

## DYSPHORIA AS A PSYCHIATRIC SYNDROME: A PRELIMINARY STUDY FOR A NEW TRANSNOSOGRAPHIC DIMENSIONAL APPROACH

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### SUMMARY

**Background:** We currently define dysphoria as a complex and disorganized emotional state with proteiform phenomenology, characterized by a multitude of symptoms. Among them prevail irritability, discontent, interpersonal resentment and surrender. Dysphoria, in line with the most recent Interpersonal Dysphoria Model, could represent a “psychopathological organizer” of the Borderline Personality Disorder. We would like to extend this theoretical concept to other psychiatric disorders in order to consider dysphoria as a possible psychopathological nucleus, a syndrome on its own. This syndromic vision may open up the possibility of new paths both in the differential diagnosis and in the therapeutic approach to the various disorders.

**Aims:** The goal of this paper is to understand if the dimensional spectrum that composes dysphoria differs from the different psychiatric disorders. Specifically, we would like to assess if the phenomenological expression of dysphoria differs in patients with Borderline Personality Disorder (BPD), Mixed State Bipolar Disorder (BDM) and Major Depressive Disorder (MDD) through an observational comparative study.

**Subjects and methods:** In this study, 30 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 1<sup>st</sup> to June 30<sup>th</sup>, 2018. The aim was to form 3 groups each one composed of 10 individuals affected respectively with Borderline Personality Disorder (BPD), with Bipolar Disorder, Mixed State (BPM) and Major Depression Disorder (MDD). After a preliminary assessment to exclude organic and psychiatric comorbidity, 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 obtained graphs showing the comparison between disorders groups selected and NDS-I total score and subscales (irritability, discontent, interpersonal resentment, surrender). Finally, a comparison was made, taking two groups at a time, between the means of single groups for total scores and for single subscales considered into the NDS-I test. We made it using the Mann-Whitney U test, a nonparametric test with 2 independent samples, by setting a significance level  $\alpha=0.05$ .

**Conclusions:** This study, through a transnosographic-dimensional approach, allowed us to explore dysphoria and its expressions in different psychopathological groups, despite analyzing a small sample. Differences between means of values obtained through NDS-I subscales were statistically significant in patients with BPD, BDM and MDD ( $p<0.05$ ). Among the latter, the group of BPD patients has greater pervasiveness and severity of dysphoria symptoms.

**Key words:** dysphoria – borderline personality disorder – mixed state bipolar disorder – major depressive disorder – transnosographic approach - neapen dysphoria scale Italian version

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### INTRODUCTION

The word “dysphoria” came into English from the Ancient Greek word δυσφορία (dusphoría), which means “excessive pain”. The Greek word itself is a compound noun: it’s made up of two Greek words δυσ- (dus-, “bad”) and φέρω (phérō, “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 and its relative conceptual indeterminacy often implies an implicit and shared meaning, with no need of definition.

We currently define dysphoria 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, Starcevic, Rossi Monti, D’Agostino 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

Alongside these general traits, 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 deflection 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.

Urge, 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.

### **Dysphoria phenomenology in Borderline Personality Disorder**

However, in most of the current literature this psychopathological phenomenon is described as nonspecific and is inscribed within a multitude of psychiatric disorders including, for example, Major Depressive Disorder (MDD), Mixed States of Bipolar Disorder (BPM), Post-Traumatic Stress Disorder (PTSD), Feeding and Eating Disorders (FED) and Personality Disorders belonging to cluster B where Borderline Personality Disorder (BPD) occupies a privileged position.

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

Dysphoria replaces the normal neuromodulatory mechanisms that leads a healthy subject to separate the real distance between the severity of the objective external event and the severity of the representation of the same in order to provide an adequate response. Thus, we can imagine as if these modulatory mechanisms fail, or become dysregulated and the inability to control one's emotions prevails. These can be so amplified as to make the subject a slave to them, of their continuous variability according to environmental stimuli. In severe cases, this 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.

