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Group psychoeducation for patients with bipolar disorder: a retrospective study on effectiveness in delaying relapse episodes and intensity

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Summary. Introduction. Group psychoeducation is effective in preventing relapse in bipolar disorder. It's indicated as an adjunctive intervention to pharmacotherapy for all outpatients. This retrospective, single center experience of group psychoeducation for bipolar disorder over a 6 years period, aims to assess severity of symptoms and comparative relapse episodes and intensity prior to and following psychoeducation as well as evaluating the decrease in hospitalizations and days of hospitalization. **Methods.** Between 2014 and 2019 patients with a bipolar disorder were invited to attend a Colom model group psychoeducation (weekly 90 minutes sessions for 22 weeks). Depression and mania were assessed at baseline, following psychoeducation, 6 months and 12 months with the Hamilton Depression Rating Scale (HDRS) and Young Mania Rating Scale (YMRS). Patient specific hospitalization admissions data for 3 years prior to and 3 years following psychoeducation course were accessed. Subgroup analyses were performed according to patient sex and age with ANOVA methodology. **Results.** Of the 95 eligible patients, 77 completed psychoeducation: 18 (19%) patients dropped out. Mean patient age was 45 years and 33 (43%) were male. Overall and subgroup specific YMRS and HDRS improved significantly throughout follow-up (p<0.01). Hospitalization analyses (45 patients; 58.4%) revealed a significant decrease in relapse and hospital stay days after psychoeducation, p<0.01. **Discussion.** We provide evidence of applicability and efficacy of adjunctive psychoeducation in a real-world setting. Advantages observed were independent of patient sex and age. Analysis of the optimal number of sessions provided to patients according to efficacy and retention rates is required. **Conclusions.** Despite inherent study design limitations, retrospective evaluation of a single-center psychoeducation program supports evidence of psychoeducation effectiveness in significantly reducing the severity of bipolar disorder and hospitalizations, despite a drop-out rate of 1 in 5.

Key words. Bipolar disorder, depression, hospitalization, psychoeducation, retrospective study.

Psicoeducazione di gruppo per pazienti con disturbo bipolare: uno studio retrospettivo sull'efficacia nel ritardare gli episodi e l'intensità delle ricadute.

Riassunto. Introduzione. La psicoeducazione di gruppo è efficace nel prevenire le ricadute nel disturbo bipolare. È indicato come intervento aggiuntivo alla farmacoterapia per tutti i pazienti ambulatoriali. Questa esperienza retrospettiva di psicoeducazione di gruppo per il disturbo bipolare per un periodo di 6 anni, condotta in unico centro, mira a valutare la gravità dei sintomi e gli episodi comparativi di ricaduta e l'intensità prima e dopo la psicoeducazione. **Metodi.** Tra il 2014 e il 2019 i pazienti con disturbo bipolare sono stati invitati a frequentare un percorso di psicoeducazione di gruppo modello Colom (sessioni settimanali di 90 minuti per 22 settimane). Depressione e mania sono state valutate all'inizio, subito dopo la psicoeducazione, a 6 mesi e 12 mesi con la Hamilton Depression Rating Scale (HDRS) e la Young Mania Rating Scale (YMRS). Sono stati consultati i dati relativi ai ricoveri ospedalieri specifici dei pazienti per i 3 anni precedenti e i 3 anni successivi al corso di psicoeducazione. Le analisi dei sottogruppi sono state eseguite in base al sesso e all'età dei pazienti con la metodologia ANOVA. **Risultati.** Dei 95 pazienti eleggibili, 77 hanno completato la psicoeducazione: 18 (19%) pazienti hanno abbandonato. L'età media dei pazienti era di 45 anni e 33 (43%) erano maschi. YMRS e HDRS totali e specifici dei sottogruppi sono migliorati significativamente durante il follow-up (p<0,01). Le analisi di ospedalizzazione (45 pazienti; 58,4%) hanno rivelato una diminuzione significativa dei giorni di recidiva e di degenza ospedaliera dopo la psicoeducazione (p<0,01). **Discussione.** Si forniscono evidenze circa l'applicabilità e l'efficacia della psicoeducazione in un contesto reale. I vantaggi osservati sono stati indipendenti dal sesso e dall'età del paziente. È auspicabile un'ulteriore analisi circa il numero ottimale di sessioni da fornire ai pazienti per quanto riguarda l'efficacia e la fidelizzazione. **Conclusioni.** Nonostante i limiti intrinseci del disegno dello studio, la valutazione retrospettiva di un programma di psicoeducazione in un unico centro supporta l'evidenza dell'efficacia della psicoeducazione nel ridurre significativamente la gravità del disturbo bipolare e dei ricoveri ospedalieri, nonostante un tasso di abbandono di 1 su 5.

