Title: Mood and emotional symptoms in eating disordered patients

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Mood and emotional symptoms in eating disordered patients

Anna Brytek-Matera

Summary

Aim. This study evaluated the relationship between mood and emotional symptoms and disordered eating behaviours.

Material and methods. Sixty women with eating disorders were investigated. The control group consisted of 60 students. The Hospital Anxiety and Depression Scale and the Eating Disorder Inventory were applied in this study.

Results. It was found that anxiety symptoms in girls with anorexia nervosa significantly correlated with maturity fears, whereas in patients with bulimia they were significantly connected to a drive for thinness.

Conclusion. Occurrence of depression and anxiety symptoms suggest a necessity of complex medical and psychological treatment including focus on areas such as psyche and soma

anxiety / depression / anorexia nervosa / bulimia nervosa

INTRODUCTION

Emotional disorders (depression and anxiety) are frequently presented in literature because they are some of the most common symptoms in patients with eating disorders [1-3]. The sequential occurrence of the discussed disorders in relation to anorexia nervosa and bulimia is questionable: do depression and anxiety disorders precede anorexia nervosa and bulimia or are they secondary to it? This question is debatable. According to the research conducted by Bulik et al. [4], fear disorders precede the beginning of both anorexia and bulimia. The results of research by Godart et al. [2] also prove domination of anxiety disorders before anorexia nervosa occurs in about two third of cases i.e. 75% of examined girls (n=29). The authors suggest that the goal of eating disorders is to reduce the anxiety disorders. Other researchers claim that depression and anxiety disorders develop secondarily in relation to eating disorders. According to Diehl et al. [1], anorexia nervosa is a result of depression, anxiety concerning one's appearance (social physique anxiety), and excessive physical exercise. Also, Braun et al. [5] claim that anorexia and bulimia occur before depression and anxiety disorders.

Eating disorders may also coexist with depression and fear disorders (a number of authors [6, 7, 8] indicate a high occurrence of co-morbidity with eating and emotional disorders). In both cases, the etiopathogenic mechanism may be varied: biological (e.g. depression in affective bipolar disease, recurring depression), psychological (depression resulting from cachexia), or multi-factorial. In people with eating disorders, excessive concentration on their own appearance (very frequent dissatisfaction with their figure) and a desire to be slim or limiting meals often

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lead to obsessive and compulsive symptoms and affective disorders in the form of depression or dysphoria. Depression and anxiety disorders coexist (in different forms) with anorexia nervosa in 50%-75% [9]. Depression disorders are characterised by mood worsening (dejection), loss of interest and joy of life and decrease in life energy [10]. Low self-esteem, an obsessive personality, negative experiences in childhood, negative schemes of thinking (about oneself and others) hindering adaptation can be psychological factors in the development of depression [11].

As far as the causes of depression disorders are concerned, there are three main theories (biological, psychodynamic and cognitive models) which in fact complement one another. Each of them focuses on a different aspect of the disease. According to the biological model, depression is a disorder of body function. It is caused by a deficiency of biogenic amines which assist in transmission of nerve impulses in synapses between neurons [12]. In the psychodynamic model, the sources of depression disorders are found in anger internalization, excessive dependency on inner sources of self-esteem and helplessness in goal accomplishment [12]. The cognitive model, the closest to the author, assumes that the major cause of depression symptoms is the so-called cognitive triad: negative thoughts about oneself, surrounding reality (past and present experiences), and about the future [13].

Depression is regarded as a psychologic disorder characterized by intense emotional (sadness, fear, loss of joy of life, loss of interests, distancing of oneself, sense of alienation), cognitive (low self-esteem, negative picture of oneself, a sense of incompetence, self-criticism), motivational (lack of initiative, difficulty in taking decisions), and somatic symptoms (losing or gaining weight, sleep disorders, fatigue, feeling bad).

According to the definition suggested by Kaplan et al. [14] "anxiety is a psycho-pathological condition characterised by a sense of danger accompanied by increased activity of the autonomous nervous system." This negative emotional condition (inner process) is connected with the anticipation of danger coming from outside or inside the body, of which symptoms are anxiety, tension and feelings of being threatened.

