Personality Features and Defense Styles in Subjects Affected with Eating Disorders: Focus on Anorexia and Bulimia Nervosa

Laura Orsolini[1,*], Ginevra Oriani[2,3], Samuele Giacomoni[4], Giulia Amato[1], Massimo Mari[2] and Umberto Volpe[1]

[1]*Unit of Clinical Psychiatry, Department of Clinical Neurosciences/DIMSC, School of Medicine, Polytechnic University of Marche, Via Conca 71, 60126, Ancona, Italy*

[2]*Mental Health Department, AV2 ASUR Marche, 60035, Jesi, Italy*

[3]*ED outpatient service, Mental Health Department, AV2 ASUR Marche, 60035, Jesi, Italy*

[4]*Residenza Sanitaria Sole, Via Camilluccia, 4, 47843, Misano Adriatico, Italy*

Abstract: Eating disorders have been reported to be characterized by a specific profile of psychological defenses. Defense mechanisms refer to involuntary psychological processes, relatively stable cognitive response patterns that may serve to distort reality whenever individual resources, skills or motivations do not ensure functional adaptation to internal or external stressful situations. The present study aims at investigating and comparing defense mechanisms and personality correlates in three subgroups of patients with eating disorders (anorexia restrictive type, anorexia bulimic/purging type, and bulimia nervosa) consecutively recruited to a regional outpatient specialist service for eating disorders. Through a retrospective chart review, we recruited 104 adult subjects with a diagnosis of anorexia nervosa (n=62) and bulimia nervosa (n=42), who were administered with Defense Mechanism Inventory (DMI), Eating Disorder Inventory-2 (EDI-2) and the Structured Clinical Interview for DSM-5® Personality Disorders (SCID-5-PD). Statistical analyses were carried out by using ANOVA and χ^2 test, where appropriate. The mean age of participants was 23 (±SD=8) and 26 (±SD=8) years, respectively in AN and BN sample. Amongst bulimic outpatients, clinically significant differences were found in "turning against the self" (TAS, p<0.001), drive for thinness (DT, p=0.012), bulimia (BU, p<0.001), body dissatisfaction (BD, p=0.010), interoceptive awareness (IA, p=.006) subscales and in borderline personality traits (p=0.038). Positive correlations were found between TAS subscale and the EDI-2 subscales (BU and ineffectiveness (I)); whilst negative correlations were present between TAS and obsessive-compulsive traits. Amongst anorexic outpatients, significant negative correlations were found between the DMI subscale (principalization, PRN) and EDI-2 subscales (BU, I, IA and asceticism (ASC)); whilst positive correlations between TAS and I, ASC and social insecurity (SI), particularly in anorexia restrictive type, and DMI subscale "turning against the object" (TAO) and narcissistic (p=0.05) and obsessive-compulsive personality traits (p=0.002). Significant differences were found between PRN and anorexia restrictive type (p=0.04) and TAO in anorexia bulimic/purgative type (p=0.029). Overall, anorexic subjects significantly displayed a trend for obsessive-compulsive traits. In particular, anorexia restrictive type subjects preferentially use intellectualizing defense styles, whilst anorexia bulimic/purgative type subjects use more "aggressive" defense styles. Subjects with bulimia nervosa preferentially display intropunitive defense styles and borderline personality traits. Therefore, investigating and deepening the specific pattern of defense mechanisms and associated personality traits in eating disorders may be useful from a clinical perspective to better understand the clinical course of eating disorders and to shape more individualized therapeutic interventions for eating disorders.

Keywords: Anorexia nervosa, Bulimia nervosa, Defense mechanisms, Defense Mechanism Inventory, Defense styles, DMI, Eating disorders, Personality.