### **Dysphoria as syndrome**

According to D'Agostino A., Rossi Monti M. and Starcevic V. who proposed the Interpersonal Dysphoria Model, dysphoria could represent a "psychopathological organizer" of BPD could represent a "psychopathological organizer" of the BPD (D'Agostino et al. 2017).

We would like to extend this theoretical concept to other psychiatric disorder in order to consider dysphoria as a possible psychopathological nucleus, a syndrome on its own. This hypothesis derives not only from the above speculative considerations, but also from the clinical evidences that the symptomatic grouping commonly defined as dysphoria, represents a clear transnosographic element, manifesting itself with various facets and degrees of expression. Furthermore, in addition to personality disorders, even some major psychopathological disorders such as PTSD have affective and behavioural patterns that we cannot define in any other way than dysphoric. If the term manages to describe behavioural and affective pictures so complex, our theory is that it should not be considered a simple symptom affecting the various disorders in which it manifests itself and is deeply rooted. In support of this hypothesis, DSM-5 too has recognized for the first-time dysphoria like as a separated nosographic entity defining Gender Dysphoria and Premenstrual Dysphoria.

Such syndromic vision may open up the possibility of new paths both in the differential diagnosis and in the therapeutic approach of the various disorders as well. Although, the differential diagnosis among certain mood disorders, personality disorders, PTSD etc., often causes problems for clinicians. Consequently, having a psychometric tool capable of providing dimensional analysis of dysphoria could help the clinician to distinguish more easily and earlier these pathological states.

### **NDS-I for new approach to dysphoria**

To reach this aim, it is necessary a psychometric test which, starting from a dimensional construct, turns out to detect if the subject is dysphoric, but "how" the subject is dysphoric. The test better responding to such features seem to be the Neapen Dysphoria Scale – Italian Version (NDS-I). It has been translated and adapted in Italian by D'Agostino et al. (2016) and represents the Italian version of the homonymous NDS introduced in Australia by Starcevic et al. (2007). This auto-administered test consists of 24 items in Likert scale from 0 to 4. At the end of the test you can get 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). This is the reason why our group, in collaboration with other terms, next months,

is undertaking validation of this tool, hoping to be useful for clinicians and researchers (Starcevic et al. 2015, Berle, Starcevic et al. 2012, Berle, Starcevic et al. 2018).

## AIMS

The goal of this paper is to understand whether the dimensional spectrum that composes dysphoria differs from the different psychiatric disorders. Specifically, we would like to assess if the phenomenological expression of dysphoria differs in patients with Borderline Personality Disorder (BPD), Mixed State Bipolar Disorder (BDM) and Major Depressive Disorder (MDD) through an observational comparative study.

## SUBJECTS AND METHODS

In this study, males and females' patients 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 1<sup>st</sup> to June 30<sup>th</sup>, 2018. They were divided into 3 groups each one composed of individuals respectively affected by Borderline Personality Disorder (BPD), Mixed State Bipolar Disorder (BPM) and Major Depression Disorder (MDD).

Once eligible patients were identified, we proceeded then carrying out their history and clinical informations, 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 obtaining the diagnoses related to the groups we were interested in, the patients presenting with organic comorbidities, overlapping among the major psychiatric disorders, personality disorders and with double diagnosis were excluded from the study.

At the end, the patients enrolled in the study were 30 divided in groups of 10 patients: the BPD group, the BDM group and the MDD group.

The 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. After that, we collected and re-processed the patients tests in a specific database.

