Efficacy of Psychoeducation in Borderline Personality Disorder: Results of a Mirror Study

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Abstract:
Background and objectives: Personality disorders are increasing their prevalence in clinical population, and they use many resources that frequently are scarcely efficient. Group therapy has demonstrated its efficacy, but it has a high cost in time and personal resources. Psychoeducation has proved its efficacy for other diagnosis, but there are few studies that develop this approach. Some authors propose psychoeducation as an efficient pre-treatment in this population. Our objective is to evaluate if this intervention in Borderline Personality Disorder (BPD) patients could influence over the number of emergency room visits and / or psychiatric hospitalization days.

Methods: This is a mirror study comparing number of emergency visits and hospitalization days, during the previous and posterior six months to the psychoeducation group. These data are already compared relating to the assistance to that group (regular, irregular or never). Results: the patients that assist regularly to the psychoeducation group reduce their number of emergency visits and hospitalization days during the period after the participation. This effect is not observed in the other two groups, though the three groups have similar clinical data. Conclusions: Psychoeducation group seems to be cost-efficient in the treatment of patients with borderline personality disorder, reducing urgencies and hospitalization days and facilitating the inclusion in more exigent therapeutic groups.

Keywords: psychoeducation, borderline personality disorder, mirror study, group therapy.

Introduction
Personality disorders have seen increased their prevalence in Mental Health Attention in occidental environment (Azcárate et al., 2009; Azcárate et al., 2005). Among them, the more frequently diagnosed into mental health services is borderline personality disorder (BPD). In studies realized between 1997 and 2007 in general population, with samples over 250 people, prevalence of personality disorders has
been calculated between 4.4% and 19% (Chiclana, Rodríguez, & Aubá, 2010); so, more than 1 among 10 adults suffers a personality disorder (Torgersen, 2007). When those estimations are made among psychiatric population, prevalence increases widely, until 0.8% and 82% (Chiclana, 2010). The results of studies made into the clinical Spanish population estimate that the prevalence of personality disorders is between 3.7% and 91% (Chiclana, 2010).

Personality disorders are an important challenge for Mental Health Care, because among 5-10% of patients with a diagnosis of Borderline Personality Disorder (BPD) die due to a consummate suicide (Azcárate et al., 2009; Black et al., 2007; Paris, 2008; Paris, & Zweig-Frank, 2001), while suicidal attempts are even more frequent (Dubovsky, & Kiefer, 2014), being considered one of the most relevant reasons of consultation in emergency rooms into this population (Kolla, Eisenberg, & Links, 2008). So, epidemiological studies show that 60-70% of the patients with BPD carry out suicidal attempts and they will make 3.3 suicide attempts on average along their live (Soloff, & Chiappetta, 2012).

Patients suffering BPD consume a lot of resources due to these factors and frequently therapy results are frustrating. In ambulatory intervention of patients with BPD in Mental Health Centers, the most recommended practice is psychotherapy, individual or in group, as the mean treatment, with other approaches as psychopharmacologic treatment.

At present we dispose of several psychotherapeutic techniques that have demonstrated being effective for adequate treatment of BPD patients, with checked results in specialized literature, with systematized manuals to be used (Linehan, 2003; Mckay, Wood, & Bantley, 2017; Mosquera, 2004; Mosquera, 2013). In our program we use as a theoretical basis for the group psychotherapeutic treatment, the dialectical behavior approach, developed by M. Linehan.

However, due to the increase of prevalence of BPD and healthcare pressure, the sanitary system need to change and an approach could be starting with less demanding strategies in intensity and need of professional formation, that could fit in in the standards of the public health system (Ridolfi et al., 2019; Ridolfi, & Gunderson, 2018).

Psychoeducation has proved being effective in several axis I diagnosis (schizophrenia, bipolar disorder or depressive disorder). Despite this, there are few studies in patients with BPD (there are more of this type of studies in families of BPD patients (Ridolfi et al., 2019; Ridolfi, & Gunderson, 2018; Grenyer et al., 2019; Zanarini et al., 2018; Zanarini, & Frankenburg, 2008). In the literature the role of psychoeducation has been pointed out as important to improve therapeutic alliance, and establish realistic expectations around the treatment and prognosis. In the revised studies, the response seems to be good, mostly in moderate intensity disorders (Banerjee et al., 2006; Dittoesn et al., 2020).