1. INTRODUCTION

Eating Disorders EDs, including Anorexia Nervosa (AN), Bulimia Nervosa (BN), Binge Eating Disorder (BED), and Other Specified Feeding and Eating Disorders (OSFED), are severe and often long-lasting psychiatric disorders, associated with severe physical and psychiatric consequences, including risk of death, impaired physical and mental health, psychiatric comorbidity and poor quality of life for the patient and their caregivers [1-2]. EDs have been reported to be characterized by a specific profile of psychological defenses. Defense mechanisms (DM) refer to involuntary psychological processes that are defined as mental or cognitive operations operating to keep unacceptable thoughts, impulses, and wishes out of the awareness [3]. They operate to protect the self from conflict, shame, loss of self-esteem or other unacceptable feelings and negative thoughts and to manage aversive feelings and/or intolerable emotional states, protecting the person from experiencing excessive anxiety [3]. DM refer to individuals' relatively stable response patterns which may serve to distort reality whenever their resources, skills or motivations are not enough functional to resolve inner conflicts or master external threats to well-being [4]. DM involve perceiving and processing information and reacting to stressful situations and are considered as part of

*Address correspondence to this author at the Department of Clinical Neurosciences/DIMSC, School of Medicine, Unit of Clinical Psychiatry, Polytechnic University of Marche, Via Conca 71, 60126, Ancona, Italy;
Tel: +39 071 5963086; E-mail: laura.orsolini01@gmail.com

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normal personality functioning [5]. DM can typically be conceptualized along a continuum ranging from defense styles (DS) considered more primitive and maladaptive (immature) to others seen as more complex, healthy, effective and thus, more adaptive and mature psychological mechanisms [6]. Overall, when a DM is excessively or maladaptively used by the subject, it may contribute to the development or a worsening of a psychopathological condition [7]. Actually, when a DM operates through an excessive, rigid or inappropriate use, it might destructively impacts on the self, by contributing to the decline of personal, interpersonal or work functioning levels [7]. On the contrary, individuals owning more adaptive DM may be more likely to understand, regulate and use emotional information to cope with daily stressors and threats; consequently, they may be more adapted to their environment and display a better adjustment, resulting in a better level of adaptation [6]. Within this context, specific patterns of DM may determine or facilitate the development, worsening or chronicization of a psycho-pathological condition, including eating disorders (EDs).

Several studies reported that ED subjects display more maladaptive defensive functioning styles, compared to healthy controls [8]. Furthermore, the prevalence of specific DM and associated personality traits (*e.g*., obsessive-compulsive [O-C] and borderline personality traits and/or disorders) in ED individuals may determine clinically significant implications for aetiology, assessment and intervention [9-13]. Therefore, investigating the specific patterns of DM and associated personality traits in EDs may be useful from a clinical perspective to better understand the clinical course and define more refined therapeutic interventions for EDs.

However, despite the theory of DM is not so recent, to date, there is still little research evidence on this topic and few clinical studies specifically investigating the sample of EDs. Therefore, the present study aims to investigate the DM and personality correlates within three subgroups of ED patients: AN-restrictive type (AN-R), AN-bulimic/purging type (AN-B/P) and BN, consecutively accessing to an Italian regional outpatient specialist service for EDs. The primary goal was to analyze how specific DM and DS may interfere with the management of stressors and emotional states, the clinical onset, severity and the maintenance of an ED, and how assessing DM and their correlations (if any) with specific personality traits may provide therapeutic alternatives in the medium- and long-term.

2. MATERIALS AND METHODS

2.1. Participants

All outpatients were recruited amongst those attending the Marche regional outpatient service for EDs (Unit of Clinical Psychiatry, Department of Clinical Neurosciences/DIMSC, University Hospital “Ospedali Riuniti di Ancona”, Polytechnic University of Marche, Ancona, Italy). Patients were retrospectively evaluated in a 5-year timeframe and included in the study if they met the following inclusion criteria: a) clinical diagnosis of AN or BN, according to the Diagnostic Statistical Manual of Mental Disorders-5th edition (DSM-5)[14]; c) outpatients stable from a clinical and diagnostic point of view; d) ≥18 years old; e) education level not lower than elementary school; f) absence of linguistic difficulties (*i.e*., not Italian speaker or foreign without a sufficient ability to understand Italian language); g) signed informed consents for collecting and analyzing clinical data for research purpose, during the baseline assessment. Participants were excluded if they met one or more of the following exclusion criteria: a) mental retardation or cognitive deterioration; b) comorbid diagnosis of schizophrenia, schizoaffective disorder, schizophreniform disorder or delusional disorder according to the DSM-5 criteria [14]; c) diagnosis of dementia or organic mental disorder according to the DSM-5 criteria [14]; d) subjects with a diagnosis of Binge Eating Disorder, overweight or obesity (*i.e*., BMI>25 Kg/m^2). The mean age of participants was 23 (±SD=8) and 26 (±SD=8) years, respectively in AN and BN sample. AN subjects display a mean Body Mass Index (BMI) of 16.4 (±SD=2.1) Kg/m^2, whilst BN subjects display a mean BMI of 21.2 (±SD=3.6) Kg/m^2. Enrolled participants were 97 females (97.1%) and 3 males (2.9%). An approval from the institutional review board was previously obtained. All participants volunteered to take part in the research study, after being presented with a detailed description and all were treated in accordance with the Ethical Principles of Medicine and Code of Conduct. None of the participants received an incentive, either directly or indirectly for participating, and were administered all measures as part of their routine clinical assessment and blind to the aim of the present study.

