

Anxiety and Defense Styles in Eating Disorders

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ABSTRACT

This study investigates anxiety and defense styles in eating disorders. Seventy eating disorder (ED) patients and fifty-one female matched control subjects completed State and Trait Anxiety Inventory (STAI) and 88-items Defense Style Questionnaire (DSQ). ED patients were more anxious in actual situations and more anxiety prone in general. They relied on maladaptive action and Image distorting defense style. Bulimic anorexic (BAN) patients and bulimia nervosa (BN) patients differed in defense styles from restrictive anorexic (RAN) patients who displayed no significant difference in either state and trait anxiety or in defense styles when compared to healthy patients. Different levels of anxiety and ego defense maturity are present in ED patients. The almost normal ego functioning of RAN patients could be explained by pseudomaturity, tendency to control external and internal environment and the unconscious efforts to imitate normality to avoid conflicts.

Key words: eating disorders, anxiety, defense style.

Introduction

Anxiety states are characterized by subjective feelings of tension, apprehension, nervousness and worry and by activation or arousal of the autonomic nervous system¹. In eating disorder (ED) patients the central preoccupation with weight is based on intense fear of fatness. There is always a high rate of anxiety

present, particularly in relation to food and eating. Besides fear of putting on weight, the patients tend to suffer from insecurity in social situations; they feel uncomfortable with their body being exposed to critical views. Another feature is perfectionism and high expectations in professional performance, which can also

lead to increased anxiety. Cooper² argues that anxiety symptoms are a direct result of the primary ED because there is usually a marked improvement in mental state and social functioning produced by normalization of weight and eating habits.

The research on human anxiety has started with the development of theoretical constructs and scales created for measuring anxiety. In 1966 Spielberger³ created the inventory based on concepts of state and trait anxiety. The research with state and trait anxiety concept has been extensive particularly in investigating the effects of anxiety on performance and academic achievements. In psychiatric and psychosomatic disorders studies included neuroses, depression and schizophrenia but also the role of anxiety was studied in number of psychosomatic illnesses. Anxiety has not been so widely investigated in ED patients except in relation to co-morbid states such as simple phobias or panic disorders. Although anxiety symptoms are not considered important in etiology or prognosis of eating disorders we thought it would be interesting to look at the relationship between actual anxiety and generally felt anxiety and mechanisms of defense in ED patients.

Defense mechanisms are by definition individual's automatic psychological response to internal or external stressors or emotional conflicts triggered by signal anxiety arising whenever internal wishes or drives conflict with internalized prohibitions or external reality constraints⁴. S. Freud first described them in 1894⁵. He suggested that there may be a special connection between forms of defense and particular illnesses and also differences between defenses according to age at which they first develop⁶. Mechanisms of defense were investigated with clinical assessment methods and self-report instruments particularly in regard to various aspects of psychopathology. In the course of different investigations it be-

came clear that defenses could be organized hierarchically and that each person usually deploys several defenses and is characterized by a defensive style⁷.

Investigating the relationship between defenses and eating disorders Steiger, van deer Feen, Goldstein & Leichner⁸ found that patients with any ED subtype exhibited more maladaptive and image distorting and fewer mature style defenses than controls. Steiner⁹ found that patients with depression or normal-weight bulimia endorsed more immature defenses than the restrictive anorexic patients or bulimic anorexic patients who also endorsed more immature defenses than normal controls adolescents. Tordjman, Zittoun, Ferrari, Flament & Jeammet¹⁰ found significant difference in psychological functioning between control subjects and ED patients particularly in use of projection, undoing and sublimation. So far, there has been no proof that ED patients exhibit any specific combination of defenses.

The aim of this study was to investigate state and trait anxiety and the use of defenses in ED patients with particular emphasis on anorexia nervosa (AN) subtypes and normal control subjects.

Subjects and Methods

Seventy female ED patients referred to The Clinic for Psychological Medicine for outpatient psychotherapy have been invited to participate in this study. During the assessment procedure the patients were diagnosed with ED using the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV)¹¹ criteria. Fifty-one matched control subjects were recruited by their family doctors among the adolescents and young adult females with no history of eating disorders.

Measures

In dealing with patients the assessment consisted of semistructured psycho-

therapeutic interview prepared to collect the basic information on patients' and family background, onset and features of ED and weight and height measurements.

