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Anorexia nervosa and emotional symptoms: a cross-cultural study

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SUMMARY

Aim. The present study was undertaken to assess the relationship between emotional symptoms and locus of control in female patients with anorexia nervosa of different nationalities.
Subjects and methods. The sample comprised 62 anorexic patients and 117 healthy women. The Hospital Anxiety and Depression Scale and the Internal Powerful Others and Chance Scale were applied in this study.
Results. In the dimension of anxiety, depression and locus of control significant statistical differences were observed in clinical groups of different nationalities and between these groups and the control groups.
Conclusion. The results confirm studies which concluded that anxiety and depression symptoms and defective experience of control are fundamental factors in the psychopathology of anorexia nervosa.

eating disorders / emotional symptoms / cross-cultural study

INTRODUCTION

Anorexia nervosa coexists with other types of disorders. Problems with finding one's own identity, excessive concentration on appearance (body dissatisfaction), attempting to be slim or limiting meals lead not only to psychic discomfort but also depression, anxiety and/or dysphoria.

In the literature related to the subject there is research which proves that depression and anxiety disorders precede anorexia nervosa [1] and research that indicates that affective disorders result from anorexia [2]. A number of researchers emphasise coexistence of the discussed disorders [3, 4, 5]. Depression disorder coincidence in patients with anorexia ranges from 2.2% to 35.5% [6, 7]. It is statistically higher than in healthy people. There are also data which suggest that it ranges from 25% to 88% [in 8]. Furthermore, it is estimated that frequency of depression disorders occurrence in lifetime of patients with anorexia nervosa is two or four times higher than in the healthy population [9, 10]. The patients also suffer from anxiety disorders more frequently (from two to three times as much) [11].

The main part of the presented research is focused on the relationship between depression and anxiety disorders, and anorexia nervosa. Emotional symptoms are not the only variable. Another one is locus of control. It originates from the social learning theory. It is not a constant personality trait but the result of the development process. It is an acquired mechanism compliant with the principles of instrumental conditioning [12]. According to Rotter [in 13] the variety of actions undertaken by humans results from the perception of a casual relationship between behaviour and its effects. In his view, a person with external locus of control perceives that results of his/ her actions depend

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on random factors (luck, coincidence) or other people. That kind of person is convinced that she has no influence on actions undertaken by him/her, and, consequently on events happening around him/her. Rotter claims that belief in the external locus of control and thus avoiding taking on responsibility, might be a kind of defensive mechanism enabling this person to maintain self-esteem in the case of failure. In contrast, in the case of people who have confidence in their own ability to influence the course of events and believe that the results of their own actions depend on them and not external factors, have an internal locus of control. A great deal of research shows that people with anorexia nervosa have much lower self-control [14, 15].

AIM OF THE STUDY

The main research issue is the question: do depression and anxiety symptoms and locus of control occur to the same or different extent in Polish and French girls suffering from anorexia nervosa?

Since it was an intercultural research, the choice of different groups (clinical and control) was evident. The author of this paper attempts to verify the influence of socio-cultural factors on behaviour of women with eating disorders. The author supposes that differences within the groups may differ due to various models of upbringing (social and family standards) as well as the social and economic situation in Poland and in France.

SUBJECTS AND METHODS

The research group consisted of 30 Polish and 32 French girls with anorexia nervosa diagnosed according to the DSM-IV criteria [16]. The Polish part of research was conducted in the Erickson Institute in Katowice and among former patients of the Adolescent Psychiatric Ward in Sosnowiec and in France in the St. Cross Hospital in Metz and in the Children and Adolescent Psychiatric Ward in Nancy-Brabois in Lotharyngia. There were two control groups: the first one consisted of 60 Polish students and the second one consisted of 57 French students (Tab. 1).

In the research, the authors used an anonymous questionnaire which included general personal data (sex, age, education), data related to family life (family status, having a sibling, parents relationship: living together, divorced or dead), health condition (applying diets before and at present, giving up meals and their frequency: in the morning/afternoon and in the evening, everyday body weight check, body dissatisfaction) and the course of disease (length of time within which the problems related to the disorder occurred, diagnosis of the disorder, hospitalisation, use of psychological or psychiatric treatment). The analysed variables are presented in Table 2.

In addition to this the Hospital Anxiety and Depression Scale (HADS) by Zigmond and Snaith was used in the research [17] (in the French adaptation by Lépine et al [18]) which measures the actual level of emotional disorders (with elimination of somatic symptoms). This scale consists of 14 items and is based on self-evaluation. Each item has a 4-point scale (range 0 – 3). Results achieved by means of HADS enable to determine the intensity of anxiety symptoms (HADS-A) and symptoms of depression (HADS-D). For each subscale, the results range from 0 to 21. Achieving a result oscillating between 0 and 7 is treated as being in the normal range. Results ranging between 8 and 10 points indicate mild intensity of anxiety and depression symptoms whereas results over 11 suggest severe intensity of the discussed disorders.