2.2. Procedures

Patient charts were obtained through an outpatient clinical electronic database and collected, filled in by psychiatrists who consecutively evaluated outpatients with provisional or confirmed ED diagnosis, during the baseline assessment. Clinical assessment was carried out by administering the Defense Mechanism Inventory

(DMI) [15], the Eating Disorder Inventory-2 (EDI-2) [16] and the Structured Clinical Interview for DSM-5® Personality Disorders (SCID-5-PD) [14]. DSM-5 psychiatric diagnosis was assessed by a clinician different from those following the participants in treatment and/or by trained clinical psychologists, during their initial assessment interviews.

2.3. Psychological and Clinical Measures

Subjects were first evaluated to collect demographic and clinical data by an *ad hoc* case report form, which included information on gender, age of clinical onset and BMI, ED diagnosis, and comorbid psychiatric diagnosis (if any).

Defense Mechanism Inventory (DMI)

The DMI is an easy-to-use tool able to measure a wide range of defensive styles, widely used in clinical studies. It has been employed to predict therapy continuance, therapy outcome, and successful differentiation of psychiatric from normal samples [15]. The DMI is based on the psychoanalytic assumption that defense mechanisms resolve or decrease conflicts between external and internal reality by one of the following methods: attacking, distorting, or becoming selectively unaware of aspects of either the internal or the external world [15]. This questionnaire assesses five theoretically distinct defensive styles: turning against the self (TAS *e.g*: self-blame), turning against the object (TAO; which includes identification with the aggressor and displacement), projection (PRO which includes classical projection), reversal (REV; which includes negation, denial, reaction formation, and repression), and principalization (PRN; which includes intellectualization, isolation, and rationalization). These styles are considered to account for most of the classical DMs mentioned in the classical psychoanalytic literature [15]. The DMI consists of 10 stories describing situations hypothesized to capture commonly encountered conflictual situations, with a "male" and a "female" version of the questionnaire. Each story is followed by five different options (corresponding to the abovementioned five DS), for each of the following four categories: actual behaviour, impulsive fantasy, thoughts, and affect. The respondent is asked to select the option that is most representative and least representative of him/her for each category [15].

Eating Disorder Inventory-2 (EDI-2)

The EDI-2 inventory is administered for the multidimensional assessment of the specific psychopathology of subjects with ED. It consists of 11 subscales with 91 items that can be answered on a six-point Likert-type scale from 1 (never) to 6 (always). EDI-2 comprises the following ED dimensions: drive for thinness (DT), bulimia (BN), body dissatisfaction (BD), ineffectiveness (I), perfectionism (P), interpersonal distrust (IP), interoceptive awareness (IA), maturity fears (MF), asceticism (ASC), impulse regulation (IR), and social insecurity (SI). The "DT" subscale refers to the constant "desire to lose weight" or worry about gaining weight. The "BN" subscale contains questions about binge episodes. The "BD" subscale concerns negative image questions. The remaining subscales assess traits specifically associated with EDs [16].

