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THE PSYCHOSOMATIC SPECTRUM: A CLINICAL-ANALYTIC SURVEY OF THE RELATIONSHIP BETWEEN EATING DISORDERS AND MIGRAINE

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SUMMARY

Objective: *To evaluate if somatic symptoms of Eating Disorders and Migraine reflect similar aspects of personality and temperament.*

Methods: *The clinical notes of 27 migraineurs and of 26 ED outpatients were reviewed; 40 medical students of the University of Perugia were recruited as healthy controls. TCI, DMI, SCID-II and TAS-20 were used. Statistical analysis: performed by logistic regression, a cluster analysis that gave the weight for the three groups, and a logistic regression of the cluster analysis.*

Results: *Patients showed medium scores in almost all the scales of the different tests. High scores in HA and low scores in NS characterized both migraine and ED patients. Logistic regression of the cluster analysis underscored that ED patients, migraineurs, and controls differed for HA (435.424, p≤0.0001), TAS-20 F2 (difficulty in describing feelings to others; 7.087, p=0.029), and the defense mechanism turning against object (6.702, p=0.035).*

Discussion: *The temperamental aspects of low NS and high HA represent the core symptoms of a spectrum composed of somatizing patients who use affective and behavioral strategies that are not functional enough in affective regulation.*

Key words: *eating disorders – migraine – alexithymia - defense mechanisms - spectrum diagnosis*

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INTRODUCTION

ED and migraine share psychogenic aspects (i.e., an inadequate differentiation and integration of emotions), temperamental and characterological elements (i.e., the tendency to rigidity, impulsivity, introversion, behavioral inhibition), neurobiological characteristics (i.e., hypothalamic and limbic dysregulation, serotoninergic system dysfunction, increase of tyramine and decrease of dopamine in plasma), clinical–descriptive elements (i.e., high prevalence in female young adults, association with mood and anxiety disorders) and, finally, pharmacological solutions (the efficacy of serotoninergic agents) (Brewerton & George 1993, Ostuzzi et al. 2008).

Generally, both patients suffering from migraine and EDs live in a state of psychosomatic discomfort without being aware that their own body can carry their emotions; this can happen using somatization (i.e., the appearance of headache in response to internal and/or external stressors) and/or the acting out of impulses (i.e., binge eating).

Consequently, using a multidimensional and integrated assessment, we sought to:

- Evaluate personality disorders (PDs), temperament, defense mechanisms, and alexythimic features characterizing patients with EDs and migraine to find commonalities or differences between the two groups.
- Analyze the specific interactions between these psychological parameters, primarily to define not only comorbidity but also a psychopathological core between EDs and migraine.
- Assess if these psychological profiles differ significantly from those of a control group.

METHODS

We reviewed the clinical notes of patients with migraine and EDs that had requested an ambulatory evaluation in the acute phase of their disease.

Patients received the tests after a structured interview of the International Headache Society Diagnostic Criteria (ICHD-II) for the diagnosis of migraine, and with DSM IV-TR criteria for the diagnosis of EDs and other Axis I disorders.

Inclusion criteria for participants were: (1) aged between 18–65 years; (2) not suffering from medical diseases and starvation, (3) not taking any kind of psychiatric therapy before the assessment.

We enrolled 27 outpatients suffering from migraine (23 women) and 26 outpatients with EDs (all female).

Forty healthy controls (27 women) underwent an individual session with a trained attendant psychiatrist to assess the presence of current or past Axis I mental disorders and to evaluate Axis II PDs.

The mean age of migraineurs was 35.96 years (SD=12.06). The mean age of patients with EDs was 28.04 years (SD=10.31). The mean age of healthy controls was 24 years (SD=2.03).

Both outpatients and controls were assessed by the means of the Temperament and Character Inventory (TCI), the 20-item Toronto Alexithymia Scale (TAS-20) and the Defense Mechanisms Inventory (DMI); all participants were Italian so we used the Italian validation of the questionnaires.

Statistical Package for the Social Sciences version 18 was used for statistical analysis (SPSS Inc, Chicago, IL, USA).