Another scale used in the research was the Internal Powerful Others and Chance Scale by Levenson (in the French adaptation by Loas et al. [13]). In order to verify application of the IPC questionnaire in Polish population and validate it, factor analysis was used [19]. Cohesion of each factor was assessed by means of Cronbach's Alpha Reliability Coefficient. Basing on factor analysis, three groups were distinguished: (a) belief in an internal locus of control – internal compliance $\alpha = 0.58$ (b) belief in an external locus of control (belief that some important people assume the control) – internal compliance $\alpha = 0.69$ (c) belief in luck/coincidence – internal compliance $\alpha = 0.68$.

The achieved data were statistically processed, which was conducted by means of SPSS, version 12.0 (2004). For statistical calculations the ANOVA variance analysis was applied. In the next research stage, coefficients of r-Pearson correlation

Table 1. Characteristics of the research groups

Variable	Polish anorexic patients (n = 30)		French anorexic patients (n = 32)		Polish healthy subjects (n = 60)		French healthy subjects (n = 57)	
	M	SD	M	SD	M	SD	M	SD
Age (in years)	20.17 **	1.44	17.66 ^	1.30	20.57	1.81	20.84	1.91
Body Mass Index (BMI)	16.52 ^	0.81	16.69 ^	2.31	20.65	2.48	21.41	2.82
Duration of disease (in moths)	32.69	11.06	23.85	16.03	-		-	-

** Significance of differences between the Polish group with anorexia nervosa and the French group with anorexia nervosa ($p < 0.001$)

^ Significance of differences between research and control groups ($p < 0.001$)

Table 2. Numerical and percentage values of selected variables in the clinic research groups

VARIABLES		Polish patients with anorexia nervosa (n = 30)		French patients with anorexia nervosa (n = 32)	
		N	%	N	%
Education	Grammar school	-	-	2	6
	Secondary school	1	3	22	69
	Studies	29	97	8	25
	Finish studies	-	-	-	-
Parents' situation	Live together	19	63	9	28
	Be divorced or separated	2	7	23	72
	Father's death	9	30	-	-
Brothers and sisters	No	9	30	8	25
	Yes	21	70	24	75
Ever being on a diet	No	1	3	11	34
	Yes	29	97	21	66
Being on a diet now	No	17	57	18	56
	Yes	13	43	14	44
Conscious resignation from meals	In the morning	27	38	12	38
	In the afternoon	27	90	10	31
	In the evening	28	93	6	19
Everyday weight check	No	6	20	16	50
	Yes	24	80	16	50
Frequency of everyday weight check	Once a day	0	0	5	30
	Twice a day	3	12	5	30
	Three times a day	19	80	4	23
	More than three times a day	2	8	2	17
Body satisfaction	No	26	87	23	72
	Yes	4	13	9	28
Hospitalization due to the disease	No	7	23	10	31
	Yes	23	77	22	69
Present psychological / psychiatric treatment	No	8	27	5	16
	Yes	22	73	27	84

between depression symptoms and locus of control were estimated. $P < 0.05$ was accepted as statistically significant.

The analysis of anxiety and depression and dimensions of locus of control was conducted in the group of women with anorexia nervosa (Polish females against French females). Additionally, each group was compared with the control group (in the Polish population: patients with anorexia nervosa versus healthy students, in the French population: girls with anorexia nervosa versus healthy students).

RESULTS

Results of the statistical analysis have been presented in the tables below and content analysis has been made. First anxiety and depression symptoms in patients with anorexia nervosa were compared in the Polish and French groups. Another comparison was also made: results in research and control groups (Tab. 3). Afterwards, the level of anxiety and depression were examined in patients with anorexia nervosa. Then locus of control was compared in the research and control groups (Tab. 5). The last stage of the research was a discussion of correlations between depression and anxiety, and locus of control in patients with anorexia nervosa, of both nationalities (Tab. 6).

The Polish group of women with psychic anorexia achieved lower results in terms of anxiety and depression in comparison with the French group. In the French group, patients with anorexia nervosa showed a statistically significantly higher level of anxiety and depression than the control group. In the Polish population, no statistically significant results were achieved (Tab. 3)

Table 3. Comparison of anxiety and depression symptoms in French and Polish girls with anorexia nervosa

HADS	PAn n = 30		FAn n = 32		PHS n = 60		FHS n = 57		ANOVA		p		
	M	SD	M	SD	SD	M	M	SD	F	p	PAn vs FAn	PAn vs PHS	FAn vs FHS
Anxiety	8.20	1.80	12.56	4.00	9.63	4.11	9.85	4.33	7.80	0.000	0.001	NS	0.001
Depression	3.40	1.54	7.21	3.67	4.01	3.27	4.03	2.95	10.48	0.000	0.001	NS	0

PAn – Polish patients with anorexia, FAn – French patients with anorexia, PHS – Polish healthy subjects, FHS – French healthy subjects, PAn vs FAn – Polish patients with anorexia versus French patients with anorexia, PAn vs PHS – