DIFFERENTIATION OF DYSPHORIA: A PRELIMINARY INPATIENTS STUDY TO DIFFERENTIATE BORDERLINE PERSONALITY AND BIPOLAR DISORDER SPECTRUM

Massimo C. Bachetti, Francesca Brufani, Giulio Spollon & Patrizia Moretti
Division of Psychiatry, Department of Medicine, University of Perugia, Perugia, Italy

SUMMARY

Background: Differentiating Borderline Personality Disorder (BPD) from Bipolar Disorder (BD) represents a very difficult challenge for clinicians. Dysphoria could be a possible key to differentiate these disorders. We currently define dysphoria as a complex and disorganized emotional state with proteiform phenomenology, characterized by a multitude of symptoms. Among them irritability, discontent, interpersonal resentment and surrender prevail. These dimensions can be detected using the Neapen Dysphoria Scale - Italian version (NDS-I). Dysphoria role in BPD has been highlighted by the recent theorization of the Interpersonal Dysphoria Model, according to which dysphoria could represent the “psychopathological organizer” of the BPD. On the other side, dysphoria role in BD has not yet been established. This is simply considered as an aspect, and not fundamental, of the symptomatology characterizing BD, especially in mixed states patients. The phenomenological analysis of the dimensional spectrum of dysphoria within BPD and DB could provide a valuable aid in the differential diagnosis between BPD and BD.

Aims: The aim of this paper is to verify if the dimensional spectrum of dysphoria differs between Borderline Personality Disorder (BPD) and Bipolar Disorder Spectrum (BD) through an observational comparative study

Subjects and methods: In this study, 65 adult patients, males and females between the ages of 18 and 65, were enrolled from the Psychiatric Service of the Santa Maria della Misericordia Hospital in Perugia (PG), Italy, from January 1st 2018 to April 30th 2019. We have formed 2 groups. A BPD group composed of 33 patients (19 female patients, representing approximately 57.6 % of the sample) and a BD group composed of 32 patients (18 Female patients, representing approximately 56.2% of the sample). Patient’s comorbid with BD and BPD have been excluded from the study. After a preliminary assessment to exclude organic and psychiatric comorbidity, and after at least 72 hours from hospitalization, we administered them the Neapen Dysphoria Scale - Italian Version (NDS-I), a specific dimensional test for dysphoria. Starting from the dataset, with the aid of the statistical program SPSS 20, we have carried out a comparison between disorders groups selected and their NDS-I total score and subscales (irritability, discontent, interpersonal resentment, surrender); For this we have used the Mann-Whitney U test, a nonparametric test with 2 independent samples, by setting a significance level p<0.05.

Conclusions: This study allowed us to explore and analyze dysphoria dimensions expressions in BPD and BD. Despite the small sample analyzed, the results show a significant different dimensional spectrum expression of the dysphoria between the two disorders. In particular, irritability and Interpersonal Resentment dimensions show greater interest in BPD than BD spectrum. Further studies with a larger and stratified sample are needed to confirm these results.

Key words: dysphoria - borderline personality disorder - bipolar disorder - NDS-I - neapen dysphoria scale italian version

INTRODUCTION

Differentiate Borderline Personality Disorder (BPD) from Bipolar Disorder (BD) represents a very difficult challenge for clinicians.

Despite many clinicians and researchers claim that the DPB belongs to the spectrum of bipolar disorder (Akiskal 2004, Perugi et al. 2013), several studies have been carried out in the attempt to find a valid diagnostic instrument that could easily distinguish these two disorders.

To date there are not genetic, imaging or blood tests that have provided such accuracy values to be considered biomarkers of differentiation between BPD and BD (Paris & Black 2015).

Our principal aim is not providing a clinical instrument to obtain this differentiation but analyzing the quantitative and qualitative expression of dysphoria dimensions within these disorders that can be useful in the next future to helping clinicians to obtain a possible clinical tool for a differential diagnosis (Moretti et al. 2018). Only studying these variations of dysphoria dimension between BPD and BD patient groups we can think to move forward in the direction to considering dysphoria dimensional spectrum analysis a possible key feature to differentiate these two disorders.

Our group have already studied the possible different expression of dysphoria dimensions in three different psychopathological disorders (Moretti et al. 2018), but the three samples was too small for a valid and generalized conclusion.

This time, using a similar paradigm, we want to enlarge the samples by focusing on BPD and BD and observing the expression of their dysphoria patterns.

