

# A BODY TO NOT FEEL DYSPHORIA IN FEEDING AND EATING DISORDERS: SOCIO-DEMOGRAPHIC AND CLINICAL CORRELATES OF DYSPHORIA IN FEEDING AND EATING DISORDERS

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## SUMMARY

**Background:** Food-related problems in Feeding and Eating Disorders (hereafter referred to as eating disorders – EDs) might be considered as the expression of dysfunctional individual and relational patterns based on emotional and behavioral dysregulation. Dysphoria is a transnosographic syndrome found in a multitude of psychiatric disorders including EDs, our cross-sectional study aims to analyze its presence in Anorexia Nervosa (AN), Bulimia Nervosa (BN) and Binge Eating Disorder (BED) to define its socio-demographic, clinical correlates and phenomenological expression in the three types of EDs.

**Subjects and methods:** A total of 165 patients were recruited from March 2019 to November 2024. Anamnestic history was collected through a specific form. The Italian version of the Nepean Dysphoria Scale (NDS-I) was used to evaluate Dysphoria. After performing descriptive analyses, one-way ANOVA and Pearson's *r* test were performed to respectively assess between-group differences and correlations. Significance was defined as  $p < 0.05$ .

**Results:** AN presented the highest degree of Dysphoria than the three, BED the lowest. Older age, physical illnesses and ongoing medical therapy correlated with lower levels of Dysphoria. A Statistically significant positive correlation was found in smoking habits, association with another psychiatric disorder, especially with anxiety disorder, use of benzodiazepines (BDZ) and use of antipsychotics (AP).

**Conclusions:** Dysphoria acquires fundamental importance within EDs, possibly having a specific role in the etiology and maintenance of eating behaviors, it might play a core role in this type of mental disorder, with the behavioral aspect aimed at reducing dysphoric anxiety. Understanding these connections could represent a useful tool for the comprehension of EDs, which are increasing and have always represented a great diagnostic and therapeutic challenge.

**Key words:** eating disorders – dysphoria - socio-demographic - psychiatric comorbidity - smoking

**Abbreviations:** EDs - Feeding and Eating Disorders; BD - Bipolar Disorder; MDD - Major Depressive Disorder; AD - Anxiety Disorder; AN - Anorexia Nervosa; BN - Bulimia Nervosa; BED - Binge Eating Disorder; PTSD - Post-Traumatic Stress Disorder; NDS - Nepean Dysphoria Scale; NDS-I - Nepean Dysphoria Scale, Italian Version; BDZ – Benzodiazepines; APs - Antipsychotics

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## INTRODUCTION

Feeding and Eating Disorders (hereafter referred to as Eating Disorders – EDs) are defined by persistent disturbance in eating behavior resulting in an altered consumption or absorption of food, with significant compromise of health and psychosocial functioning (Selvini Palazzoli 2005). Possible comorbidities in EDs include Bipolar Disorder (BD), Major Depressive Disorder (MDD), Anxiety Disorders (AD), and Personality Disorders. However, their clinical presentation varies across the three main categories of EDs - Anorexia Nervosa (AN), Bulimia Nervosa (BN), and Binge Eating Disorder (BED) (Pelle et al. 2021) – each defined by distinct personality traits and different patterns of emotional perception and regulation (Gaudio & Dakanalis 2023). Dysphoria is an unstable and unpredictable entity used to indicate a generic state of dissatisfaction and mood instability, featuring anxiety and depression at once (D'Agostino et al. 2016), experienced as prolonged, unmotivated, indi-

stinct and almost inexplicable feelings, not linked to a specific object, leading to a vague set of impulses, sensations and perceptions that permeate the entire field of consciousness (Stanghellini & Mancini 2018). Generally considered as a temperamental trait, its phenomenological expression emerges in response to adverse environmental stimuli, resulting in their modulation (D'Agostino et al. 2016). Dysphoric actions are violent in intensity and urgency rather than physically, aimed at escaping from a passive state (Moretti et al. 2018). Dysphoria is found in MDD, Mixed States of BD, Post-Traumatic Stress Disorder (PTSD), EDs and Personality Disorders, especially Cluster B (Moretti et al. 2018). It can be seen as a clinical transnosographic syndrome manifesting itself with varying degrees of expression in different disorders: a previous preliminary study (Moretti et al. 2018) explored Dysphoria in different psychopathological groups showing that the kind of Dysphoria experienced and expressed in a patient with Borderline Personality Disorder is phenomenologically different from BD and