Parole chiave. Bipolarismo, depressione, ospedalizzazione, psicoeducazione, studio retrospettivo.

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Introduction

Bipolar disorder is a mental disorder characterized by wide mood swing from high (mania) to low (depression). These changes range from mania to depression, and in severe situations, episodes may include psychotic symptoms (delusional ideations and/or hallucinations)[1]. Diagnoses are most common among adolescents and young adults, with an average age of onset being 25 years old[2], and are categorized according to 3 types (I, II and cyclothymic), depending upon intensity and duration of manic and depressive episodes[1,3]. Bipolar disorder is listed among the most frequent serious mental disorders, with a world-wide prevalence of 2.4%[4].

Psychoeducation, defined as «any intervention that educates patients and their families about their illness with a view to improving their long-term outcome»[5], can vary from the application of information about medication to improve patient therapeutical adherence through to more in depth approaches to education about coping strategies, early signs of relapse and lifestyle management[6]. Reviews have proven the effectiveness of group psychoeducation in preventing relapse[6], and more recently, have suggested its adoption, along with evidence-based pharmacotherapy, for all outpatients with bipolar disorder[7].

In response to the consensus document issued by the Italian Ministry of Health in 2014, stating that group psychotherapy should be routinely offered to both patients and their family members[8], the Psychiatry Operative Unit of Mantova, Italy, established a multidisciplinary team.

In Italy, these interventions are not yet part of the standard treatment guaranteed to eligible patients with a diagnosis of Mood Disorder; therefore it is not surprising to note, with respect to the prevalence in the population, the presence of a treatment gap (i.e. the difference between the ratio between the patients treated in the services and the people in the population who need treatment) estimated at around 42% in Lombardy, one of the largest Italian Regions. The Lombardy Region, in an effort to overcome the treatment gap, has included psychoeducation among the innovative programs pursued.

We present a retrospective, single center experience, of in depth psychoeducation for bipolar disorder initiated in 2014, with severity of symptoms follow-up and comparative relapse episodes and intensity data for the 3 years prior to, and following, a psychoeducation intervention.

Materials and methods

Design and setting

Data were retrospectively collected and stored in a dedicated study database. Patient age and sex and number of hospitalizations and relative hospital stay days were obtained from each patient's medical records, preserved in digital archives at our center.

Patients recruited were asked for consent for participation in the research.

Patient selection

Consecutive patients diagnosed at, or referred to, our center with type I or II bipolar disorder or cyclothymia were invited, by their referring psychiatrist or a member of the multidisciplinary team, to attend psychoeducation therapy, between 2014 and 2019.

Inclusion criteria:

- diagnosis of Type I or Type II bipolar disorder or cyclothymia;
- euthymia for 2-3 consecutive months assessed using the following scales: Hamilton Depression Rating Scale (overall score <8) and Young Mania Rating Scale (overall score <6).

Exclusion criteria:

- comorbidity with DSM-IV Axis I disorders;
- intellectual disability (IQ <70);
- brain lesions and deafness.

Patient assessment was performed by the referring psychiatrist or a member of the multidisciplinary team with Hamilton Depression Rating Scale (HDRS)[9] and the Young Mania Rating Scale (YMRS)[10].

Intervention

All patients received standard psychiatric care and pharmacological treatments. Furthermore, the Psychoeducation team was always available to be contacted by patients.

The team is composed of psychiatrist, psychologist, professional educator and nurse.