In this study, we analyze the data related to our psychoeducation group for borderline personality disorder. The mean objective is to evaluate if this intervention in BPD patients have influence over the number of emergency room visits and / or psychiatric hospitalization days.

**Methods**

**Design**

This is an observational retrospective study with a mirror design. The index data is the day of the first session of the psychoeducation group. We revised data about urgent attention (in emergency room and also in mental health center) and hospitalization days, six months before and after this index day. To evaluate severity and equality among the groups we analyzed total hospitalization days, number of hospitalizations before the studied period and age at diagnosis.

**Sample**

We included all the patients that were derived to the program for group treatment for adults, diagnosed with borderline personality disorder or emotional instability disorder as mean diagnoses from the beginning of the
psychoeducation group (from March 2019 to October 2020). Data of 4 groups of psychoeducation were included.

**Intervention**

The intervention that we carried out was a group of psychoeducation, 6 sessions of a previously structured program, developed by the team members with literature support. The first analyzed groups made the psychoeducation group in person, but the last were online, due to the pandemic situation for the Covid-19 and the limitations of the capacity of the mental health center. We tried to manage information and therapy setting (duration, schedule, etc.) in a similar way between both situations.

**Analysis**

We included all the patients who were derived to the BDP program in our Mental Health Center, between March 2018 to October 2020, the group that participate and also those who finally didn’t assist. To compare data relating to hospitalizations and visits to emergency rooms or urgent visits, we have divided the patients who received the information and were offered to participate in psychoeducation into three groups: those who assisted to the psychoeducation group in a regular way, those who never came and those who came less than 50% of the sessions (irregular assistance).

Data were extracted from the revision of electronic clinical histories in the program Selene, after the participant patients signed the informed consent.

We have analyzed data of all the patients whom had been derived to the program since 2018, when the psychoeducation group began, until the end of 2020, though not all the patients enter the program. We have compared incidence of hospitalizations and urgent assistance rates before and after the group into the three groups of patients (regular assistance, irregular assistance or never) as among those three groups.

To evaluate the possible difference among the groups relating to the severity of the disorder, we have analyzed the age of onset of the disorder, number of hospitalizations, and the total days of hospitalization stay before the period that was evaluated in the mirror design (previous 6 months and subsequent 6 months to the psychoeducation group).

We used the statistical pack SPSS 21 to analyze the results.

**Results**

The informative brochure designed for the program was given during clinical interviews in all the psychiatric and psychological consultations of our Mental Health Center to all patients diagnosed from BDP and finally 63 of them were invited to assist to the psychoeducation group. The sample was composed of 63 people. 23 of them never got to go to the group (36,5%). 40 patients began the psychoeducation group, 12 of them did not come in a regular way, less than half of the days (19%) and finally 28 people assisted in a regular way (44,4%). The reasons to not going to the group were: refusal to do, change of address, incompatibility of schedules or impossibility to locate the patient for the citation.

Relating to sociodemographic data, 90,5% of the sample was composed of female (57), and 9,5% (6) were male, which is similar to the figures that are given in the literature about this disorder (Paris, & Zweig-Frank, 2001; Dubovsky, & Kiefer, 2014). We have analyzed the age when the patients were derived, age of onset (first contact with any Mental Health Service) and as a way to estimate the severity of the disorder, the number of hospitalizations and the total days of hospitalization previous to the initial period of the mirror analysis. We found no statistical significant differences among the three group neither in the age of onset, the number of previous hospitalizations or days of hospitalization, age of derivation, number of hospitalizations or urgent assistance.
### Table 1. Clinical Data of the Total Sample

<table>
<thead>
<tr>
<th></th>
<th>Range</th>
<th>Media</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>20-64</td>
<td>35.9</td>
<td>11.5</td>
</tr>
<tr>
<td>Age of onset</td>
<td>6-57</td>
<td>23.9</td>
<td>11.2</td>
</tr>
<tr>
<td>Nº Hospitalizations</td>
<td>0-18</td>
<td>1.9</td>
<td>3.5</td>
</tr>
<tr>
<td>Days of hospitalization</td>
<td>0-714</td>
<td>55.6</td>
<td>143.6</td>
</tr>
</tbody>
</table>

