction when the patient's anxiety level falls, and the patient spends less time. However, considerable time and effort were required to use the social rhythm metric scale II to stabilize the participants' daily rhythms. This could be attributed to the inherent difficulty of adapting to life changes with new responsibilities and duties.

Additionally, in our culture, stabilizing daily routines was challenging due to poor time management.

In contrast, other cultures apply this kind of therapy with a strict time limit for every daily routine task (Frank et al., 2005; Miklowitz et al., 2013; Inder et al., 2015). Moreover, a substantial portion of the participants in the present study had a long average duration of illness and a history of multiple prior hospitalizations. These frequent affective episodes and hospitalizations disrupted biological, social, occupational, and interpersonal functioning. These results corroborate previous randomized controlled trials demonstrating that IPSRT reduces episodes, hospitalizations, and symptoms while improving social rhythms and

functioning (Frank, 1999; Miklowitz et al., 2013; Inder et al., 2015). Furthermore, the 12-month study by Frank et al. (2005) found that mania/hypomania and depression symptoms were 45–50% lower for bipolar I patients who received IPSRT plus medication versus medication alone. Another trial on bipolar II patients showed that adding IPSRT to mood stabilizers decreased depressive episode duration by 4-fold versus medication monotherapy over 1 year (Swartz et al., 2017).

The study results reveal several vital benefits of IPSRT for improving functional outcomes in bipolar patients. Following 12 weeks of IPSRT, significant improvements were observed across all domains of MCAS immediately after the intervention and one month later, with a large effect size (90.2%). The most robust gains came in mood regulation. This improvement was statistically significant ($F = 51.089$, $P = 0.001$), with an effect size of a 66.3% increase in mood stability. The improvement observed in mood stability impacted all the functional outcomes domains. This may be explained by the fact that resolving interpersonal problems and improving social rhythm regularity has led to increased mood stability. Markowitz & Lipstiz's (2013) study mentioned that mobilizing and working collaboratively with the patient to *resolve* (better manage or negotiate) this interpersonal problem demonstrates enhancing social support, decreasing interpersonal stress, facilitating emotional processing, and improving interpersonal skills. Applying IPSRT resulted in a notable decrease in reactivity to stress and anxiety, with an effect size of 62.6%. This could be due to stabilizing biological rhythms and social zeitgebers that entrain the biological clock, which is achieved by scheduling daily routines (Hlastala et al., 2010). Restoring daily rhythm homeostasis may mitigate disruptions to neuroendocrine, neurotransmitter, and sleep-wake cycles that destabilize mood (Harvey, 2008).

Additionally, the enhancement of coping mechanisms and the resolution of interpersonal conflicts, as suggested by Miklowitz et al. (2008), might also play a role in reducing reactivity to anxiety and stress. Fulford et al. (2008) emphasized the significance of decreased mood variability and resilience to psychosocial stressors in maintaining functional recovery in bipolar disorder. Psychoeducation also enhances treatment compliance, which helps the patients to regulate and stabilize their mood.

In addition to improvements in mood, IPSRT also resulted in significant advancements in adjustments to living domains, an essential aspect of community integration. There was a marked improvement in the subjects' ability to manage finances, with an effect size of 57.0%, indicating a statistically significant enhancement. Moreover, improvements were also seen in self-care and household responsibilities. The average score for independence in daily life showed a statistically significant rise from before the intervention to after one month of implementing IPSRT, with an effect size of 66.5%. This could be related to the preliminary evidence that links IPSRT to increased prefrontal cortical activity and elevated brain-derived neurotrophic factor (BDNF) levels, which may strengthen neural circuits supporting executive functioning and emotion regulation (Miklowitz et al., 2008; Cahill et al., 2013). Executive functioning helps patients with bipolar disorder to meet their goals, put a plan, and initiate different tasks; its improvements will add not only to independence but to all occupational functioning as well.

Social competence emerged as another area of marked functional improvement after IPSRT. Compared to the baseline, participants demonstrated better social skills, greater interest and engagement in social activities, an increased size of social networks, and a higher frequency of meaningful interpersonal activities.

Strengthening social functioning and support is critical, given their protective role against stressful life events that can trigger bipolar episodes (Cohen et al., 2004). Robust social rhythms may also help stabilize biological rhythms through zeitgeber effects that modulate circadian gene expression (Grandin et al., 2006).

Conclusion

According to the findings of the present study, it can be concluded that the IPSRT can contribute positively to the improvement of functional outcomes and more regular social rhythm among patients with Bipolar disorder. Such improvement can enhance patients' social roles to control the mood associated with disturbances in social rhythm and loss of social roles.

Recommendations

In line with the findings of the study, the following recommendations are yielded: psychiatric nurses might consider incorporating IPSRT intervention as a crucial component in the care of patients with bipolar disorders. This should be associated with essential pharmacotherapy provided for those patients.

A great awareness of the patients' core patterns may represent additional information for the therapist, which is helpful for more accurate planning of the intervention project.

Families' psychoeducational interventions should be developed to increase their awareness about the illness and its triggering factors and strategies that involve them in therapy strategies and consequently affect the future response and behavior of the individual.