All members of the pyschoeducation team attended initial three-day training at the Fatebenefratelli Hospital, Brescia, Italy for psychiatrists, psychologist, educators based on psychoeducation according to the Colom and Vieta model.

Group psychoeducation

The group psychoeducation program at our center was developed according to the model proposed by Colom et al.[11], later hailed to be one of the "psychoeducation interventions of choice" following a systematic review of randomized controlled trials published in 2015[6]. This program has demonstrated to significantly reduce the five-year rate of number of hospitalizations and overall number of days in states of hypomania/mania/depression[11].

The protocol was structured over 22 weeks and was offered annually, with weekly sessions of 90 minutes. Sessions aimed to increase awareness of the dis-

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order through 5 main areas, including illness awareness, drug therapies, the importance of avoiding substance abuse, early signs of illness identification and the importance of a regular lifestyle (sleep hygiene, diet and physical activity). Patients were able to contact the psychoeducation team at any time.

At program completion, patients were motivated to invite their carers to participate in dedicated, educational sessions designed to increase awareness of disorder causation and manifestation, drug therapy and psychotherapies, and the importance of prodromes and their identification.

Baseline and outcome measures

Depression was assessed with the HDRS, a 17-item, clinician-rated instrument for severity assessment, with scores ranging from 0 to 52 (higher scores indicate worse depression severity). Mania was assessed with the YMRS, a 17-item scale where clinicians/patients report severity of symptoms, with scores ranging from 0-60 (higher scores indicate worse mania severity). Scoring was performed at baseline, after the 22-week session psychoeducation period, and at 6 and 12 months from psychoeducation completion. Patient specific hospitalization admissions data for the 3 years prior to intervention and the 3 years following psychoeducation course completion were accessed. Subgroup analyses were performed according to patient sex and age (< mean age).

Statistical analysis

Statistical analysis was performed with SPSS, version 27 (IBM Corp., Armonk, NY, USA). Continuous variables (mean, standard deviation [SD]) and categorical variables (frequency [n], percentage [%]) were considered. Differences between the means, were assessed with Student's t-test for paired data and HDRS and YMRS variance scores were analyzed in the various time frames (baseline, program completion, and at 6- and 12-months post-program) with the ANOVA method. A p<0.05 was considered significant.

Results

Patients meeting inclusion criteria at our center were recruited between 2014 and 2019. Data collection continued until December 2022. Among the 112 patients diagnosed with bipolar disorder and included in the research, 95 (85%) had accepted to participate in the psychoeducation program and were eligible for our retrospective study. The program was completed by 77 patients (81%). Of the 18 patients (19%) who dropped out due to severe relapses of the disorder or difficulties in managing group dynamics, 12 (67%) blamed work commitments for their inability to complete the program.

The mean patient age was 45 years old, and the patient cohort included 33 (43%) male subjects. At baseline, for all participating patients the overall mean YMRS score was 3.4±3.3 SD and mean HDRS score was 7.03±5.1 SD. During the study period, the YMRS and HDRS improved significantly, with reductions of 75.5% and 62.3% respectively (p<0.01) (figures 1 and 2). Further, according to patient gender and age groups, reductions were significant for each evaluation time point (table 1). ANOVA analysis revealed a significant difference for the 4 time points; males F=3.207, females F=11.764, age <45 F=7.890, and age >=45 F=6.187.

Due to incomplete data, 45 (58.4%) patients were included in the analysis of hospitalizations. The average number of hospitals stay days decreased significantly by 65.1%, from 1.7 to 0.5, p<0.01. The average number of hospitals stay days for all patients in the 3 years period following psychoeducation was significantly lower than the 3 years period preceding psychoeducation (15.2±29.1 SD vs 42.2±30.2 SD, p<0.001). According to patient gender and age groups, reductions were significant for each evaluation time point (table 1).