### Table 2. Clinical Data of Subgroups Related to Group Assistance

<table>
<thead>
<tr>
<th>Assistance</th>
<th>Age Age of onset Nº Hospitalizations Days of hospitalization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
<td>35 ± 8.91 21,48 ± 9,46 1,39 ± 2,62 39,1 ± 145</td>
</tr>
<tr>
<td>Irregular</td>
<td>34,17 ± 13,94 23,25 ± 10,35 2,67 ± 4,41 59,8 ± 99,1</td>
</tr>
<tr>
<td>Regular</td>
<td>37,39 ± 12,35 26,25 ± 12,78 2 ± 3,73 67,3 ± 160</td>
</tr>
</tbody>
</table>

We observed in all the subgroups, related to group assistance, a reduction in number of urgent visits (except the irregular assistance group) as the days of hospitalization during the second period of observation, after the index data, compared to the previous 6 months. These differences were only statistically significant for the group of regular assistance (reduction of urgent visits from 0.96 to 0.42 and of days if hospitalization from 2.5 to 0.71) (Table 3). We used the t-Student test for paired samples.

### Table 3. Clinical Data Variation into Each Group. Mirror Analysis

<table>
<thead>
<tr>
<th>Assistance</th>
<th>Previous emergencies</th>
<th>Posterior emergencies</th>
<th>p-value</th>
<th>Previous hospitalization days</th>
<th>Posterior hospitalization days</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
<td>0.91 ± 1.2 (0-5)</td>
<td>0.35 ± 0.71 (0-3)</td>
<td>0.02</td>
<td>3.87 ± 10.8 (0.44)</td>
<td>0.74 ± 2.8 (0-13)</td>
<td>0.11</td>
</tr>
<tr>
<td>Irregular</td>
<td>0.17 ± 0.39 (0-1)</td>
<td>0.42 ± 1.16 (0-4)</td>
<td>0.39</td>
<td>7.33 ± 16.5 (0.56)</td>
<td>3 ± 7.12 (0-21)</td>
<td>0.25</td>
</tr>
<tr>
<td>Regular</td>
<td>0.96 ± 1.31 (0-5)</td>
<td>0.42 ± 0.87 (0-4)</td>
<td>0.02</td>
<td>2.5 ± 5.23 (0-18)</td>
<td>0.71 ± 2.35 (0-9)</td>
<td>0.04</td>
</tr>
</tbody>
</table>

We have made an analysis among the groups, comparing the emergencies (at hospital and Mental Health Center) and hospitalization days, age of onset, number of hospitalizations and hospitalization days to observe if there were differences among the groups that could justify the results of the mirror analysis.

Comparing data related to emergency visits and hospitalizations among the three groups, we observed that the number of previous emergencies in the irregular assistance group is significantly lower than the other two groups (p=0.048 in the comparison between this and the regular assistance and p=0.045 to the no-assistance group). We have observed no differences in derivation age or age of onset, number of hospitalization or days of hospitalization among the three groups, and no differences also in the mirror analysis data (previous/posterior emergencies and previous/posterior hospitalizations) among the three groups.

In table 4 were data about days of hospitalization and emergencies before and after the psychoeducation group among the different assistance groups, with the t-Student test for paired sample, considering as statistically significant p<0.05 (Table 4).
### Table 4. Comparison of Clinical Data Among the Groups

<table>
<thead>
<tr>
<th>Assistance</th>
<th>Previous emergency</th>
<th>p</th>
<th>Posterior emergency</th>
<th>p</th>
<th>Previous hospitalization</th>
<th>p</th>
<th>Posterior hospitalization</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Irregular (12)</td>
<td>0.17±0.39</td>
<td>.048</td>
<td>0.42±1.16</td>
<td>.97</td>
<td>7.33±16.52</td>
<td>.17</td>
<td>3±7.12</td>
<td>.13</td>
</tr>
<tr>
<td>Regular (28)</td>
<td>0.96±1.32</td>
<td></td>
<td>0.43±0.88</td>
<td></td>
<td>2.5±5.23</td>
<td></td>
<td>0.71±2.35</td>
<td></td>
</tr>
<tr>
<td>Irregular (12)</td>
<td>0.17±0.39</td>
<td>.045</td>
<td>0.42±1.16</td>
<td>.83</td>
<td>7.33±16.52</td>
<td>.17</td>
<td>3±7.12</td>
<td>.18</td>
</tr>
<tr>
<td>Never (23)</td>
<td>0.74±2.8</td>
<td>.88</td>
<td>0.35±0.71</td>
<td>.72</td>
<td>3.87±10.88</td>
<td>.55</td>
<td>0.74±2.8</td>
<td>.97</td>
</tr>
<tr>
<td>Never (23)</td>
<td>0.91±1.2</td>
<td></td>
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<td>0.71±2.35</td>
<td></td>
</tr>
</tbody>
</table>