State-Trait Anxiety Inventory (STAI)³ is a widely used instrument comprising two scales. The S_Anxiety scale (STAI Form X1) consists of 20 items evaluating how the subjects feel right at that moment and T_Anxiety scale how someone generally feels. These scales are used in assessing clinical anxiety in neurotic and depressed patients. Trait anxiety refers to anxiety proneness and differences between people in their tendency to perceive stressful situations as dangerous or threatening with elevations in the intensity of their state anxiety (S_Anxiety). The stronger the anxiety trait, the more probable that the individual will experience more intense elevations in S_Anxiety¹.

The Croatian version of the 88-items Defense Style Questionnaire (DSQ) was used in this assessment. The instrument was first developed by Bond, Gardner, Gautier, Goldenberg & Oppenheimer¹² as a self-appraisal measure of conscious derivatives of defense mechanisms, automatic psychological processes that protect the individual against anxiety and from the awareness of internal or external dangers or stressors. DSQ consists of 88 items on a 9-point scale comprising 24 mechanisms of defense. Factor analyses performed in the process of creating the instrument showed that defenses tend to cluster into styles and that the defenses can be ranked on a developmental continuum from Maladaptive action style (immature defenses such as passive aggression, regression, acting out), Image distorting style (primitive idealization, splitting, denial, omnipotence, devaluation), Self-sacrificing style (pseudoaltruism, reaction formation) and Adaptive style (sublimation, humor). The instrument un-

derwent several changes and improvements in the following years. In literature we can find several variations of the DSQ as well as different ways used for processing the obtained data. We have decided to follow the suggested scoring instructions offered in the manual provided by Bond & Wesley¹³.

Procedures

The patients and their mothers completed the questionnaires individually in the clinic after the assessment had been done by qualified psychiatrists. The instrument was introduced to them after obtaining the signed written informed consent from the patient and the parents. Members of the matched control group, after being informed about the study, completed the questionnaire in the GPs offices. In total, 129 subjects entered the study and were assessed by DSQ and STAI instruments. STAI questionnaire in 5 subjects and DSQ in 2 subjects were not adequately fulfilled, or subjects refused to provide answers for both studied instruments.

Statistical analysis

In the study, the variables were at first analyzed by descriptive methods. Target variables of the study were analyzed by ANOVA, with Sceffe test for post-hoc analysis. All tests were performed at $\alpha = 0.05$. Data analysis was performed by Statistica 6.0 software package.

Results

Demographic data

Basic demographic characteristics of studied groups are displayed in Table 1.

Analyzed groups did not differ in age. Expectedly, they differed by Body Mass Index (BMI), (ANOVA df = 3; F = 30.47; p < 0.0001), which was significantly lower in AN group than in all other groups.

TABLE 1
DEMOGRAPHIC CHARACTERISTICS OF STUDY GROUPS

	AN	BN	EDNOS	Control group
N (% from total)	27 (22.1)	42 (34.4)	6 (4.9)	47 (38.5)
Age (mean ± SD)	19.9 (4.4)	20.6 (3.4)	19.8 (2.8)	21.8 (2.7)
Sex (female / male)	27/0	42/0	6/0	47/0
Body mass index (mean ± SD)	16.4 (1.4)	20.2 (2.6)	21.8 (3.3)	21.1 (2.2)
Duration of disorder (mean ± SD)	2.8 (2.8)	3.1 (1.5)	1.3 (0.5)	—

AN = Anorexia nervosa; BN = Bulimia nervosa; EDNOS = Eating disorder not otherwise specified

TABLE 2
A_STATE AND A_TRAIT SCORES AS EVALUATED BY STAI (X FORM)

Score		AN	BN	EDNOS	Control group
	N	27	42	6	47
A_State	X	48.4	48.3	45.2	36.3
	SD	12.2	12.4	16.2	9.2
A_Trait	X	53.2	56.8	54.2	42.1
	SD	12.2	10.1	6.9	7.8

Except for this difference, the BMI of control group was comparable with bulimia nervosa (BN) group and eating disorder not otherwise specified (EDNOS) group. Disorder in AN group was similar in duration as in BN group. Although the duration of illness among AN patients was more than double than in EDNOS group, statistically significant differences did not appear, due to a sample size limitations of EDNOS group.