Despite the fact that depression and anxiety are regarded as separate groups of psychologic disorders according to diagnostic criteria in DSM-IV and ICD-10, this classification distinction is not so clear in clinical practice and the results of examination [15]. Both these disorders interpenetrate (indicating a high rate of co-occurrence), however in some situations they may be clearly distinguishable diagnostic categories ("pure" anxiety without depression).

Aim of the study

This study was an attempt to determine the intensity of depression and anxiety as well as cognitive and behavioural aspects of eating disorders in patients with anorexia nervosa and bulimia nervosa. The relationship of depression & fear symptoms with behaviour typical of eating disorders (measured by means of EDI questionnaire) was examined.

MATERIAL AND METHODS

The clinical group consisted of 60 women who suffered from anorexia nervosa (n = 30) and bulimia nervosa (n = 30). Diagnoses were made by experienced clinicians using a structured interview based on ICD-10 criteria [10] and on DSM-IV criteria [16]. A control group was composed consisting of 60 "normal" female university students, who had never suffered from any eating disorder (Tab.1).

For assessment of the intensity of anxiety and depression, the *Hospital Anxiety and Depression Scale* by Zigmond and Snaith [17] was used. The scale includes separate scores for anxiety (HADS-A) and depression (HADS-D).

The Eating Disorder Inventory made by Garnier et al. [18] was also applied. It is an inventory concerning attitudes and behaviours related to eating and enables characterisation of cognitive behavioural aspects of eating disorders. Eight subscales were created based on literature reviews and large-scale field studies (e.g., drive for thinness, bulimia, body dissatisfaction, ineffectiveness, perfectionism, interpersonal distrust, interoceptive awareness and maturity fears).

Data collected in this study were processed by means of statistical methods included in the SPSS software version 12.0 (2004). To check the significance of differences between the examined groups, the ANOVA analysis of variance

Table 1. Subject charakteristics

Variable	Anorexia n = 30		Bulimia n = 30		Anorexia and bulimia n = 60		Control group n= 60		AN v CG	BN v CG	An & BN v CG	AN v BN
	M	SD	M	SD	M	SD	M	SD	p	p	p	p
Age (in years)	20.17	1.44	21.23	2.30	20.70	1.97	20.57	1.81	NS	NS	NS	NS
Body Mass Index	16.52	0.81	21.07	1.25	18.80	2.52	20.65	2.48	0.001	NS	0.001	0.001
Disease duration (in months)	32.69	11.06	31.20	14.30	31.93	12.72	–	–	NS	NS	NS	NS

AN v CG – anorexia nervosa versus control group, BN v CG – bulimia nervosa versus control group, An & BN v CG – anorexia nervosa and bulimia nervosa versus control group, AN v BN - anorexia nervosa versus bulimia nervosa

was used. The next stage of the research was to establish Pearson r- correlation coefficients between symptoms of depression and anxiety, and cognitive behavioural aspects of eating disorders. A significance level (*p)* of 0.05 was assumed (two-sided).

RESULTS

The analysis of results consisted of two stages. The first stage involved the analysis of mean scores of depression in the HADS scale and EDI questionnaire for experimental groups and the control group. In the second stage, relationships between depression and anxiety symptoms, and behaviour typical of eating disorders were considered.

In the comparison of the mean scores of depression and anxiety symptoms, significant differences between patients with eating disorders and the healthy population were found. In patients with bulimia, the level of depression and anxiety was significantly higher in comparison with the healthy students and the patients with anorexia nervosa (Tab. 2).