As the NDS-I test is a dimensional tool does not have a cut-off, therefore, its goal is not to define whether or not a subject is dysphoric, but rather to show which dysphoria domains are more interested than others. In order to do that we have 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 have obtained graphs showing the comparison between the disorders groups selected and NDS-I total score and subscales

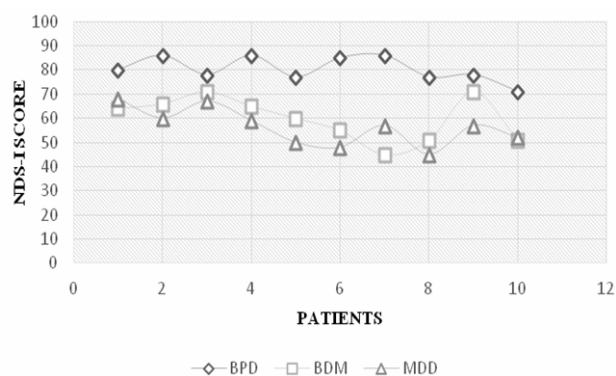
Subsequently, in order to provide a quantitative imprint, we have calculated arithmetic means of each NDS-I subscales for each group of patients. As a result, we have calculated the average percentage too.

Finally, we took the NDS-I subscales and total scores' means of each group and then we have compared these values between them, considering two groups at time. We did it using the Mann-Whitney U test, a nonparametric test with 2 independent samples, by setting a significance level  $\alpha=0.05$ .

## RESULTS

Analyzing the graphs obtained we tried to highlight some differential dimensional aspects between the expression of the total score and the various subscales of the NDS-I in the disorders examined.

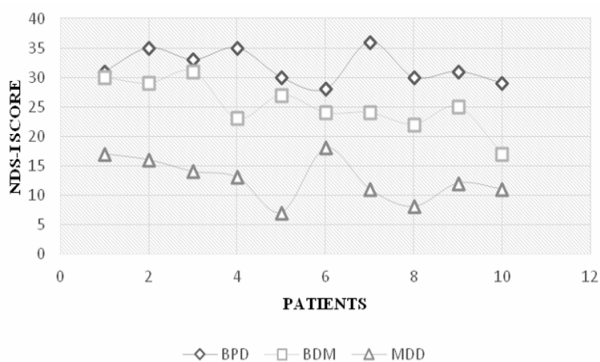
In Figure 1 we can see how the group of BPD patients has a higher total score, therefore a higher declared degree of dysphoria, compared to the other two groups that do not tend to have statistically significant differences, in line with our predictions.



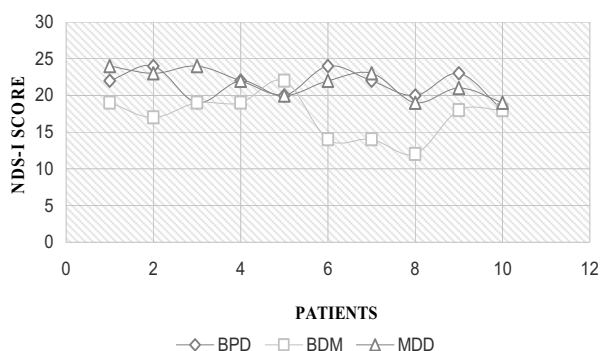
**Figure 1.** Comparison between the groups of patients and the NDS-I Total Score

In Figure 2 we are going to analyze the dimension of irritability. In this dimension, BPD and BDM groups appear to have a higher trend of irritability traits than depressive states.

In Figure 3 we can observe a substantial overlap between the three disorders groups in regard to the discontent. However, the DBM group shows a slight lower score, resulting unexpected as we would have expected such a result in patients affected by MDD, compared to other groups.



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



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

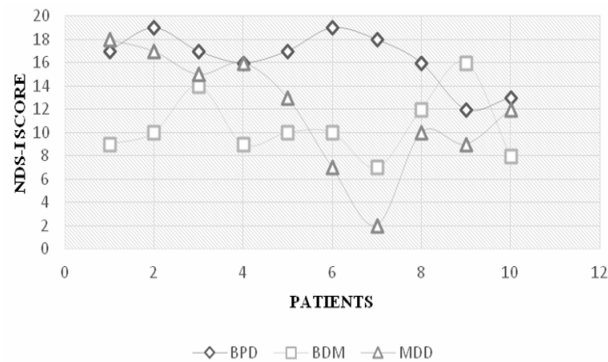
In Figure 4, analyzing the interpersonal resentment, we notice a statistically significant difference between the expression of this dimension in the BPD group, with a higher score than the remaining two groups.