State and trait anxiety

Descriptive statistics of State and Trait scores of STAI are listed in Table 2.

One-way analysis of variance showed that both State ($df = 3$; $F = 10.424$; $p < 0.0001$) and Trait scores ($df = 3$; $F = 18.648$; $p < 0.0001$) differed between the analyzed groups. In A_State score AN patients ($p = 0.0004$) and BN patients ($p < 0.0001$) had significantly higher scores

than controls. In A_Trait scores all ED patient groups differed significantly from the control group (AN: $p = 0.0001$, BN: $p < 0.0001$, EDNOS: $p = 0.047$). There were no statistically significant differences in A_State and A_Trait scores between the ED patients groups when compared individually.

Having in mind that the AN group was actually formed by thirteen patients with restrictive anorexia nervosa (RAN) and fourteen with bulimic anorexia nervosa (BAN) subtype the separate analysis was performed to evaluate the differences between the subtypes. The mean scores on State anxiety for RAN patients was 41.5 ± 11.3 , and Trait anxiety 46.2 ± 11.4 . In BAN patients the mean scores for State anxiety were 54.8 ± 9.4 and for Trait anxiety 59.8 ± 8.9 in STAI Trait.

ANOVA with 5 groups again displayed significant differences in State anxiety

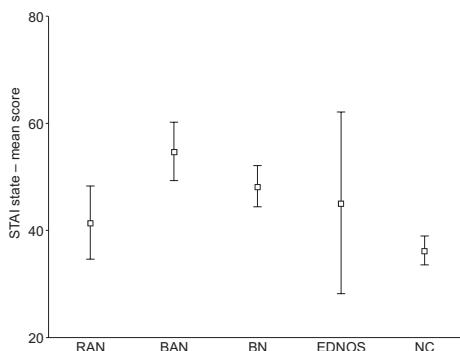


Fig. 1. Mean STAI State score and 95% confidence interval of means.

($F = 10.89$; $p < 0.0001$) and Trait anxiety ($F = 19.37$; $p < 0.0001$) scores. State anxiety score was significantly lower in RAN patients than in BAN patients ($p = 0.0048$). There was a statistically significant difference in State anxiety scores between BAN patients and normal controls ($p < 0.0001$). In Trait anxiety scores RAN patients differed significantly from BAN patients ($p = 0.0007$) and BN patients ($p = 0.012$) while only BAN patients differed significantly from normal control subjects ($p < 0.0001$).

Defense styles in eating disorder patients and control group

Differences in defense styles were analyzed in 122 subjects in total. The final sample consisted of 27 patients suffering from AN, 42 from BN and of 47 healthy controls. Six patients fulfilled DSM-IV diagnostic criteria neither for AN, nor for BN, and were analyzed separately as EDNOS group.

Mean scores in defense styles, as assessed by DSQ, are presented in Table 3.

Significant differences between groups appeared in Maladaptive style ($df = 3$; $F = 17.568$; $p < 0.0001$) and in Image distorting style scores ($df = 3$; $F = 7.771$; $p < 0.0001$), whereas in Adaptive style ($df = 3$;

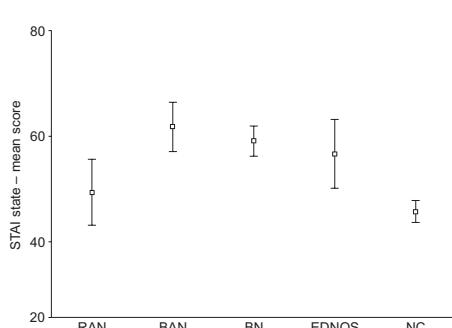


Fig. 2. Mean STAI Trait scores and 95% confidence interval of means.

$F = 0.164$; $p = 0.921$) and Self-sacrificing style ($df = 3$; $F = 0.852$; $p = 0.468$) there were no observable differences.

There were no statistical differences between different subgroups of ED patients in Maladaptive style scores. In Maladaptive style the statistically significant differences appeared between control group and all patients' groups in the study (with AN $p = 0.0007$; with BN $p < 0.0001$; with EDNOS $p = 0.001$), and Image distorting style they appeared only between controls and BN group ($p = 0.0001$).