Structured Clinical Interview for DSM-5® Personality Disorders (SCID-5-PD)

The SCID-5-PD is a 119-item semi-structured interview designed to assess the ten personality disorder (PD) diagnoses that are listed in the DSM-5 (*i.e*., avoidant, dependent, obsessive-compulsive, paranoid, schizotypal, schizoid, histrionic, narcissistic, borderline and antisocial). The SCID-5-PD allows also for other specified (*i.e*., mixed) PD categorical diagnosis. The SCID-5-PD allows the clinician to make either categorical (present or absent) or dimensional rating for each of the DSM-5 PDs, by summing up the individual scores for the ratings and circling the appropriate number (*i.e*., "0"= absent; "1"= subthreshold, "2"= threshold). SCID-5-PD was preceded by the administration of its self-report personality questionnaire (SCID-5-SPQ) as a screening tool comprising 106 questions with a true/false.

2.4. Statistical Analysis

The mean and standard deviation (SD) of each variable were calculated. Descriptive statistics were reported as absolute and relative frequencies, for the categorical variables, and as means, SD or medians and interquartile range, for the quantitative variables. The normality of data was analyzed using the Kolmogorov-Smirnov and Shapiro-Wilk normality test. The analytical statistic was performed by comparing EDI-2 and DMI subscales using the Analysis of Variance (ANOVA) and χ^2 Pearson's test. A value of $p<0.05$ was considered statistically significant. All analysis were conducted using the Statistical Package for Social Science (SPSS, version 18, IBM corp., Chicago, IL, United States).

3. RESULTS

Amongst 561 patient charts reviewed, 408 subjects were removed from the data analysis due to incomplete

data or not being the age of consent (≥18 years old) which resulted in a total of 153 participants with completed data, of which 104 met the diagnosis of AN (n=62) or BN (n=42) and inclusion criteria for the purpose of analysis. The mean age of participants was 23 (±SD=8) and 26 (±SD=8) years, respectively in AN and BN sample. No statistically significant differences were reported regarding age between two groups. AN subjects display a mean BMI of 16.4 (±SD=2.1) Kg/m^2, whilst BN subjects display a mean BMI of 21.2 (±SD=3.6) Kg/m^2, with a statistically significant difference between two groups (p=0.001), as expected. Participants were 97 females (97.1%) and 3 males (2.9%)(see ***Appendix A*** and ***Appendix B***).

Relationships between DMI Subscales and ED Diagnosis

No statistically significant associations have been found between DMI TAO, PRN and REV subscales and a specific diagnosis of ED (p>0.05). According to the Shapiro-Wilk normality test, AN subjects showed statistically significant higher levels for the TAS subscale of DMI, compared to BN subjects (p=0.002). Conversely, BN subjects showed statistically significant higher levels at PRO subscale of DMI, compared to AN subjects (p=0.048). These differences were statistically significant between two groups (p=0.001). Within the AN sample, statistically significant correlations have been found between PRN subscale and a diagnosis of AN-R, compared to the sample affected with AN-B/P (p=0.04), whilst AN-B/P subjects display statistically significant correlations between TAO subscale and a diagnosis of AN-B/P, compared to AN-R sample (p=0.029).

Relationships between EDI-2 Subscales and ED Diagnosis

Comparing AN and BN subjects, statistically significant correlations were found between DT (p=0.012), BD (p=0.010) and IA (p=0.006) EDI-2 subscales and a diagnosis of AN (vs BN). Whilst a statistically significant correlation was reported between EDI-2 BU subscale and a diagnosis of BN (p<.0.001). In particular, AN-B/P subjects displayed higher levels of DT (p=0.008), BU (p<0.0001), BD (p=0.001), I (p=0.019), IP (p=0.028), IA (p=0.010) and ASC (p=0.001) with respect to AN-R subjects.

Relationships between EDI-2 and DMI Subscales in AN Sample

Within AN sample, statistically significant strong correlations were found between TAS subscale and EDI-2 I (p=0.002), ASC (p=0.006) and SI (p=0.004) subscales, particularly within the AN-R sample, compared to the AN-B/P sample (respectively, p=0.003, p<0.001 and p=0.003). Lower levels of PRN which includes intellectualization, isolation and rationalization were strongly associated with EDI-2 BU (p=0.002), I (p=0.001), IA (p=0.036) and ASC (p=0.006) subscales, within the AN sample, with respect to BN sample. Moreover, lower levels of REV were strongly associated with BU levels, within the AN-R sample (p=0.008), with respect to AN sample.