Table 2. Average results on HADS for individual groups

Hospital Anxiety and Depression Scale	Anorexia n = 30		Bulimia n = 30		Anorexia and bulimia n = 60		Control group n= 60		AN v CG	BN v CG	An & BN v CG	AN v BN
	M	SD	M	SD	M	SD	M	SD	p	p	p	p
Depression	3.40	1.54	6.26	2.98	4.83	2.76	4.01	3.27	NS	0.05	NS	0.001
Anxiety	8.20	1.80	12.30	3.71	10.25	3.55	9.63	4.11	NS	0.01	NS	0.001

Table 3. Comparisons on the EDI Scale for women with anorexia, bulimia and healthy controls groups

Eating Disorder Inventory	Anorexia n = 30		Bulimia n = 30		Anorexia and bulimia n = 60		Control group n = 60		An v CG	BN v CG	AN & BN v CG	AN v BN
	M	SD	M	SD	M	SD	M	SD	p	p	P	p
Drive for thinness	12.63	4.03	15.76	2.31	14.20	3.62	2.75	3.81	0.001	0.001	0.001	0.001
Bulimia	1.10	1.37	13.83	4.06	7.46	7.09	1.40	2.18	NS	0.001	0.001	0.001
Body dissatisfaction	17.26	7.05	19.63	3.29	18.45	5.58	7.35	6.67	0.001	0.001	0.001	NS
Ineffectiveness	10.83	5.40	13.06	5.45	11.95	5.49	2.78	3.58	0.001	0.001	0.001	0.05
Perfectionism	7.90	4.30	6.43	3.10	7.16	3.79	5.46	4.30	0.01	NS	0.05	NS
Interpersonal distrust	2.76	3.97	6.16	5.21	4.46	4.91	2.61	3.38	NS	0.001	0.01	0.01
Interoceptive awareness	9.66	6.40	17.33	4.07	13.50	6.58	2.10	2.94	0.001	0.001	0.001	0.001
Maturity fears	3.96	3.67	6.36	3.04	5.16	3.55	3.73	2.33	NS	0.001	0.01	0.01

The ANOVA analysis of variance showed statistically significant differences between cognitive behavioural aspects of eating disorders in the examined groups. Mean scores for particular groups are presented in Table 3.

The second stage of analysis provided information on relationships between depression and anxiety symptoms, and behaviour typical of eating disorders. Anxiety symptoms in girls with anorexia nervosa significantly correlated with maturity fears ($r = 0.40$; $p < 0.05$), whereas in patients with bulimia they were significantly connected to a drive for thinness ($r = 0.45$; $p < 0.05$).

Figure 1 shows results of a correlation analysis between the particular scales of EDI questionnaire and depression & fear symptoms in the group of patients with eating disorders.

Correlation coefficients between depression symptoms and cognitive behavioural aspects of eating disorders range from $r = 0.30$ to $r = 0.76$. Depression symptoms had a significant and positive influence on the drive for thinness ($p < 0.05$), bulimia ($p < 0.01$), interpersonal distrust ($p < 0.05$) and interoceptive awareness ($p < 0.05$). The highest correlation with depression symptoms was observed in bulimia and interoceptive awareness.

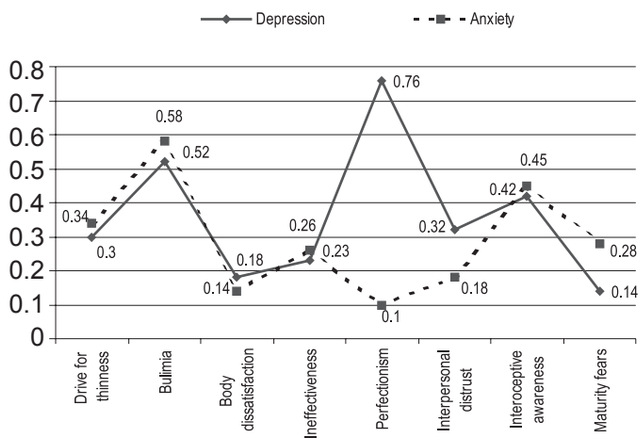

Figure 1. Pearson correlaations between HADS sale aand EDI questionnaire in the group of patients with eating disorders

Anxiety symptoms were strongly connected with the drive for thinness ($p < 0.05$), bulimia ($p < 0.01$), ineffectiveness ($p < 0.05$), interoceptive awareness ($p < 0,01$) and maturity fears ($p < 0.05$) (correlation ranged from $r = 0.28$ to $r = 0.58$). The highest correlation coefficients indicated bulimia and interoceptive awareness.