Defense styles and anorexia nervosa subtypes

A separate analysis was performed to compare defense styles in AN subtypes. Out of 27 anorexia patients, 13 were of RAN type, and 14 of BAN type. The mean scores of RAN were 40.1 ± 6.9 in Adaptive style, 119.9 ± 36.3 in Maladaptive style, 52.8 ± 13.0 in Image distortion, 39.5 ± 10.3 in Self-sacrificing style. ANOVA with 5 groups in analysis again displayed significant differences in Maladaptive ($F = 20.26$; $p < 0.0001$) and Image distorting ($F = 7.06$; $p < 0.0001$) styles 41.5 ± 11.3 . In BAN patients the mean scores were 35.3 ± 7.8 in Adaptive style, 176.6 ± 39.4 in Maladaptive style, 64.7 ± 16.0 in Im-

TABLE 3
DEFENSE STYLE SCORES AS ASSESSED BY DSQ

Defense style		AN	BN	EDNOS	Control group
	N	27	42	6	47
Adaptive style	X	37.6	36.8	39.3	37.1
	SD	7.6	9.3	6.7	9.1
Maladaptive style	X	149.3	162.4	176.8	112.7
	SD	47.1	35.0	24.8	28.7
Image distorting style	X	59.0	64.0	60.5	48.9
	SD	15.6	16.8	6.4	13.8
Self-sacrificing style	X	40.1	37.8	40.2	36.4
	SD	11.0	11.9	8.7	8.5

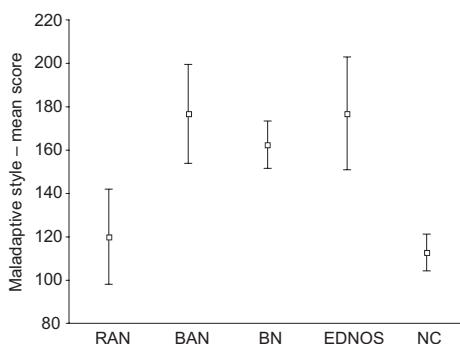


Fig. 3. Mean DSQ maladaptive style scores and 95% confidence interval of means.

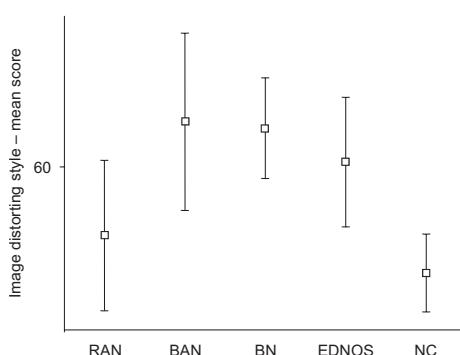


Fig. 4. Mean DSQ image distorting style scores and 95% confidence interval of means.

age distorting style, 40.8 ± 12.0 in Self-sacrificing style. The mean scores of RAN and BAN patients, together with other analysed groups are presented in Figures 1–4.

ANOVA with 5 groups in analysis again displayed significant differences in Maladaptive ($F = 20.26$; $p < 0.0001$) and Image distorting style ($F = 7.06$; $p < 0.0001$).

RAN patients differed significantly in Maladaptive style from BAN patients ($p = 0.0009$), BN patients ($p = 0.004$) and patients in EDNOS group ($p = 0.02$), but they did not differ from normal controls ($p = 0.974$). BAN patients differed in Maladaptive style also from normal controls ($p < 0.0001$). In Image distorting style RAN patients did not significantly differ from any of groups, whereas BAN patients group had a considerably higher score in average than normal controls ($p = 0.02$).

State and trait anxiety and defense styles

When analyzed in all 122 subjects in the study Maladaptive style of DSQ (State: $r = 0.586$, $p < 0.0001$; Trait: $r = 0.746$; $p < 0.0001$) and Image distorting style (State: $r = 0.324$; $p < 0.0001$; Trait: $r =$

TABLE 4
CORRELATION BETWEEN STAI STATE ANXIETY SCORES AND DSQ COPING STYLES SCORES

	DSQ styles									
	Adaptive			Maladaptive			Image distorting		Self-sacrificing	
	N	r	p	r	p	r	p	r	p	
AN	27	-0.3391	0.084	0.6259	0.000	0.5005	0.008	0.0940	0.641	
BN	42	-0.3443	0.026	0.5059	0.001	0.1578	0.318	0.0066	0.967	
EDNOS	6	-0.5682	0.239	-0.3282	0.525	-0.6404	0.171	-0.4806	0.335	
Normal controls	47	-0.1126	0.451	0.3998	0.005	0.0293	0.845	-0.1666	0.263	