MDD. Hilde Bruch (1973) has noted how perception, understanding and regulation of emotions can play an important role in the genesis and maintenance of EDs (Montecchi 2016). Food-related problems might be seen as expression of dysfunctional, individual and relational patterns based on emotional and behavioral dysregulation (Cimbolli et al. 2017), eating habits and compensatory behaviors could have the purpose of modulating unpleasant affective states (Witaszek et al. 2023). Our study aims to analyze the presence of Dysphoria in AN, BN and BED and to define its different phenomenological expression in the three ED categories.

## SUBJECTS AND METHODS

In our cross-sectional study we recruited 165 patients with AN, BN and BED from March 2019 to November 2024 at the Psychiatric Diagnosis and Treatment Service (SPDC) of Santa Maria della Misericordia Hospital/USL Umbria 1 (Perugia), the Outpatient Clinics of the S.C. of Psychiatry, Clinical Psychology and Psychiatric Rehabilitation of the Santa Maria della Misericordia Hospital (Perugia), territorial centers such as the ED Center of Todi, the Center for Uncontrolled ED of Città della Pieve and the Mental Health Centers of the USL Umbria 1 We included patients aged between 13 and 45 and with a good knowledge of the Italian language. Serious cognitive deficit (defined by a MMSE score <19) or civil incapacity were considered as exclusion criteria. Clinical history of the included patients was collected by clinicians through a specific form designed for the study, including socio-demographic data, type of ED, site of recruitment, previous/current psychiatric comorbidity, pharmacological therapy (psychiatric and non-psychiatric). The form was later updated with a list of additional information on comorbidities and living conditions during the SARS-CoV-2 lockdown period. Considering this, the population was later divided into two sub-samples, the first referring to the period between March 2019 and July 2022 and the second, consisting of 54 patients, included in the period from July 2022 to November 2024. The Italian version of the self-administered test Nepean Dysphoria Scale (NDS) (Starcevic et al. 2007), translated by D'Agostino et al. in 2016 (NDS-I), was completed by patients to evaluate, starting from a dimensional construct, how Dysphoria is expressed qualitatively. It consists of 24 items on a Likert scale from 0 to 4 related to the frequency with which the patients have experienced the feelings in the last week. At the end it is possible to obtain a specific Total Score providing an approximate evaluation of the degree of Dysphoria, which can be additionally divided into 4 subscales that represent the dimensions of Dysphoria: Irritability,

Discontent, Interpersonal Resentment and Surrender. The test is not provided with any cut-off, and it's used to assess, through the average score, the difference in symptomatic severity of Dysphoria as well as differential phenomenological expressions between disorders. The study was conducted according to the principles of good clinical practice, and the protocol was approved by the Regional Ethics Committee of Umbria. All the data was stored in a database and then analyzed with SPSS v. 26 software. Descriptive analyses were first performed to analyze the distribution of the variables of interest in the sample. Categorical variables were described through absolute frequencies and percentages, continuous variables through mean and standard deviation. Continuous variables, considering the large sample, were considered normally distributed (Kwak et al. 2017). One-way ANOVA was performed to compare the scores obtained on the NDS-I test within the different diagnostic groups. Pearson's r test was performed to evaluate the correlations between the dimensions of Dysphoria and relevant socio-demographic and clinical variables. Significance was defined as  $p < 0.05$ .