In Figure 5, we observe a statistically significant prevalence of the surrender dimension in MDD patients compared to the other two groups. It is worth noticing that there is a greater difference in the BDM group rather than the BPD one.

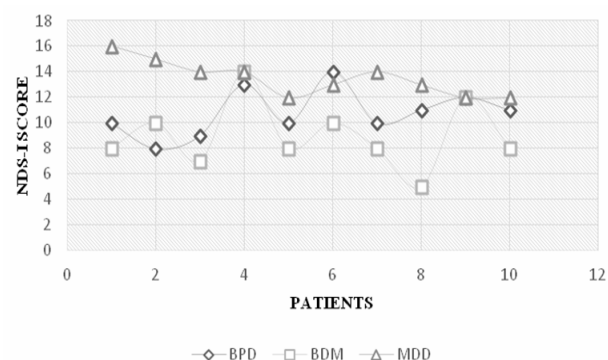
In Table 1 we have translated in numerical language what we have already analyzed previously in the graphs. In particular, if we pay attention to averages percentages it is easily understandable the different dysphoria expression in these disorders, even if only qualitatively.

The data obtained with Mann-Whitney U test shows that the 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.

Comparing the scores between BPD and BDM patients, before the experiment we expected to obtain a substantial overlap between the degree of irritability and the total score, with a possible variation in the interpersonal resentment subscale. Whereas, the study shows a great difference ( $p < 0.001$ ) between the two groups regarding total score, irritability and interpersonal resentment in favor of the BPD group. The difference in the score of the subscale discontent is also significant ( $p < 0.05$ ), again in



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



**Figure 5.** Comparison between the groups of patients and the NDS-I Surrender Subscale Score

favor of BPD patients. No difference was found in the surrender dimension ( $p > 0.05$ ) as shown in Table 2.

In Table 3, comparing BPD and MDD patients, same differences can be remarked: the highest, as expected, is the subscale irritability with  $p < 0.001$ . What did not surprise us is the lack of any statistically significant difference between the mean subscale discontent score of MDD patients compared to BPD ones.

Comparing score means of the BDM and MDD groups, we have obtained a significant statistically difference for the irritability and discontent subscales ( $p < 0.001$ ). As illustrated in Table 4, the difference results higher for the MDD groups. In the surrender subscale results show a statistically significant difference ( $p < 0.05$ ) for the same group even with a minor statistical strength. On the other hand, the difference between the total scores means of the two groups shows no significant differences ( $p > 0.05$ ).

These results could be indicative for a possible differential criterion in the expression of dysphoria and would also demonstrate that this is not just a nonspecific symptom, but a real syndrome with a variety of expressions of its dimensional domains within different psychiatric disorders.

In particular, what emerges from these data is how dysphoria permeates the DBP and this could lead us to consider the hypothesis of dysphoria as the psychopathological nucleus founding this disorder.

**Table 1.** In this table are resumed means and average percentage of each pathological group for each NDS-I subscales

Groups	μIRRIT	μDISC	μINT RES	μSURR	μTOT SCORE
BPD	31.8 (45.6%)	21.4 (35.5%)	16.4 (42.3%)	10.8 (32.4%)	80.4
BDM	25.2 (36.2%)	17.2 (28.5%)	10.5 (27%)	9 (27.1%)	59.9
MDD	12.7 (18.3%)	21.7 (36%)	11.9 (30.7%)	11.5 (40.5%)	56.3
μTOTAL	69.7 (100%)	60.3 (100%)	38.8 (100%)	33.3 (100%)	

**Table 2.** Comparison between means of BPD and BDM subscales scores

	Total Score	Irritability	Discontent	Interpersonal resent	Surrender
U di Mann-Whitney	1.000	9.500	11.000	5.500	26.000
Sig. Asint. a 2 code	0.000	0.002	0.003	0.001	0.065
Significatività esatta [2*(Significatività a 1 coda)]	0.000	0.001	0.002	0.000	0.075