Relationships between EDI-2 and DMI Subscales in BN Sample

Within the BN sample, statistically significant correlations were reported between TAS subscale and the following EDI-2 subscales, *i.e*. BU (p=0.005) and IN (p<0.001), compared to AN sample.

Relationships between Personality Traits and ED Diagnosis

Personality traits were documented in 51.92% of the sample (53.23% in AN subjects and 50% in BN subjects), being O-C personality traits the most represented in our sample (25.96%). O-C personality traits were statistically significant represented amongst the AN subjects compared to BN subjects (respectively, 37% and 9.5%, p=0.002). Borderline personality traits were more statistically represented amongst BN subjects compared to AN subjects (respectively, 14% and 3.2%, p=0.038).

Relationships between DMI Subscales and Personality Traits in ED Sample

Those ED subjects with comorbid personality traits significantly displayed a statistically significant correlation with the DMI PRO subscale (p<0.05), particularly within the AN sample (p=0.05). Subjects with EDs and comorbid narcissistic personality traits displayed statistically significant correlations with a DMI profile with prevalent TAO and PRO as DS (both with p=0.05); whilst they displayed lower levels (not clinically relevant) with a DMI profile with prevalent PRN and REV as DS (both with p=0.05). In particular, both AN and BN subjects with narcissistic personality traits displayed statistically significant correlations with a DMI profile with prevalent TAO (p=0.05) as DS; whilst they displayed lower levels (not clinically relevant) with a DMI profile with prevalent REV (p=0.05) as DS. Within the AN sample, AN-B/P subjects with comorbid narcissistic personality traits were statistically significant associated with a DMI profile with prevalent TAO (p=0.029) as DS, compared to AN-R subjects. BN subjects with comorbid opposite personality traits

displayed statistically significant correlations with a DMI profile with prevalent PRO (p=0.05) as DS. Moreover, ED subjects (particularly those with a BN diagnosis) with comorbid O-C personality traits displayed lower levels (not clinically relevant) with a DMI profile with prevalent TAS (p=0.05). Whilst AN subjects with comorbid avoidant personality traits displayed a statistically significant correlation with a DMI profile with prevalent TAS (p=0.05) as DS, compared to BN subjects.

4. DISCUSSION

Our findings documented that both BN and AN subjects significantly display a specific pattern of relatively immature defenses (such as projection and turning against the self), being reported higher levels on PRO subscale in BN (vs AN) subjects (p=0.048); whilst higher levels on TAS subscale in AN (vs BN) subjects (p=0.002). Our findings are significantly consistent with previous (even though not so recent) published literature that documented that ED individuals are more likely to employ maladaptive and immature defense mechanisms (*e.g*. denial, projection and passive aggression), and mature defenses, to a lesser extent, compared to healthy controls with no evidence of an ED [6, 17]. Overall, it has been supposed that the prevalence of an immature DM pattern amongst EDs may indeed be either the influence of an active disabling illness, the result of a prolonged disorder that affects one's development or a potentially premorbid risk factor for the development and maintenance of an ED [6, 25]. In our sample, BN subjects seem to mainly use projective DS mainly displayed as an attempt to motivate or justify one's hostile thoughts, emotions and behaviours towards others and including paranoid ideation. However, previous literature documented amongst BN subjects, the prevalent usage of introjection of hostility, *e.g*. prevalence of a TAS profile [26-27]. In our sample, AN subjects seem to mainly use intra-punitive DS, which may comprise self-blame behaviours and attitudes in the attempt to protect one's self-esteem from the potentially negative experiences, self-directed aggressiveness, self-suicidal behaviours and ideations, self-criticism, negative expectations, anxiety and depressive symptomatology. However, when we analyzed AN subgroups, our findings reported that AN-R subjects display more intellectualizing DS (*e.g*., PRN), including rationalism, isolation and intellectualization which usually facilitates splitting mechanisms which may determine in AN-R (vs AN-B/P) subjects an easy removal of emotional meanings from the content of a particular experience (p=0.04). Whilst our sample affected with AN-B/P (vs AN-R) manifested more aggressive DS (*e.g*., TAO), including displacement and aggressive behaviours (p=0.029). When we compare our findings with previous literature, we find that the denial is considered a central DS amongst AN patients, by clinically manifesting itself as denial of the thinness, the illness and the need of a treatment, and in assisting the patient in coping with the pervasive feelings of ineffectiveness [28-30]. Further defensive operations may reflect the inability of AN patients to successfully reach the goal of separation/individuation process and control the upsurge of libidinal and aggressive impulses [13]. Amongst AN subjects who display a more mature pattern of DM, the wish of the separation and heightened impulses are usually repressed and/or displaced toward the patient's own body [31-32]. Whilst AN subjects with a greater lack of self-differentiation, tend to project their heightened impulses onto significant others or to introject hostile attitudes of significant others onto the self [33]. Furthermore, AN inpatients also display a pattern characterized by the intellectualization and the sublimation as defense mechanisms [9].