## RESULTS

AN was the most represented diagnosis in our main sample (38.36%), followed by BED (34.25%) and BN (27.40%). The average age was 35.77, ranging from a minimum of 14 to a maximum of 72, with a peak around 20 (N = 33), showing a decrease with advancing age and a new increase above 50. Patients with AN were mostly in adolescence or young adulthood (<24 years) with sporadic cases over 30, this seems to be reversed in BED, where most patients were over 40, with BN being halfway between the two (Table 1). We noted a clear prevalence of women compared to men, with rates of 87.88% and 12.12% respectively, although there was an important difference in the three diagnostic categories with a gradual increase of males in the transition from AN (1.79%) to BN (5%) up to BED (28%). The highest NDS scores concerned the Surrender scale, so we studied how they varied within the three EDs (Table 2):

**Table 1.** Age in the three types of EDs

Type of ED	Min.	Max.	Mean	Stand. Dev.
AN	14	41	19.69	5.716
BN	14	64	27.23	14.514
BED	14	72	49.06	14.238

**Table 2.** Mean total NDS scores in EDs

Type of ED	Mean	Stand. Dev.	Min.	Max.
AN	2.3924	0.72858	0.54	3.67
BN	1.9032	0.91054	0.42	3.88
BED	1.1453	0.71888	0.00	3.00
Total	1.8313	0.94035	0.00	3.88

**Table 3.** Comparison of NDS dimensions in EDs

	Mean	Deviation std.	Min.	Max.
<b>Irritability</b>				
AN	2.1981	0.79002	0.11	3.78
BN	1.6528	0.97911	0.33	4.00
BED	1.0602	0.77569	0.00	3.44
Total	1.6590	0.96634	0.00	4.00
<b>Discontent</b>				
AN	2.7442	0.81499	0.67	4.00
BN	2.1960	1.10235	0.17	4.67
BED	1.4363	0.96785	0.00	3.83
Total	2.1461	1.09903	0.00	4.67
<b>Interpersonal Resentment</b>				
AN	1.8857	0.94953	0.20	3.80
BN	1.6450	1.06842	0.00	4.80
BED	0.9160	0.75278	0.00	2.60
Total	1.4877	1.01056	0.00	4.80
<b>Surrender</b>				
AN	2.9196	1.02148	0.50	4.25
BN	2.2938	1.20481	0.00	4.50
BED	1.1850	0.97652	0.00	3.50
Total	2.1541	1.28997	0.00	4.50

**Table 4.** Correlation between NDS and socio-demographic data

Socio-demographic characteristics	NDS Total Score Mean
<b>Gender</b>	
Pearson correlation	0.153
Sign. (two-tailed)	0.269
N	54
<b>Age</b>	
Pearson correlation	-0.444
Sign. (two-tailed)	0.001
N	51
<b>Married</b>	
Pearson correlation	-0.188
Sign. (two-tailed)	0.182
N	52
<b>Living with family</b>	
Pearson correlation	0.267
Sign. (two-tailed)	0.053
N	53
<b>Physical illness</b>	
Pearson correlation	-0.354
Sign. (two-tailed)	0.015
N	47
<b>Medical therapy</b>	
Pearson correlation	-0.402
Sign. (two-tailed)	0.006
N	45
<b>Smokers</b>	
Pearson correlation	0.316
Sign. (two-tailed)	0.033
N	46

**Table 5.** Correlation between Psychiatric Comorbidity and Dysphoria in EDs

Current Psychiatric Comorbidity	NDS Total Score
<b>General Psychiatric Comorbidity</b>	
Pearson correlation	0.352
Sign. (two-tailed)	0.015
N	47
<b>Mood Disorders</b>	
Pearson correlation	0.223
Sign. (two-tailed)	0.131
N	47
<b>Psychotic Disorders</b>	
Pearson correlation	0.267
Sign. (two-tailed)	0.069
N	47
<b>Personality Disorders</b>	
Pearson correlation	0.061
Sign. (two-tailed)	0.682
N	47
<b>Anxiety Disorder</b>	
Pearson correlation	0.323
Sign. (two-tailed)	0.027
N	47
<b>Obsessive-Compulsive Disorder</b>	
Pearson correlation	-0.111
Sign. (two-tailed)	0.459
N	47
<b>Post-Traumatic Stress Disorder</b>	
Pearson correlation	0.189
Sign. (two-tailed)	0.199
N	48
<b>Alcohol Abuse</b>	
Pearson correlation	0.079
Sign. (two-tailed)	0.598
N	47