DYSPHORIA

A Possible Definition

The word “dysphoria” came into English from the Ancient Greek word δυσφορία (dysphoria), which means “excessive pain”. The Greek word itself is a compound
noun: it’s made up of two Greek words δυσ- (dus-, “bad”) and φρέω (phrēō, “I bear, carry”).

Its usage in heterogeneous clinical areas contributes to the lack of clarity and imprecision that hovers around the specific meaning of the term itself.

Usually, the term is used to indicate a generic state of dissatisfaction and affective instability, characterized at the same time by anxiety and depression, without any specific feature. This wide range of situations in which this term is applied often implies an implicit and shared meaning, with no need of definition.

We have already tried to define dysphoria, in our previous work (Moretti et al. 2018), as a complex and disorganized emotional state with proteiform phenomenology characterized by a multitude of symptoms: irritability, discontent, interpersonal resentment and surrender (Starcevic et al. 2007, 2013). Dysphoria appears to be an unstable and unpredictable “entity”. Generally, we consider it as a temperamental tract, but its manifestation arises in response to environmental stimuli, especially to adverse ones, from which it is often modulated.

**Dimensions of Dysphoria**

Generic traits apart, dysphoria could be characterized exquisitely by three specific components: tension, irritability and urge (D’Agostino et al. 2016).

Tension is a condition of strong emotional pressure caused by defection of the mood, chronic and undefined unhappiness and extremely extended and persistent discontent, which leads the subject to surrender. In addition, there is a persistent state of oppressive, often ambivalent, painful expectation of the present and the future.

Irritability refers to a state of constant and annoying restlessness, worry and incessant anxiety. Similar to a sensation of adversity towards the world that leads the subject to assume a suspicious, hostile and resentful attitude towards the environment and the people around him.

Urgе, finally, is characterized by impatience and intolerance, by an irresistible need to act, which often leads to the appearance of self-harm behaviour. The action, in the dysphoric patient, is always a violent action; violence not necessarily with a physical meaning, but rather referred to the great intensity of emotions that invest the subject. The patient tries to get out from his discomfort state through the action, thus trying to modulate, in some way, the dysphoric state.

**NDS-I a New Clinical Tool for a New Dysphoria Approach**

As reported in our last work (Moretti et al. 2018), to differentiate various dysphoria dimensions, we need a new test capable to detect the shades of dysphoria spectrum. In our opinion, the best test suited for this job seems to be, in our opinion, the Neapen Dysphoria Scale - Italian Version (NDS-I). It has been translated and adapted in Italian by D’Agostino et al. in 2016 and represents the Italian version of the homonymous NDS introduced in Australia by Starcevic et al. in 2007. This auto-administered test consists of 24 items in Likert scale from 0 to 4. At the end of the test it is possible to obtain a specific Total Score, that provides a rough assessment of the degree of dysphoria, and additional scores divided into 4 subscales that represent the dimensions of the dysphoria (irritability, discontent, personal and interpersonal resentment, renunciation / surrender). The test has not any cut-off and represents a dimensional, non-nosographic tool. That means, hopefully, that it might show the severity of the symptomatology and above all if some domains are more involved than others. Unfortunately, it has not been validated yet on a large scale. Although the psychometric properties are excellent for the healthy population, they have not been verified yet in the pathological population (D’Agostino et al. 2016).

**Dysphoria Phenomenology in Borderline Personality and Bipolar Disorder Spectrum**

Many clinicians and researchers considered dysphoria as a nonspecific psychopathological phenomenon inscribed in a multitude of psychiatric disorders (D’Agostino et al. 2017) including, for example, Bipolar Disorder (BD), in particular Mixed-States, Major Depressive Disorder (MDD), Post-Traumatic Stress Disorder (PTSD), Feeding and Eating Disorders (FED), Personality Disorders where Borderline Personality Disorder (BPD) occupies a privileged position, but also in others generic neurological and medical disorders.

This point of view represents a superficial generic vision of the dysphoria’s manifestations, especially if we focus on its different dimensional expression in these various disorders.

Considering BPD dysphoria appears to be a characterizing and disabling psychopathological element. BPD patient suffers continuous disturbances of his affective sphere. These disturbances are characterized by behavioral reactions often disproportionate and inadequate compared to the real gravity of the stimulus event. Dysphoria fits between subjective perception and behavioral response.

Dysphoria replaces the normal neuromodulatory mechanisms that leads a healthy subject to separate the real distance between the severity of the external objective event and the severity of the representation of the same event to provide an adequate response. Thus, we can imagine that if these modulator mechanisms fail, or become dysregulated, the inability to control one’s emotions prevails. These can be so amplified as to make the subject a slave to his emotions and to their continuous variability base on environmental stimuli. In severe cases, the subject, who over time has learned to identify him-self with the emotional reactions elicited by external event, ends up losing the boundaries between the Self and the object (Moretti et al. 2018).
In BD disorder, dysphoria seems to play an important role during manic phase and in the Mixed-State. This one seems very similar to BPD (Perugi et al. 2016), often is very difficult to differentiate these disorders only with clinical interview. Dysphoria phenomenology for BD is unknown yet. Our aim is trying to study its spectrum to highlighting any differences compared with BPD.

**Bordeline Personality and Bipolar Disorder: A Comparison**

Looking at the recent scientific literature we must highlight the difficulty that many researchers and clinicians have in marking a clear demarcation line between Borderline Personality and Bipolar Disorder Spectrum.

Despite the very large number of studies on this topic the scientific community has yet to clarify if BPD represents a part of the wider Bipolar Spectrum (Perugi et al. 2013), or if it has its own phenomenology. It is even less clear the comorbidity interrelation between these two nosographic identities; epidemiological comorbidity data shared by many authors tends not to correspond: some authors sustain a 20% prevalence (Fornaro et al. 2016, Frías et al. 2016), others show a prevalence as close as 14% (Brieger et al. 2003), some other declares a prevalence as low as 3.6% (Di Giacomo et al. 2017). Because of these differences, some author supports the extreme conviction that a dichotomic vision of these two disturbs is not useful in the everyday clinical practice.

The difference shown in the data above probably reflects the difficulty clinicians have in clinically differentiating symptoms overlapping between BPD and BD, e.g. mood instability or impulsivity (Völhringer et al. 2016). In addition to this we would remark how difficult could be making a differential diagnosis in the short times required, for example, in an inpatient clinic. In fact, in a psychiatric ward, it is hard to immediately differ these two disorders in a patient with a new onset right because of this overlapping. In 2016 editorial three characteristics were considered to be fundamental in order to differentiate BPD and BD: childhood sexual abuse, repeated self-harm, depersonalization (Ghaemi 2016). Particularly the author supported the presence of childhood sexual abuse in the patient history as an important factor helping the clinician in the diagnosis of BPD compared to BD.

Certainly, traumatic events, not only sexual ones, significantly contribute in the development of BD, but this is not the only element involved and many patients do not have such a history, mainly because reluctant to talk about it, but also because they didn’t have such traumatic events. It is important to consider as well one more difficulty when facing patients with traumatic event in their history: the overlapping symptoms between BD and PTSD.

This summary wants to show the necessity of finding new tools that could help clinicians easily differentiating patients affected by these two disturbs in order to start a correct and prompt treatment (Bassett et al. 2017).

To do so, many authors, suggest the use of tests in addition to clinical interview which is still to consider the gold standard (Völhringer et al. 2016, Mneimne et al. 2017, Di Giacomo et al. 2017).

Our aim is to show how the clinical dimension of dysphoria could be a helpful tool, useful in differentiating BPD and BD, as already shown in our preliminary work (Moretti et al. 2018).

**Aims**

The primary goal of this work, starting from the positive results of our previous work (Moretti et al. 2018) with a larger patient’s sample, is to verify if the dimensional spectrum that composes dysphoria differs between Borderline Personality Disorder (BPD) and Bipolar Disorder Spectrum (BD) through an observational comparative study.

**SUBJECTS AND METHODS**

In this study, 65 males and female patients affected by Borderline Personality Disorder (BPD) and Bipolar Disorder Spectrum (BD) between the ages of 18 and 65, were enrolled from the Psychiatric Unit of the Santa Maria della Misericordia Hospital in Perugia, Italy, from January 1st 2018 to April 30th, 2019. We have formed 2 groups. A BPD group consisted of 33 patients (19 female patients, representing approximately 57.6% of the sample), and a BD group consisted of 32 patients (18 female patients, representing approximately 56.2% of the sample).

Once eligible patients were identified, we proceeded carrying out their history and clinical information, through clinical interview and using other clinical tools like Structured Clinical Interview for DSM-5-Clinical Version (SCID-5-CV) to detect major psychiatric disorders, the Structured Clinical Interview for DSM - II (SCID-II) and Minnesota Multiphasic Personality Inventory - 2 (MMPI-2), to detect personality disorders.

After selecting patients with BPD or BD, those who had other medical, psychiatric comorbidities and current history of substance use were excluded from the study to avoid confounding factors.

Patients agreed to give their informed consent according to the current EU regulations on privacy through an information talk and related information form, with the possibility for patients to withdraw at any stage of the study.

Once the consents were obtained we continued administering the NDS-I test to the patients, prior instructing them in its correct compilation. NDS-I test was given to patients at least after 78 hours from the hospitalization, to avoid that the disorder’s burst phase could alter test results. After that, we collected and re-pro-
cessed the patients tests in a specific database. Since the NDS-I test is a dimensional tool there is no cut-off, therefore, its goal is not to define whether a subject is dysphoric, but rather showing which dysphoria domains are more relevant. To do that we extrapolated the scores of the individual items expressed on the Likert scale and we calculated the scores of the four subscales as indicated by D’Agostino et al. 2016.

The data obtained have been reported in a specific database. Because of the small size of the samples, it has been decided to avoid the division by gender and to consider males and females indiscriminately within the reference group. Starting from the dataset, with the aid of the statistical program SPSS 20, we obtained data showing the comparison between the two groups selected and NDS-I total score and subscales.

Finally, we took the scores of NDS-I subscales and total scores for each group and then we compared these values. We did it using the Mann-Whitney U test, a nonparametric test with 2 independent samples, by setting a significance level $p<0.05$.

**RESULTS**

At first, we obtained graphs from data. From these we tried to highlight some differential dimensional aspects between the expression of the total score and the various subscales of the NDS-I between BPD and BD patient’s groups.

In Figure 1 we can see how the group of BPD patients has a higher total score, therefore a higher declared degree of dysphoria, compared to the other group in line with our predictions.

In Figure 2 we have analyzed the dimension of irritability. In this dimension, BPD group showed a greater grade of irritability compared with BD patients.

In Figure 3 we can observe a substantial overlap between the two disorders groups linear diagram regarding the discontent dimension.

In Figure 4, analyzing the interpersonal resentment, we noticed a very important difference between the expression of this dimension in the BPD group compared with BD group, larger than a previous study (Moretti et al. 2018).

**REFERENCES**

NDS-I TOTAL SCORE

Figure 1. Comparison between groups of patients and the NDS-I Total Score

IRRITABILITY

Figure 2. Comparison between groups of patients and the NDS-I Irritability Subscale Score

DISCONTENT

Figure 3. Comparison between groups of patients and the NDS-I Discontent Subscale Score

INTERPERSONAL RESENTMENT

Figure 4. Comparison between groups of patients and the NDS-I Interpersonal Resentment Subscale Score

SURRENDER

Figure 5. Comparison between groups of patients and the NDS-I Surrender Subscale Score
Table 1. Arithmetic mean of the scores of the NDS-I test with reference to the BPD an BD groups

<table>
<thead>
<tr>
<th></th>
<th>Borderline Personality Disorder</th>
<th>Bipolar Disorder</th>
</tr>
</thead>
<tbody>
<tr>
<td>NDS-I Total Score Mean</td>
<td>73.72</td>
<td>60.81</td>
</tr>
<tr>
<td>Irritability Score Mean</td>
<td>28.24</td>
<td>23.22</td>
</tr>
<tr>
<td>Discontent Score Mean</td>
<td>18.30</td>
<td>12.35</td>
</tr>
<tr>
<td>Interpersonal Resentment Score Mean</td>
<td>15.96</td>
<td>10.44</td>
</tr>
<tr>
<td>Surrender Score Mean</td>
<td>11.21</td>
<td>9.25</td>
</tr>
</tbody>
</table>

Table 2. Confrontation between BPD and BD groups using U Mann-Whitney test with a significance level p<0.05

<table>
<thead>
<tr>
<th></th>
<th>NDS Total Score</th>
<th>NDS Irritability</th>
<th>NDS Discontent</th>
<th>NDS Interpersonal Resent</th>
<th>NDS Surrender</th>
</tr>
</thead>
<tbody>
<tr>
<td>U di Mann-Whitney</td>
<td>98,500</td>
<td>172,000</td>
<td>479,000</td>
<td>121,500</td>
<td>326,000</td>
</tr>
<tr>
<td>Sig. Asint. 2 tails (significance level)</td>
<td>0.000</td>
<td>0.000</td>
<td>0.514</td>
<td>0.000</td>
<td>0.008</td>
</tr>
</tbody>
</table>

In Figure 5, we observe a significant prevalence of the surrender dimension in BPD patients compared to BD group. In this case data appears more widespread and clinically not worthy of value.