In the control group, depression symptoms had a significant positive correlation with inefficiency ($r = 0.25$; $p < 0.05$) and social distancing ($r = 0.40$; $p < 0.01$). Anxiety symptoms were significantly connected with ineffectiveness ($r = 0.29$; $p < 0.05$), interoceptive awareness ($r = 0.37$; $p < 0.05$), and interpersonal distrust ($r = 0.38$; $p < 0.05$).

DISCUSSION

Results of the research presented in this paper show that girls with bulimia nervosa are characterised by a significantly higher level of depression and anxiety in comparison with the control group and the group of patients with anorexia. A higher intensity of emotional disorders in patients with eating disorders in comparison with the healthy population was also proven by other authors [19, 20]. In the research conducted by Dagleish et al. [21], patients with bulimia (n=15) had a significantly higher level of depression and anxiety than the control group (n=22) (the same results were achieved in the presented research), whereas in comparison with patients with anorexia nervosa (n=18), the level was significantly lower (the author of this paper achieved opposite results). Piran et al. [22] observed that in patients with bulimia, binge frequency and purging behaviour correlated with a high level of anxiety. Results of the research conducted by Victor Fornari et al. [23] proved that the occurrence of anxiety disorders is two or three times as serious in people suffering from eating disorders than in the healthy population.

The results achieved by Herzog [24] suggest that in 23% of the bulimic women examined, a high level of depression was observed. Altogether, 842 patients with eating disorders took part in the examination.

In the presented research the group of patients with anorexia nervosa was characterised by a significantly lower desire to stay slim, less frequent bulimic behaviour, higher inability to control one's own life, lower distrust in interpersonal relations, lower awareness of one's own body and lower fear of maturity.

Similar results were achieved by Bloks et al. [25]. The difference in mean scores of both groups examined by them (68 patients with anorexia nervosa and 42 patients with bulimia nervosa) was statistically significant. In comparison with the girls with anorexia nervosa, the girls with bulimia achieved lower scores on the following scales: drive for thinness, bulimia, ineffectiveness and awareness of stimuli coming from within the body (interoceptive awareness). Contrary to the research results achieved by the author, the group of girls with anorexia nervosa examined by Bloks et al. [25] was characterised by a bigger social distance (interpersonal distrust) and higher fear of maturity than patients with bulimia. In addition, the statistically significant differences in the examined groups occurred in the scale of dissatisfaction with one's own body and perfectionism. In girls with anorexia nervosa, this dissatisfaction was lower than in patients with bulimia. Also, on the scale related to perfectionism, anorectics achieved a lower score than the bulimics. In the research presented by the author, statistically significant differences were observed throughout all the scales of the EDI questionnaire (group with eating disorders versus the control group). Similar results were obtained by Espelage et al. [26]. The group of female patients with eating disorders (n = 44) achieved significantly higher results than the control group (n = 44) on all scales, except for the fear of maturity (lack of statistically significant differences).

Observation of the examined group of girls with eating disorders displayed a development of anxiety symptoms along with a desire to stay slim, bulimic behaviour, inability to control one's own life, heightened awareness of one's own body and a fear of maturity. Depression symptoms stayed independent of the drive for thinness, bulimia, distrust in interpersonal relations and interoceptive awareness.

In patients with eating disorders, the desire to stay slim is meant to reduce unpleasant feelings and emotions and thus improve mood. Patients' conviction of the need to be slim and excessive preoccupation with their appearance means to them happiness and fulfilment of their life desires. It also increases their determination to reduce the amount of food they consume, which in turn improves their mood. Excessive concentration on the shape and weight of their bodies causes that the main determinant of their self-esteem is a slim figure. The desire to be slim is constantly accompanied by a fear of putting on weight or obesity as well as by developing a strong subjective feeling of body dysmorphic disorder and thus one's own *ego.* Wilson et al. [27] suggest that the definition of anorexia nervosa should be replaced with a new notion: fat phobia / fear of being fat. The authors claim that it should be treated as one of the factors predisposing to the psychopathology of eating disorders. A tempting hypothesis could be that in patients with anorexia nervosa, the fear of being obese reaches the level of phobia and leads to both biological and psychological cachexia, while in women with bulimia it is displayed by compensatory behaviour (due to inability to control the amount of consumed food, the bulimics indulge and act on impulse to overeat, but to maintain weight they purge themselves).