**Table 6.** Correlation between ongoing psychopharmacological therapy and dysphoria in EDs

Ongoing Psychopharmacological Therapy	NDS Total Score
<b>Antidepressants</b>	
Pearson correlation	0.222
Sign. (two-tailed)	0.133
N	47
<b>Mood Stabilizers</b>	
Pearson correlation	-0.008
Sign. (two-tailed)	0.957
N	48
<b>Antipsychotics</b>	
Pearson correlation	0.441**
Sign. (two-tailed)	0.002
N	47
<b>Benzodiazepines</b>	
Pearson correlation	0.301*
Sign. (two-tailed)	0.040
N	47

AN presented a higher score and, therefore, a greater degree of Dysphoria than the other two, both in their overall severity ( $p < 0.001$ ) and in its categorical dimensions ( $p < 0.001$  for all subscales). BED, on the contrary, seems to present the lowest scores, both in total severity and in the dimensional categories. By analyzing the dimensions of Dysphoria in the three EDs, it is confirmed that the feeling of Surrender was the most present in all three disorders, followed by Discontent (Table 3). Regarding the sub-sample of 54 patients recruited from July 2022 to November 2024, we were able to highlight statistically significant correlations ( $p < 0.05$ ) between different socio-demographic variables and the degree of Dysphoria of individuals with ED (Table 4). We found a statistically significant negative correlation between the age of the patients and the overall degree of Dysphoria ( $r = -0.444$ ,  $p = 0.001$ ), suggesting that, as age increases, the overall level of Dysphoria will decrease. Similarly, the presence of ongoing medical therapy or comorbidity with

**Table 7.** Correlation between socio-demographic variables of patients with ED and psychiatric comorbidity

Current Psychiatric Comorbidity	Gender	Age	Married	Living with family	Physical illness	Medical therapy	Smokers
<b>General Psychiatric Comorbidity</b>							
Pearson correlation	0.173	0.095	-0.017	-0.123	-0.131	0.000	0.000
Sign. (two-tailed)	0.246	0.534	0.911	0.411	0.386	1.000	1.000
N	47	45	47	47	46	44	46
<b>Mood Disorders</b>							
Pearson correlation	0.101	0.089	-0.070	-0.189	-0.079	0.027	0.009
Sign. (two-tailed)	0.499	0.560	0.640	0.204	0.602	0.862	0.952
N	47	45	47	47	46	44	46
<b>Psychotic Disorders</b>							
Pearson correlation	0.072	-0.272	-0.116	-0.067	-0.137	-0.127	0.251
Sign. (two-tailed)	0.632	0.071	0.437	0.656	0.365	0.412	0.093
N	47	45	47	47	46	44	46
<b>Personality Disorders</b>							
Pearson correlation	0.072	0.001	-0.116	-0.067	0.163	0.183	0.251
Sign. (two-tailed)	0.632	0.996	0.437	0.656	0.280	0.234	0.093
N	47	45	47	47	46	44	46
<b>Anxiety Disorder</b>							
Pearson correlation	0.199	-0.132	0.061	0.076	-0.227	-0.235	-0.178
Sign. (two-tailed)	0.180	0.386	0.683	0.610	0.130	0.125	0.237
N	47	45	47	47	46	44	46
<b>Obsessive-Compulsive Disorder</b>							
Pearson correlation	0.072	0.166	-0.116	-0.067	0.163	0.183	-0.089
Sign. (two-tailed)	0.632	0.275	0.437	0.656	0.280	0.234	0.558
N	47	45	47	47	46	44	46
<b>Post-Traumatic Stress Disorder</b>							
Pearson correlation	-0.079	0.146	-0.033	-0.115	0.111	0.040	-0.157
Sign. (two-tailed)	0.591	0.331	0.824	0.434	0.461	0.795	0.298
N	48	46	48	48	46	44	46
<b>Alcohol Abuse</b>							
Pearson correlation	-0.433**	-0.013	-0.166	-0.095	0.233	0.183	-0.127
Sign. (two-tailed)	0.002	0.934	0.265	0.523	0.120	0.234	0.402
N	47	45	47	47	46	44	46