### Discussion

The emergency assistance and days of hospitalization rates decrease in those patients that had come regularly to the psychoeducation group, in both analysis: intragroup mirror analysis and when are compared with the irregular group. As among the groups there are no differences in clinical data, the differences that are observed could be due to the assistance to the group. Patients who didn’t came or did it in an irregular way frequently are experimenting changes in their life, not strictly related to the clinic, as changes or beginning working activity, address changes, or precontemplative attitude to the group therapeutic approach.

The group of patients that never came to psychoeducation present a lower number of hospitalization days than the other two groups. The differences are not statistically significant, probably due to the high dispersion of this data. This situation could point to that the patients do not assist because their functionality is higher (p.ej. schedule incompatibility due to work) or because their disorder is less severe and they do not recognize it in the informative brochure. In some cases, they are patients that have just begun the treatment and are not became linked with the area.

The high dispersion of the hospitalization days could be explained because we have included days of stay in the specific unit for Personality Disorders into the Dr. Rodríguez Lafora, in Madrid. This unit has a structured program of 180 days of stay and it is indicated for severe personality disorders. The hospitalization in that unit point to high grade of severity.

In our program, the psychoeducation group is a necessary requirement to be included into the therapeutic group, that we developed in the Mental Health Center, with a manual based in Dialectical Behavioral Therapy (DBT), modified by our team. The objective of this filter is double: firstly, that the patients could have an initial information about the disorder and what they can wait about the treatment, and secondly for the team to know the level of implication and compromise of the patients. In some cases, from this psychoeducation group the patient does not pass to this type of therapy, but they are derived to the group which we have called accompaniment group, with a lower level of complexity and demand. These both groups consume much more resources, because of its duration, as for the number of sessions of each patient. So that, some authors recommend to reserving the longest and more intensive interventions only for those patients that do not respond to briefer interventions (16,17,19–21).

The psychoeducation group seems to have improved clinical “hard” indexes, as the number of the hospitalization days and the visits to emergency room or urgent visits in Mental Health Center (MHC), into the group that have assisted regularly, though we cannot observe differences among the subgroups. So, this intervention can be efficient in results and in resource costs.

Zanarini et al (2018), postulate that the intervention is more efficient when it has done early after the diagnosis. There are many persons that cannot have access to an intensive and specialized treatment or can access only after a long time, so that psychoeducation can be useful and cost-efficient as pretreatment approach.
An important percentage of the patients did not get to participate in the psychoeducation group in a regular way. This fact could be related to personal circumstances as patients that are included in the program too early without enough information about the diagnosis in the visits, Schedule incompatibility, difficulties to deal with a group approach, change of address or difficulties to arrive to the center, and also with the public health situation, because part of the last groups had to be developed online, what impairs the implication in treatment.

So that, we consider that it would be very interesting to follow with the study of the efficacy of this intervention in larger samples.

Conclusions

1. The psychoeducation group seems to be effective decreasing the number of visits to emergency room and urgent visits to Mental Health Center, and also reducing the number of hospitalization days in the group of patients that participate in a regular way.

2. The psychoeducation group can be an effective and cost-efficient intervention in the initial treatment of BPD patients in public mental health services, that usually have few resources.

3. Derivation to the longest group treatment according to the participation in the psychoeducative group could improve the efficacy and results of therapy.

4. It would be more efficient to improve the results of the program that the derivation was actually agreed with the patient, which would increase the participation and the program could be offered to a wider population of patients.

It is necessary to develop studies with larger samples and adding clinical scales before and after the group to determine the real efficacy of psychoeducation, though the preliminary results are promising. Another limitation of the study is the difficulty to make the group in person due to the clinic situation from the Covid-19 pandemic, what could limit the adherence to the group of the patients.

Ethical Considerations

The patients have signed an informed consent and the work was approved by the Investigation Commission of the Infanta Sofía Hospital in San Sebastián de los Reyes (Madrid-Spain) where we develop the study.

Funding and Conflict of Interest

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