The relation between bulimic behaviour and depression & anxiety symptoms is a frequent topic of research. Results of the research conducted by Katzman and Wochlik [28] prove that depression positively correlates with bulimic behaviour and the drive for thinness. There is also research which treats anxiety as an axial element of eating disorders. According to this approach, patients with bulimia do not vomit to compensate for overeating, but they overeat to stimulate later vomiting, which reduces fear [29].

Distrust in interpersonal relations (exemplified by a defensive attitude towards other people) also significantly influences the experience of unpleasant emotions. Due to the fact that people with eating disorders are characterised by heavy social dependence (need for social approval, attracting people's attention), staying in close relationships with other people seems to

significantly influence emotional mood. Since girls with anorexia nervosa display high sensitivity to social criticism, any disapproval, negative judgement or other people's opinion causes fear or depression reactions [30]. On the other hand, the act of distancing themselves in social situations may result from perception of the surroundings as hostile, aggressive or egocentric. A negative picture of other people may be the effect of using destructive, defensive mechanisms of projection by people with a negative picture of themselves [31]. By distorting social reality, these mechanisms intensify interpersonal conflicts and thus emotional and social isolation.

Inability to control one's own life as well as lack of awareness of stimuli coming from one's own body may influence long-lasting depression and anxiety. In patients with anorexia nervosa and bulimia, cognitive processes are significantly disordered. According to Laessle et al. [32] they influence the development and persistence of depression. Bruch [33] claims that girls with eating disorders have an unrealistic picture of their body and are not able to correctly recognise physical sensations (esp. those related to hunger and satiety). They also have a sense of ineffectiveness of their own activity. Lask and Bryant-Waugh [34] suggest that patients with anorexia nervosa perceive their activity only as secondary to other people's demands or they feel subordinate to requirements of situations, which leads to the loss of awareness of one's own needs and thoughts and inability to recognize signals coming from one's own body.

In patients with anorexia, anxiety symptoms were related to a fear of maturity. While explaining the pathogenesis of anorexia nervosa, authors often emphasise an unconscious refusal to be an adult and have a woman's body. Supporters of psychoanalysis attribute a symbolic meaning indicating deeply hidden inner conflicts. Girls deny their own sexuality, and as a result they attempt to deprive themselves of outer female features. This leads to an assumption that the cause for the disorder may lie in a fear or reluctance to become an adult woman, or at least, uncertainty related to one's own possibilities of being woman and meeting sexual and procreational consequences of this role [35]. People with eating disorders are characterized by a negative attitude to sex, and as a result have problems with perception of one's own sexuality (giving up sex in anorexia nervosa and numerous sexual experiences in bulimia).

Eating may be treated as "a source of love, which is relatively constant and accessible" [36]. Refusing this pleasure means a lack of love, and the person who undertakes a draconian diet (conscious refusal to eat) or excessively overeats and purges oneself feels unloved. It may be supposed that through one's own behaviour one tries to prove to oneself that he or she can afford to be independent and self-sufficient. This mistaken interpretation results from the inability to recognize one's own problems.

CONCLUSIONS

The obtained results indicate that the level of depression and anxiety in patients with bulimia is significantly higher in comparison with the control group and the group of patients with anorexia nervosa. Occurrence of depression and anxiety symptoms suggest a necessity of complex medical and psychological treatment including focus on areas such as psyche and soma.

Behaviour characteristic of the examined girls with eating disorders displayed intensification of anxiety symptoms along with a drive for thinness, bulimic behaviour, inability to control one's own life (ineffectiveness), disorder in the perception of stimuli coming from one's own body as well as a fear of maturity. Depression symptoms, however, remained dependent on the desire to stay slim, bulimia, distrust in interpersonal relationships and the awareness of one's own body.

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