**Table 8.** Correlation between socio-demographic variables of patients with ED and ongoing psychopharmacological therapy

Ongoing Psychopharmacological therapy	Gender	Age	Married	Living with family	Physical illness	Medical therapy	Smokers
<b>Antidepressants</b>							
Pearson correlation	0.199	-0.061	-0.035	-0.171	-0.132	0.027	0.037
Sign. (two-tailed)	0.180	0.690	0.817	0.250	0.382	0.862	0.805
N	47	45	47	47	46	44	46
<b>Mood Stabilizers</b>							
Pearson correlation	0.070	-0.009	-0.113	0.304*	-0.040	-0.102	0.111
Sign. (two-tailed)	0.636	0.952	0.443	0.036	0.794	0.509	0.464
N	48	46	48	48	46	44	46
<b>Antipsychotics</b>							
Pearson correlation	0.168	-0.377*	-0.272	-0.156	-0.180	-0.152	0.429**
Sign. (two-tailed)	0.259	0.011	0.065	0.294	0.232	0.324	0.003
N	47	45	47	47	46	44	46
<b>Benzodiazepines</b>							
Pearson correlation	0.186	-0.264	0.092	-0.004	-0.096	-0.061	-0.083
Sign. (two-tailed)	0.210	0.080	0.538	0.981	0.527	0.693	0.583
N	47	45	47	47	46	44	46

a physical illness also presented a statistically significant negative correlation, associating these variables with a lower degree of Dysphoria ( $r=-0.354$ ,  $p=0.015$  and  $r=-0.402$ ,  $p=0.006$ , respectively). A statistically significant positive correlation can be found in smoking habits ( $r=0.316$ ): smokers presented a higher overall degree of Dysphoria than non-smokers. A statistically significant correlation can be observed between the presence of any current psychiatric condition and NDS-I total score ( $r = 0.352$ ,  $p = 0.015$ ) suggesting a greater severity of Dysphoria when EDs are associated with another psychiatric disorder, especially with AD ( $r=0.323$ ,  $p=0.027$ ). (Table 5), a similar correlation was also found with the use of benzodiazepines (BDZ) ( $r=0.441$ ,  $p=0.04$ ) and antipsychotics (APs) ( $r=0.301$ ,  $p=0.002$ ) (Table 6). Statistically significant data is represented by the correlation between Alcohol Use/Abuse Disorder with the female gender ( $r=-0.433$ ,  $p=0.001$ ) (Table 7) and the use of APs with smoking habits ( $r=0.429$ ,  $p=0.003$ ) (Table 8).

## DISCUSSION

Our results are consistent with previous studies. Average age increases in the transition from AN to BN to BED, with the age of onset of ED being usually between 12 and 25 (Pelle et al. 2021). The 2019 review by Galmiche et al. analyzing the prevalence of ED in the period 2000-2019, showed an age of onset lower than 22 for AN, with an average of 16.2, higher in BN (onset before the age of 24) and even more so in BED (average age of onset around 23.3 with greater distribution over time). In line with the higher rate of women found in the general sample, with a significant increase of men in BED, the review also showed a