As already documented in previous studies which evaluate EDI-2 in ED subgroups [33, 34-35], our AN sample display statistically significant higher levels of DT (p=0.012), BD (p=0.010) and IA (p=0.006) compared to BN sample who display significantly higher levels of BU (p<0.001). In our sample, AN subjects (particularly those with AN-R) who display more intra-punitive DS, showed higher levels of I (p=0.002), ASC (p=0.006) and SI (p=0.004) at EDI-2. Intra-punitive DS appear to more significantly determine increased levels of asceticism, low self-esteem and suicidality as core component of clinical symptomatology in AN-R sample. Subjects with less levels of interoceptive awareness, higher bulimic impulsiveness and higher levels of asceticism appear to mainly display immature DS. Furthermore, according to our findings, BN subjects with higher bulimic impulsiveness and interpersonal distrust display more immature intra-punitive DS.

Furthermore, research has consistently linked AN (particularly AN-R) to personality traits such as introversion, conformity, perfectionism, rigidity, and O-C features [36-39]. The picture for BN is more mixed. Traits such as perfectionism, shyness, and compliance have consistently emerged in studies of individuals with BN or with AN, although research has often found

bulimic patients to be extroverted, histrionic, and affectively unstable [40-43]. A general association between a specific personality disorder style and ED has been well-documented as well [39, 44-46]. According to our findings, it has been documented a more higher prevalence of O-C personality traits amongst AN (vs BN) subjects whilst borderline personality traits amongst BN subjects. ED subjects who manifest comorbid personality traits clinically significant appear to more frequently use immature DS, particularly projective defenses. Moreover, a significant correlation has been found in ED sample with comorbid narcissistic personality traits who usually display more aggressive and projective DS, compared to other personality traits. Aggressiveness and aggressive DS appear to be extremely relevant both in AN and BN sample with comorbid narcissistic personality disorder, particularly in subgroup affected with AN-B/P. A significant correlation has been found in AN subjects with comorbid avoidant personality disorder and higher levels of intropunitive DS compared to BN subjects. Overall, our findings appear to be significantly consistent with previous literature [6, 39, 43, 47-48]. The style of personality pathology usually influences the style of eating pathology with restrictive personality pathology contributing to restrictive eating pathology (AN-R), and impulsive personality pathology contributing to impulsive eating pathology (AN-B/P and BN) [6, 39, 47]. For instance, AN-R subjects are most commonly associated to an O-C, avoidant or dependent personality traits [38-39]. Whereas O-C, avoidant, borderline, dependent and paranoid personality traits have been most frequently associated with AN-B/P and BN [43, 48]. In particular, AN-R is mainly characterized by high levels of personal control and restraint, a multidimensional perfectionism inflexibility and rigidity and obsessive-compulsive personality [39].

Despite preliminary evidence about the importance to specifically assess and personalizing diagnostic and therapeutic intervention in EDs, also taking into account the role of personality and DS, few studies have been published on the topic and assessed ED subjects by using standardized questionnaires for measuring defense mechanisms, including the defense mechanism rating scale (DMRS) and the Defense Mechanism Technique modified (DMTm) [13, 23].