Limitations of study

The main limitation of this study is that the possibility of generalizing the results is limited because of the sample size. Therefore, it is recommended that the study be repeated with an even larger sample.

Table I: Distribution of the studied subjects according to their sociodemographic characteristics:

<i>Demographic data</i>	<i>No.</i>	<i>%</i>
Age		
20 – 30	14	51.9
>30	13	48.1
Mean ± SD	30.15 ± 7.33	
Gender		
Male	11	40.7
Female	16	59.3
Marital status		
Single	18	66.7
Married	8	29.6
Divorced	1	3.7
Education levels		
Read and write	1	3.7
Primary	1	3.7
Secondary	1	3.7
University	24	88.9
Subjects Occupation		
Employed	10	37.0
Unemployed	17	63.0
Monthly income		
Sufficient	14	51.8
Insufficient	13	48.2
Residence		
Urban	19	70.4
Rural	8	29.6
Living condition		
With family	25	92.6
Alone	2	7.4

TableII:Distribution of the total subjects according to their clinical characteristics

<i>Clinical data</i>	<i>No.</i>	<i>%</i>
Diagnosis		
Bipolar I	14	51.9
Bipolar II	13	48.1
Knowledge about illness		
Know	3	11.1
Don't know	24	88.9
Disease onset		
<20 years	14	51.9
≥20 years	13	48.1
Previous admission		
Yes	14	51.9
No	13	48.1
Number of previous admissions (n = 14)		
1	6	42.9
2	4	28.6
≥3	4	28.6
Reasons for last hospitalization(n = 14)		
Multiple social stressors	11	78.6
Noncompliance with medication	2	7.1
Both	1	14.3

Type of last episodes (n = 14)		
Depression	6	42.9
Mania	7	50.0
Hypomania	1	7.1
Number of hospital stays (n = 14)		
<2 weeks	7	50.0
≥2 weeks	7	50.0
Type of treatment (n = 27)		
Medication	24	88.9
Medication and ECT	3	11.1
Treatment Compliance (n = 27)		
Compliance	17	63.0
Noncompliance	10	37.0
Reasons for noncompliance (n = 10)		
Social stressors	1	10.0
Medication Side effects	8	80.0
Medication Side Effects and Self revenge	1	10.0
Supported persons (n = 27)		
Yes	15	55.6
No	12	44.4
If yes (n = 15)		
Family	14	93.3
Friends	1	6.7

TableIII: Distribution of the studied subjects according to IPARS-M (n= 27).

IPARS-M	Present		Absent	
	<i>No.</i>	<i>%</i>	<i>No.</i>	<i>%</i>
Interpersonal Deficiencies in the past or present	15	55.6	12	44.4
Interpersonal role conflicts	11	40.7	16	59.3
Unresolved Grief	7	25.9	20	74.1
Loss of Healthy Self	7	25.9	20	74.1
Role Transitions	6	22.2	21	77.8

IPARS-M: Interpersonal Problem Area Rating Scale- Modified

Table IV: Mean score of SRM-II-5Pre-, Immediate, and one-month after application of IPSRT.

SRM-II-5	Study group (n= 27)					
	Pretest		Immediate		Post-one month	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>MSD</i>	
	2.91	1.32	4.89	1.23	5.04 1.21	
F	96.632*					
P	<0.001*					
η²	0.832					
η²%	83.2%					
Sig. between periods	p1<0.001*, p2<0.001* , p3= 0.052					

Table V: Mean score of MCAS Pre-, Immediate, and one-month after application of IPSRT.

	Study group (n= 27)					
	Pretest		Immediate		Post-one month	
	M	SD	M	SD	M	SD
Section I Interference with Functioning	19.2	1.11	21.2	1.4	21.2	1.46
F						108.575*
P						<0.001
η ²						0.841
Sig. between periods						p ₁ <0.001*, p ₂ <0.001*, p ₃ =0.484
Section II "Adjustment to Living"	8.89	2.67	11.96	1.99	11.96	2.07
F						102.292*
P						<0.001
η ²						0.806
η ^{2%}						80.6%
Sig. between periods						p ₁ <0.001*, p ₂ <0.001*, p ₃ = 1.000
Section III- "Social Competence"	12.04	4.25	17.59	4	17.7	4.04
F						145.771*
P						<0.001
η ²						0.860
Sig. between periods						p ₁ <0.001*, p ₂ <0.001*, p ₃ = 0.980
Section IV "Behavioral Issues"	15.41	3.25	17.89	2.15	17.93	2.34
F						45.136*
P						<0.001
η ²						0.654
Sig. between periods						p ₁ <0.001*, p ₂ <0.001*, p ₃ = 1.000
Total score of MCAS	55.52	7.42	68.67	7.13	68.74	7.24
F						192.208*
P						<0.001
η ²						0.902
Sig. between periods						p ₁ <0.001*, p ₂ <0.001*, p ₃ = 1.000

F= ANOVA with repeated measures η²= Partial Eta Squire p₁: p-value for Adjustment for multiple comparisons: Bonferroni pre and Immediate p₂: p-value for Adjustment for multiple comparisons: Bonferroni pre and post-one-month p₃: p-value for Adjustment for multiple comparisons: Bonferroni Immediate and post-one-month * Statistically significant p-value at ≤0.05.

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