0.360; $p < 0.001$) were highly positively correlated with both State and Trait scores of STAI. Consequently, Adaptive style was negatively correlated with State ($r = -0.236$; $p = 0.009$) and Trait ($r = -0.306$; $p = 0.001$) scores. No significant correlation could be observed when comparing Self-sacrificing style of DSQ with State ($r = 0.016$; $p = 0.864$) or Trait ($r = 0.095$; $p = 0.298$) scores of STAI.

STAI State (Figure 1) and Trait (Figure 2) scores fully correspond in their correlation pattern with defense styles scores of the DSQ. Maladaptive style is highly positively correlated with State and Trait anxiety scores in normal control subjects and in AN patients and BN patients. Image distorting style is significantly correlated with State and Trait scores only in AN patients. Self-sacrificing style displayed no significant correlation in any of studied groups.

It is worth observing that the AN group exhibited higher correlation between STAI State and Trait scores and DSQ Maladaptive and Image distorting style than any other groups. However, only the difference between correlation coefficients of Image distorting style and STAI State anxiety score, when AN patients are compared with healthy controls, is significant ($p = 0.044$).

Analyzing correlations in AN subtypes we found the distinct correlation pat-

terns. In RAN patients Maladaptive style ($r = 0.702$; $p = 0.007$) correlated with A_Trait anxiety score. In this group of patients Self-sacrificing style ($r = 0.703$; $p = 0.007$) correlated significantly with Adaptive style ($r = 0.701$; $p = 0.007$). BAN patients presented significant correlations between A_State score and A_Trait score ($r = 0.701$; $p = 0.005$). BAN patients had higher correlations between Maladaptive and Image distorting styles ($r = 0.667$; $p = 0.009$) than RAN patients ($r = 0.437$, $p = 0.136$) but without significant difference between the two groups.

Discussion

The study revealed elevated anxiety state and anxiety trait in ED patients compared to normal controls. BAN patients proved to be significantly more anxious than subjects in the control group and RAN patients. In the use of defenses the ED patients were more inclined to use Maladaptive and Image distorting style when compared to healthy subjects. BN patients were the ones who used significantly more Image distorting style than normal controls. Two unique features, one of BN and one of AN patients, were recognized. The one related to BN is that bulimic patients differ from other ED categories in having considerably more distorted self-image than normal

controls, a finding that was not present in any other group. A unique feature observed among AN patients is that only their Image distorting style is highly correlated with State and Trait anxiety scores, and that in AN group Image distorting significantly higher correlates with anxiety state than in normal controls.

Within the AN subtypes BAN patients were the ones who used most Image distorting style. Among the subjects using mostly Image distorting style we should expect that some could be classified as borderline or narcissistic type. There were no significant differences in the use of defense styles between the RAN patients and the control group. As expected there was a positive correlation present in the whole sample between Maladaptive and Image distorting style and anxiety state and anxiety trait scores; a negative correlation was present between Adaptive style and both anxiety scores. The results confirm that there is no distinct defensive style used in ED patients.

The significant limitation of this study was related to the sample itself i.e. the small number of patients included in AN subtypes. However, when we analyzed the subtypes of AN with the small number of examined patients in each group contrary to Steiner⁹ we found that RAN patients did not differ from normal control subjects in the use of mechanisms of defense. There was no difference in state and trait anxiety scores between RAN patients and control subjects. Several hypotheses could be made regarding these matters. First hypothesis could be related to the possible insensitivity of the applied instruments and measures of anxiety and defense styles in these patients. This hypothesis does not seem plausible since we have used the well-known and many times tested self-report questionnaires. Second hypothesis deals with the possible inclination of AN patients to be cautious and give the socially desirable answers