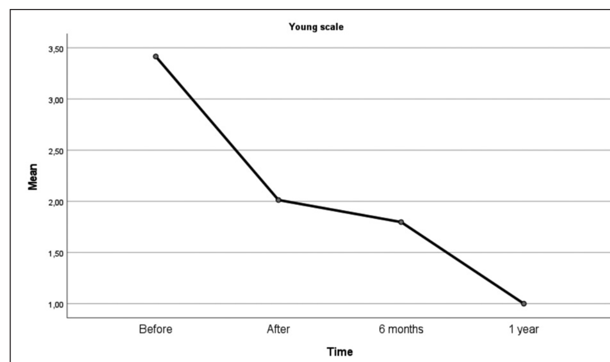

Figure 1. Young scale reports a statistically significant difference at each time point, F=13.942, p<0.01.

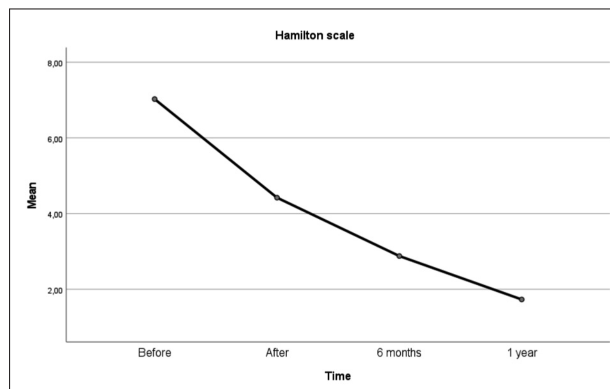

Figure 2. Hamilton scale is statistically different between the 4 time points, F=29.130, p<0.01.

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Table 1. Young Mania Rating Scale (YMRS) and the Hamilton's Depression Rating Scale (HDRS) for patient groups at baseline, post psychoeducation program, 6 months and 12 months post-program, and hospitalizations and hospitalization days for the 3 years period prior to the program and the 3 years period following the program.

	Young Mania Rating Scale *mean SD*					Hamilton's Depression Rating Scale *mean SD*					Hospitalizations *mean SD*			Hospitalization days, *mean SD*		
Variable	Baseline	Post-program	6 months post-program	12 months post-prprogram	*P value*	Baseline	Post-program	6 months post-program	12 months post-program	*P value*	Prior to program	Post-program (3 yrs)	*P value*	Prior to program	Post-program (3 yrs)	*P value*
All patients	3.4 ± 3.3	2.0 ± 2.1	1.8 ± 1.8	1.0 ± .5	*<0.01*	7.0 ± 5.1	4.4 ± 3.4	2.9 ± 3.1	1.7 ± .9	*<0.01*	1.7 ± .1	0.5 ± .8	<0.01	42.2 ± 30.1	15.2	*<0.01*
Male	2.5 ± .5	1.8 ± .8	2.0 ± .9	1.0 ± .6	*0.025*	6.9	4.0 ± 3.0	2.5 ± .7	1.8 ± .9	*<0.01*	2.1 ± .3	0.5	*0.009*	43 ± .9	13.1 ± .0	*0.021*
Female	4.1 ± 3.7	2.1 ± .4	1.6 ± .8	1.0 ± .3	*<0.01*	7.1	4.8 ± 3.7	3.2 ± .4	1.7 ± .0	*<0.01*	1.5	0.4	*<0.001*	41.3 ± 30.8	16.7 ± .5	*<0.001*
Age <45 yrs	3.6 ± 3.4	2.1 ± .3	1.7 ± .8	1.0 ± .4	*<0.01*	6.6 ± .7	4.4 ± .9	2.3 ± .1	1.9 ± .1	*<0.01*	1.5	0.7	*<0.001*	34.5 ± .2	17.1 ± .7	*0.048*
Age >45 yrs	3.3 ± 3.3	1.9 ± .0	1.9 ± .8	1.0 ± .6	*<0.01*	7.4 ± .4	4.4 ± .9	3.3 ± .7	1.6 ± .8	*<0.01*	1.8	0.3	*<0.001*	48.9 ± 35.8	13.4±30.7	*<0.001*

For the YMRS and HDRS the cohort included 77 patients. For the sub-analysis of hospitalizations, the cohort included 45 patients.