**Table 3.** Comparison between means of BPD and MDD subscales scores

	Total Score	Irritability	Discontent	Interpersonal resent	Surrender
U di Mann-Whitney	0.000	0.000	46.000	20.000	12.000
Sig. Asint. a 2 code	0.000	0.000	0.759	0.022	0.004
Significatività esatta [2*(Significatività a 1 coda)]	0.000 <sup>b</sup>	0.000 <sup>b</sup>	0.796 <sup>b</sup>	0.023 <sup>b</sup>	0.003 <sup>b</sup>

**Table 4.** Comparison between means of BDM and MDD subscales scores

	Total Score	Irritability	Discontent	Interpersonal resent	Surrender
U di Mann-Whitney	38.500	1.500	8.000	37.000	8.000
Sig. Asint. a 2 code	0.383	0.000	0.001	0.323	0.001
Significatività esatta [2*(Significatività a 1 coda)]	0.393 <sup>b</sup>	0.000 <sup>b</sup>	0.001 <sup>b</sup>	0.353 <sup>b</sup>	0.001 <sup>b</sup>

### Study limitations

This paper has several limitations. First of all, 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 from it must be considered as a transitory and, on the other hand, suggestive to continue the work.

The second limitation concerns the NDS-I test. This test, as already mentioned, has not been validated yet in Italy and its psychometric properties have been evaluated exclusively in a sample of healthy subjects. The test was selected to respond to the study's aim to analyze the dysphoria dimensions construct and there was no other test currently validated by the literature with these characteristics. Furthermore, our group is willing to validate this test on a national scale and this experience has also served us to test the compliance of so-called difficult patients in its administration, with satisfactory results.

Finally, these data should be read as a research area, as in a clinic it is often difficult to observe, especially in BPD patients, a phenomenological continuity stable over time. In this regard, NDS-I should be administered several times during the hospital stay, but also in the territory once the patient has been discharged. After data collection, through of a longitudinal study, more indicative data could be obtained from a clinical point of view.

### CONCLUSION

This study, through a transnosographic-dimensional approach, allowed us to explore dysphoria and its expressions in different psychopathological groups, despite analyzing a small sample. Differences between means of values obtained through NDS-I subscales were statistically significant in patients with BPD, BDM and MDD ( $p < 0.05$ ). Among the latter, the group of BPD patients has greater pervasiveness and severity dysphoria symptoms.

The possibility of identifying this different dimensional expression could open new clinical and research scenarios. In particular, if the data will be confirmed by other studies, by expanding the comparison to other psychiatric disorders, this study could provide to the clinician an instrument that allows them to perform early differential diagnoses among the various disorders with obvious positive implications on patient's management. This will be made easier thanks to tools like the NDS-I. It is exactly for this reason that our group considers necessary and indispensable to validate the NDS-I test on a national scale, perhaps as a multicentric study. Obviously, all this must never be to the detriment of the individuality and subjectivity of the patient's symptoms that we are facing, which often results hardly inscribed even within a dimensional approach.

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**Conflict of interest:** None to declare.

**Contribution of individual authors:**

Patrizia Moretti & Massimo Claudio Bachetti conceived and designed the study and wrote the first draft of the manuscript;

Patrizia Moretti, Massimo Claudio Bachetti & Alfonso Tortorella performed statistical analyses;

Patrizia Moretti, Massimo Claudio Bachetti & Tiziana Sciarma visited patients and carried out clinical work;

Massimo Claudio Bachetti & Tiziana Sciarma conducted testing;

Stefano Ferracuti & Martina Curto wrote portions of Methods;

Patrizia Moretti, Massimo Claudio Bachetti & Alfonso Tortorella discussed results;

Patrizia Moretti, Massimo Claudio Bachetti, Tiziana Sciarma & Alfonso Tortorella supervised the writing of the manuscript; all authors approved the final version of the manuscript.

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