In Table 1 we have translated and resumed in numerical language what we have analyzed until now, arithmetic means it’s been calculated to show the same differences saw in graphs analysis. In particular, if we pay attention to means values for each subscale, the different dysphoria expression is easily understandable in these two disorders, even if only qualitatively.

At last, data obtained with Mann-Whitney U test, resumed in Table 2, shows that the two disorders group presents a different distribution of the values within the individual subscales. The differences in the statistical analysis confirm the qualitative observation previously made. We observe a very strong significant statistically difference in BPD group regarding NDS-I Total score, Irritability and Interpersonal Resentment subscales compared with BD group.

Study Limitations

This paper shows several limitations. First, the very low amount of data from the literature about NDS-I test. This limits our observations to our sample, making any review and meta-analysis impossible to prove or deny our results.

The second limitation concerns the small number of samples taken into consideration, thus the impossibility of carrying out a gender differential analysis. For this reason, the study does not presume to be exhaustive and complete, rather as a preliminary work to be implemented over time. Consequently, data obtained must not be considered definitive but suggestive for future works. Future work must aim to improve gender sample to observe the reproducibility of our results in a large divided sample composed by BPD and BD male and female patients.

Referring to the small number of samples, we decided to utilize the U Mann-Whitney test instead T Student Test because we were at limit boundaries of normal statistical population, but there was too much difference between two groups. Gender and age were too widespread. Next studies must consider this problem and make more homogeneous samples.

The third limitation concerns the NDS-I test. This test, as already mentioned in a precedent work (Moretti et al. 2018), has not been validated yet in Italy and its psychometric properties have been evaluated exclusively in a sample of healthy subjects. This test was selected to respond to the studies aim to analyze dysphoria dimensions construct and there is no other test currently validated by the literature with these characteristics.

Finally, it must be considered that in a clinical setting it is often difficult to observe symptoms phenomenological continuity over time. In this regard, NDS-I should be administered several times during the hospitalization, but also in the psychiatric territory services once the patient has been discharged, to detect significant variations in this continuity. In this study, due to the short hospitalization of enrolled patients, a re-test could not be performed. Next works must take in account this important aspect.

CONCLUSIONS

This study allowed us to explore dysphoria’ expressions in patients affected by Borderline Personality and Bipolar Disorder. Despite the small samples size differences between means of the two groups values obtained through NDS-I subscales were statistically significant (p<0.05). These preliminary data showed that BPD patients have a greater pervasiveness and severity dysphoria symptoms compared to BD patients. In particular, Irritability and Interpersonal Resentment dimensions show greater interest in BPD than BD spectrum.

Although it has been reported in a recent study that the self-report measures presented a limited value for the differential diagnosis (Fowler et al. 2019), NDS-I could be a good adjunct tool for clinical diagnosis and follow-up to prevent possible relapses.
Indeed, in this case we have proposed NDS-I test as an aid to differential diagnosis between BPD and BD, but the utility of this type of instrument could be in patient’s follow up with the aim of detecting a possible early relapse. This possible use as secondary prevention instrument must be studied yet, but if our predictions will be confirmed by other studies this test could have obvious positive implications on patient’s management, not only for diagnostic stage. NDS-I test being a dimensional tool does not pretend to objectify the patient’s experience. The result must always be interpreted based on the subjective experience of the person facing the clinician, even within a dimensional approach.

Acknowledgements: None.

Conflict of interest: None to declare.

Contribution of individual authors:
Massimo Claudio Bachetti conceived and designed the study.
Massimo Claudio Bachetti & Giulio Spollon wrote the first draft of the manuscript.
Massimo Claudio Bachetti & Francesca Brufani performed statistical analyses.
Massimo Claudio Bachetti, Francesca Brufani, Giulio Spollon & Patrizia Moretti visited patients and carried out clinical work.
Massimo Claudio Bachetti, Francesca Brufani & Giulio Spollon conducted testing.
Massimo Claudio Bachetti, Francesca Brufani & Patrizia Moretti discussed results.
Massimo Claudio Bachetti, Francesca Brufani, Giulio Spollon & Patrizia Moretti supervised the writing of the manuscript; all authors approved the final version of the manuscript.

References


Correspondence:
Patrizia Moretti, MD
Division of Psychiatry, Department of Medicine, University of Perugia
Piazzale Lucio Severi, 1, 06132, S. Andrea delle Fratte, Perugia (PG), Italy
E-mail: patrizia.moretti@unipg.it