The analysis proceeded by the following steps:

- Initially, we conducted a logistic regression using the fact of belonging to the ED group and then the fact of belonging to the migraine group as independent variables to more precisely define which of the variables were associated with a specific comorbid condition; another logistic regression was conducted for healthy controls.
- We did a cluster analysis to give weights for the three groups which differed in numbers.
- Finally, we performed a logistic regression of the groups that we obtained by the cluster analysis to evaluate if there were variables that could influence belonging to one of the three groups. Confidence intervals were fixed at 95%. We obtained a maximization of the likelihood function using the Newton–Raphson algorithm to better approximate the roots.

RESULTS

Mean scores on the tests

Migraineurs had low scores (33.7; SD=27.198) in NS, high scores (74.52; SD=29.24) in HA, medium scores (36.44; SD=24.499) in RD, medium-high scores in PRN (51.44; SD=9.37), medium-high scores in TAS (52.04; SD=14.706), medium-high scores in REV (52.67; SD=12.953) and medium scores in P, TAS-20 total, F1, F2, F3, TAO and PRO.

Patients with EDs had low scores (33.5; SD=25.299) in NS, high scores (84.42; SD=21.574) in HA, high scores (54.5; SD=14.146) in the TAS-20 total, medium-high scores (20.5; 7.328) in F1, medium-high scores (15.23; SD=5.006) in F2, medium-high scores in TAS (59.12; SD=11.226), medium scores in REV (50.27; SD=17.858) and medium scores in RD, P, F3, TAO, PRO and PRN.

Healthy controls had medium scores in general.

Logistic regression

Taking in consideration only the migraine diagnosis, we could see that age (0.226, p=0.008) directly correlated with this diagnosis while RD (-0.034, p=0.049) was inversely correlated with it. On the other hand, EDs inversely correlated with NS (-0.40, p=0.021) and directly with TAS (0.153, p=0.040) and REV (0.166, p=0.047).

Cluster analysis

We obtained three clusters (Table 1). As shown in Figure 1, migraineurs and patients with EDs were mostly spread in cluster 2. Cluster 2 was characterized by low scores (29.250) in NS, high scores (88.143) in HA, medium scores (45.036) in RD, high scores (77.143) in P, medium scores (46.893) in the TAS-20 total, medium scores (16.143) in F1, medium scores (14.357) in F2, medium scores (16.536) in F3, medium-high scores in TAO (52.929), medium-high scores in PRO (52.286), medium scores in PRN (45.893), medium-high scores in TAS (55.429), and medium scores in REV (44.357).

Table 1. Cluster analysis

	Class		
	1	2	3
Gender	1.250	1.179	1.08
Education	3.025	3.036	2.68
Occupation	3.475	3.286	1.84
Age	25.250	26.750	34.96
NS	63.725	29.250	32.12
HA	55.675	88.143	94.40
RD	47.325	45.036	32.88
P	27.725	77.143	19.00
TAS tot	42.725	46.893	56.48
F1	14.650	16.143	20.44
F2	11.350	14.357	16.28
F3	16.725	16.536	20.04
TAO	56.425	52.929	41.80
PRO	49.725	52.286	51.32
PRN	49.875	45.893	50.96
TAS	47.625	55.429	57.92
REV	44.250	44.357	52.56

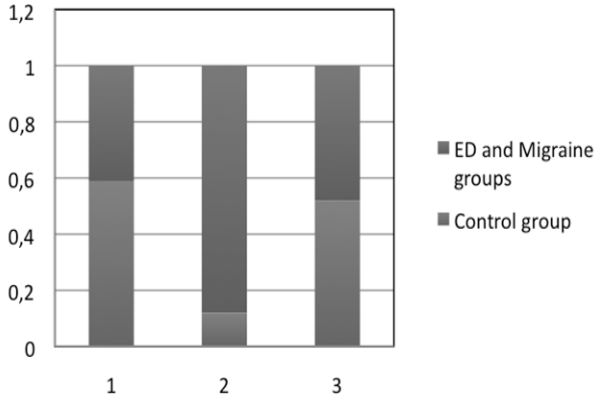

Figure 1. Groups from the cluster analysis

Logistic regression of the cluster analysis

The three groups differed in TAO (6.702, p=0.035), HA (435.424, p≤0.0001), and F2 (7.087, p=0.029).