due to conflict avoidance. Although we know that these patients often resort to lies without much hesitation particularly in relation to food, eating and other relevant issues we do not consider this hypothesis credible particularly when two instruments used are giving the similar results. The third hypothesis deals with the idea that RAN patients indeed have still considerable ego strengths left so that they can control the anxiety by fairly normal combination of defense styles and use more mature mechanisms than other ED patients. Rather than an artefact this findings could be related to pseudomaturity. In a comparative study of premenarchal and postmenarchal AN Arnow, Sanders and Steiner¹⁴ found that premenarchal anorexic children display more mature defenses, contrary to all expectations but in accordance with the already well-known conscientiousness, high achievement, high conformity and overt compliance with demands of others or, in other words, pseudomature tendencies in anorexic patients. This kind of functioning is a unique adaptation to maternal disengagement when the child prematurely takes responsibility for their own self-regulation¹⁵. Positively enforced by environment, the child splits off and isolates the angry, needy and anxious part of itself. Once isolated, these unsupportable parts leave the person free to function in a seemingly mature way. The concept of pseudomaturity seems to be close to the concept of false self where the subject tries to be or to behave in a way she thinks that the object expects. Superficially, such a person has good social skills but her self-esteem is poor and she feels as a nonexistent, ineffective fraud. These kind of personalities can be often found among ED patients. There are differences between RAN patients and neurotic patients in relation to defenses, since it seems that anorexic patients do not use maladaptive defenses so much. Ultima-

tely, we could discuss whether, in RAN patient, the psychopathology is at all related to the drive and conflict problem. However, the need for the extensive control of drives is present and all the energy is channelled in one direction. Instead of various interests, fantasies and wishes the »drive for thinness« occupies the central place as if all libidinal tendencies are being replaced by a destructive force. The object relation theorists emphasize the core issue of symptoms as symbolic expressions of self and object representations and in self-psychological model symptoms of eating disorders are non-symbolic restitutive emergency measures used to stem the tide of disrupted self-states threatened with the loss of cohesion of the self¹⁶. Ego development, object relations and development of self are closely related but it seems that the core problem of RAN patients cannot be regarded as basically related to the weakness of ego, strength of drives or elevated anxiety. The almost normal ego defensive

functioning of RAN patients probably could be explained by their pseudomaturity, tendency to control external and internal environment and their unconscious efforts to imitate normality in order to avoid conflicts.

Steiner⁹ found that the older AN patient showed lower defense maturity suggesting that a longer illness was associated with a worse defensive functioning. In a great deal of BAN patients or BN patients in the first phase of illness the symptoms present were those of pure RAN. It seems that the patients who have limited resources of energy at their ego's disposal, get weaker in time and then the danger of transformation of RAN type into BAN or bulimia can easily emerge. It is also likely that the maladaptive defenses will take over.

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ANKSIOZNOST I OBRAMBENI STILOVI U POREMEĆAJIMA JEDENJA

S A Ž E T A K

U osoba oboljelih od poremećaja jedenja ispitani su anksioznost i mehanizmi obrane (obrambeni stil). Skupina od sedamdeset bolesnica koje pate od anoreksije nervoze, restriktivnog ili bulimičnog tipa, bulimije i nespecifičnih poremećaja jedenja i skupina od pedeset jedne osobe iste dobi i obrazovanja kao i bolesnice ispunile su upitnik za mjerjenje anksioznosti (STAI – X) i upitnik za procjenu obrambenog stila (DSQ). Pokazalo se da su bolesnice anksiozne u aktualnoj situaciji i općenito su sklonije razvoju anksioznosti. U svom se psihičkom funkcioniranju više koriste nezrelim (maladaptivnim) obrambenim stilom i obranama koje mijenjaju sliku stvarnosti. Unutar grupe bolesnica pronađene su razlike s obzirom na podvrstu poremećaja. Bolesnice s bulimičnim oblikom anoreksije i bolesnice s bulimijom značajno su se razlikovale od bolesnica s restriktivnim oblikom anoreksije, koje se pak po ankioznosti i obrambenom stilu nisu razlikovale od osoba iz kontrolne grupe. Zaključuje se da unutar skupine bolesnica s poremećajima jedenja postoje značajne razlike u razinama anksioznosti i zrelosti obrana ega. Sličnosti u ankioznosti i obrambenom stilu između osoba s restriktivnim tipom anoreksije i osoba bez poremećaja jedenja mogu se objasniti pseudozrelošću anorektičnih osoba, težnjom ka kontroli vanjske i unutrašnje stvarnosti te nesvjesnim imitiranjem normalnosti u cilju izbjegavanja konflikta.