The individual pattern of DM may mature across time, change in response to certain therapeutic interventions such as psychotherapy, or negatively/positively vary as reaction to some major life events, including catastrophic, emergency situations or individual crisis [17-20]. Previous findings reported that DM may be strongly related to personality traits and, in turns, a specific pattern of personality traits may predict individual pattern of DM [21-23]. Thus, defense patterns represent a core component of personality, by suggesting that an unbalance between immature versus mature defenses may negatively impact on the development of the personality and psychopathological conditions [24]. In this regards, as the DM usually act by influencing the way on how a subject perceives the reality and copes with stressful issues and/or conditions, a DM pattern may directly or indirectly influence the onset or worsen previously diagnosed psychiatric conditions, including EDs [6, 17, 19].

Therefore, to the best of our knowledge, the present study represents the first study aimed at specifically assessing DS by using DMI in a sample of outpatients affected with an ED. However, limitations of the current study include that it is a retrospective chart review with an uncontrolled and convenient sample of a relatively small size. Furthermore, our assessment does not take into account potentially modifications in DS over the time, due to treatment and, in particular, psychotherapy. Therefore, this limits conclusions that can be made regarding specific defense components in ED and their potential role in mediating and influence treatment and clinical course in ED as the present study does not allow to evaluate treatment outcomes and how these DS may influence dropout and prognosis in ED. Future research should seek to address which components and/or combinations of DS are most efficacious in improving patient outcomes and which treatments should be preferred in a specific AN versus BN patients depending on their DS profile and associated personality features. Despite these limitations and the ongoing challenges of implementing and studying such DS in ED sample, these preliminary findings indicate that ED subjects more frequently display immature DS which may influence a specific symptomatological pattern and may be in turns influenced by specific personality profile. Furthermore, “sub-threshold” personality functioning disturbance or specific personality disorders (PD) as well as maladaptive and immature DS have been documented to be more likely associated with specific clinical manifestation of EDs and may influence treatment outcomes and prognosis of EDs [49-50]. Therefore, a first assessment and evaluation of a specific DS pattern and associated personality traits should be always taken into account for carefully perform and integrate a personalized clinical and therapeutic approach in EDs. Finally, more research directions

should specifically address other diagnostic subgroups, including BED and OSFED.

DISCLOSURE STATEMENT

All authors declare they do not have any financial support or relationship that may pose a conflict of interest. The authors declare that have no competing interests.

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AVAILABILITY OF DATA AND MATERIALS

The dataset used and analysed during the current study is available from the corresponding author on reasonable request.

AUTHORS' CONTRIBUTIONS

Study design was developed by LO and SG. LO, SG and GO were responsible for recruitment and data collection of participants. Data analysis was performed by SG. LO and GO wrote the manuscript draft. UV served as senior supervisor and revised the manuscript draft. All authors have approved the final manuscript.

ABBREVIATIONS

AN: Anorexia nervosa;

AN-R: AN-restrictive type;

AN-B/P: AN-bulimic/purging type;

ANOVA: Analysis of Variance;

ASC: Asceticism;

BD: Body dissatisfaction;

BED: Binge Eating Disorder;

BMI: Body Mass Index;

BN: Bulimia nervosa;

DM: Defense mechanisms;

DMI: Defense Mechanism Inventory;

DS: Defense style;

DSM-5: Diagnostic Statistical Manual of Mental Disorders-5th edition;

DT: Drive for thinness;

EDs: Eating disorders;

EDI-2: Eating Disorder Inventory-2;

I: Ineffectiveness;

IA: Interoceptive awareness;

IP: Interpersonal distrust;

IR: Impulse regulation;

MF: Maturity fears;

O-C: Obsessive-compulsive;

OSFED: Other Specified Feeding and Eating Disorders;

P: Perfectionism;

PD: Personality Disorder;

PRO: Projection;

PRN: Principalization;

REV: Reversal;

SCID-5-PD: Structured Clinical Interview for DSM-5® Personality Disorders;

SCID-5-SPQ: Self-Report Personality Questionnaire;

SD: Standard deviation;

SI: Social insecurity;

TAO: Turning against the object;

TAS: Self-blame.

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