Discussion

Our study highlights a significant reduction in the severity of bipolar disorder episodes up to 12 months from the initiation of an adjunctive psychoeducation course and a significant reduction in the number and duration of hospitalizations over a 3 years period. Our real-life study also provides evidence of a 19% drop out rate.

Numerous studies have demonstrated the effectiveness of psychoeducation as an adjunctive treatment for bipolar disorder. Colom et al.[11] in a randomized controlled trial with a 5 years follow-up period, proved that a 6-month group psychoeducation has long-lasting prophylactic effects, with reduced time to any recurrence ($p<0.002$), fewer recurrences ($p<0.0001$), less time spent acutely ill ($p=0.0001$) and fewer number of days of hospitalization ($p=0.047$). A meta-analysis (including 39 randomized controlled trials) published in 2020 confirmed that, in outpatients with bipolar disorder, skills-based psychosocial interventions combined with pharmacotherapy may provide benefits in delaying illness recurrence[12]. Cuijpers et al.[13] in a network metanalysis, concluded that combined psychotherapy and pharmacotherapy is better for chronic and treatment-resistant depression than pharmacotherapy alone.

However, data available in literature is heterogeneous for patient selection, treatment execution and duration, and follow-up[12]. We provide further evidence of adjunctive psychoeducation for patients with any type of bipolar disorder for applicability and efficacy evaluations in real-world settings. Our data reveals a 19% drop out rate among patients initially agreeing to participate in psychoeducation. Bond & Anderson[6] report an overall drop-out rate of around 23-28%. However, Gonzalez-Isasi et al.[14] performed a study of high-risk patients over a five years period and reported a 0 drop out rate. Miklowitz et al.[12] and Bond & Anderson[6] both mention a correlation between higher study retention rates and brief psychoeducation programs, but greater efficacy of the program is identified in studies with a group format and more hours of therapy. Our study protocol involved 22 weekly sessions. An analysis of the optimal number of sessions provided to patients according to efficacy and retention rates is required.

Results from controlled study designs and settings are often difficult to generalize into real world settings[15]. At our center, psychoeducation was provided by a team of various medical professionals who had received initial training, but unlike many randomized controlled trials[7], no supervision was provided. Our data proves that, in a real-world setting, a 22 weekly session psychoeducation course provides the same benefits to patients with bipolar disorder

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as those identified in more controlled environments. Furthermore, most studies have been conducted in English speaking cultural environments, with the obvious exception of Spain. Our study provides evidence of the applicability of the program in an Italian cultural environment.

Our study proves that advantages of psychoeducation are independent of patient gender and age. Significant improvements were observed for all patient groups in both mania and depressive episode severities and in terms of hospitalizations and the length of the hospital stay. However, our assessment did not include any evaluation of, or provided by, the carers. Evidence suggests that carer knowledge is significantly increased following psychoeducation whilst their overall burden and psychological distress is reduced for up to 2 years, influencing in turn a higher perceived quality of life for the patient with bipolar disorder[16,17].

Limitations

The current study is limited by data availability. Firstly, the assessment of hospitalizations could only be carried out on 58% of the cohort due to data availability issues. Secondly, the difficulty of obtaining the data did not allow for the creation of a control group.

Our study does not consider effects of psychoeducation on medication adherence, medical knowledge, or analysis of benefit based on specific bipolar disorder diagnosis, mainly due to data availability and the small cohort size. Further, there is no analysis of any effect of carer involvement and whether this had any effect on the patients or any cost-analyses. Finally, our study cannot contribute to the question regarding which patient types are most likely to benefit from psychoeducation.

Conclusions

Despite inherent limitations of our study design, this retrospective evaluation of a single-center psychoeducation program supports evidence regarding the effectiveness of psychoeducation in significantly reducing the severity of bipolar disorder and hospitalizations, despite a drop-out rate of 1 in 5.

Ethical standards statement: the local ethics committee Val Padana provided approval to the study (research number 22-2022-OSS_ALTRO-MN8), 01/04/2022). This study adheres to the declaration of Helsinki.

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Data availability statement: the datasets generated and/or analyzed during the current study are not publicly available due to privacy regulations, but they may be made available on reasonable request.

Conflict of interests: the authors have no conflict of interests to declare.

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