lifetime prevalence of 1.4% in women and 0.2% in men for AN, of 1.9% in women and 0.6% in men for BN and of 2.8% in women and 1.0% in men for BED. Similarly to previous studies (Starcevic et al. 2015), a specific association between the two most internalizing dimensions of Dysphoria (Discontent and Surrender) and depression was found, which is not surprising considering that 70% of EDs are comorbid with other psychiatric disorders, such as ADs (>50%) and MDD (>40%) (Pelle et al. 2021). AN presenting the highest scores overall and in the individual dimensions of Dysphoria can be explained with considering “Emotional and Uncontrolled Eating” in BN and BED (Witaszek et al. 2023) as violent behaviors aimed at containing the dysphoric state, while maladaptive eating behaviors in AN are not implemented, so the uncontained dysphoric process encounters a disorganizing effect, worsening Dysphoria. In the sub-sample of 54 patients, data showed that, as age increases, the overall degree of Dysphoria decreases as advanced age is more represented in BN and BED: older age might be associated with greater self-awareness, better coping strategies and management of dysphoric state. Similar results can be found in literature on the positive correlation between Dysphoria and smoking habits (Cook et al. 2020, Leventhal et al. 2011), as Dysphoria is generally associated with various aspects of smokers' behaviors: use of cigarettes to reduce negative mood, addiction, higher smoking rates, the perception of greater difficulties in quitting smoking and the avoidance of specific experiences related to smoking itself. Smokers with higher levels of Dysphoria seem more prone to a heavier dependence on smoking to alleviate symptoms related to it (Garey et al. 2016). Dysphoria, as a trans-diagnostic construct, is found in a large list of psychopathological conditions, particularly in mood disorders and ADs (D'Agostino et al 2016,

Moretti et al. 2018), in line with the positive correlation we found between the presence of psychiatric comorbidity and higher levels of total Dysphoria, specifically with AD. This correlation can also explain the association between the use of BDZ, frequently used in AD, and higher degree of Dysphoria. Another correlation between a higher degree of Dysphoria and the use of APs was highlighted: a particular psychic condition called “Neuroleptic Dysphoria” is described in literature, referring to the discomfort linked to the sense of mental and motor embarrassment (Rossi Monti 2012) and a set of unpleasant subjective sensations regarding arousal, mood, thought and motivation that the patient relates to the assumption of neuroleptics (Voruganti & Awad 2004). A higher frequency of alcohol use in the female gender appears to be statistically significant: Substances Use Disorder, especially Alcohol Use Disorder, is present in 10% of patients with ED, particularly in young women between 20 and 30 years of age (Pelle et al. 2021). Finally, we found a positive correlation between the use of APs and smoking habits: the antidopaminergic action on D2 receptors in the nucleus accumbens of the mesolimbic pathway not only reduces the positive symptoms associated with psychosis, but significantly affects the reward system, increasing negative symptoms such as anhedonia and apathy, generating greater craving and favoring an increase in cigarette use (Stahl 2021).

## CONCLUSIONS

We can reiterate that Dysphoria seems to constitute a transdiagnostic construct crossing multiple psychopathological domains and acquires fundamental importance also within EDs. It is possible for it to have a specific role in the etiology and maintenance of eating behaviors and “violent” compensatory behaviors. By finding high levels of Dysphoria in ED, and greater severity of the same in AN rather than in BN or BED, we can say that Dysphoria might play a core role in this type of mental disorder and that the behavioral aspect, given by maladaptive eating and compensation behaviors, aims to contain the negative affective state and reduce dysphoric anxiety. Further studies examining the relationship between levels of Dysphoria and maladaptive eating behaviors could provide additional insights. Understanding these connections could represent a useful tool for the comprehension of complex and multifaceted disorders, such as EDs, which are increasing and have always represented a great diagnostic and therapeutic challenge.

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## Contribution of individual authors:

Lupattelli Ilaria: manuscript writing, data collection, literature searches and analyses.

Moretti Patrizia: design of the study, data analysis and interpretation, drafting and revision manuscript.

Raspa Veronica & Laura Dalla Ragione: design of the study, data analysis.

Tortorella Alfonso: revision manuscript.

All authors approved the final manuscript.

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