DISCUSSION

Migraineurs and patients with EDs had low scores on the TCI temperamental scale for NS associated with high scores in HA; this parameter does not make them different from healthy controls but indicates that mainly anxious, insecure, inhibited, and stressed vulnerable people seek treatment.

Furthermore, ED patients shared with the migraineurs high scores on the TAS defensive style; this brings to light an interesting dynamic. In fact, when emotional experiences are not mentalized, they are discharged through the body in a sort of "intrasomatic projection" (Mancia 1994). Indeed, Muris and Merckelbach (1994) confirmed the presence of immature defenses in patients with an anxious temperament and found a close correlation between the defenses of acting out and somatization (Muris & Merckelbach 1994).

Somatization (e.g., in migraine) structures itself in the presence of a narcissistic fragility, when internal or external tensions involve a person. It can exemplify the meaning of "symptom–action" (McDougall 1982), as for example in acting-out behaviors (e.g., in binge-purging behaviors).

Results from the cluster analysis reveal for the patients (both suffering from EDs or migraine) high scores in TAO or PRO/TAS that identifies people that have lost all the capacities to control their own self-destructive behavior; some of them related feeling a chronic void and an irresistible driving force that leads them to get excited using self-destructive behaviors. They try in an obsessive manner to repeat experiences that lead to love and refusal, excitement and guilt, related to the risk of self-damaging. Their aggressive intrapunitive defenses limit the maturation of their personality toward more structured aspects. Consequently emotional distress is turned against the self more than outside sources (Ihilevich & Gleser 2009).

We confirmed this by the logistic regression of the cluster analysis that revealed a correlation between belonging to cluster 2 and F2 (difficultly describing one's feelings to others), which is associated with a high level of vulnerability, and cognitive and emotional inhibition (Lawson et al. 2008). In fact, TAS-20 describes individuals characterized by a low degree of conscious awareness of emotional arousal and a low degree of emotion accompanying cognitions (Montebarocci et al. 2006).

Limitations and advantages of the study

This study's correlation design shifts attention from the simple association between variables to the way in which they interact and allows defining a psycho (patho)logical model of migraine that includes trait and state variables.

However, the present study suffers from selection bias because participants were recruited from a specialist ambulatory and not from the general population.

CONCLUSIONS

Our study shows that EDs and migraine can be considered part of a unique disease spectrum, with a psychopathological core represented by low NS–high HA that predisposes an individual to face anxiety in an inadequate and unproductive way, with the consequent "stratification" of the different disorders among a pole in which on one end the impulsive aspect (eliminatory conducts) prevails and on the other end obsessive control (feeding or emotional restrictions) predominates. People described as shy, easily tired, fearful, and doubtful have difficulty making contact with their own emotions. The hyperexcited state they feel is too rapid and violent to allow an emotional experience. In fact, it has been demonstrated (Lemogne et al. 2010) that people with high HA have a less complete emotional processing of affective stimuli with the consequent missed attribution of an experiential meaning in the present state. These people process emotions in a "self-referential" manner that excludes awareness of the social context (defensive profile of high TAO and PRO) and the capability to communicate their affective states to others (direct correlation with F2). This focus on the self makes individuals not aware of what they have learned and induces a "repetition" of symptoms in a stable and inflexible manner (Farrer & Frith 2002).

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Ethical committee approval

Research conformed to ethical standards proposed by Declaration of Helsinki latest version (WMA 2008). The research project of this study was approved by the Ethical committee of Umbria (Prot. N. 3763/14/ON, 21/08/2014) and by the Santa Maria della Misericordia Hospital, Perugia, Italy (Prot. N. 1358, 10/10/2014).

Conflict of interest: None to declare.

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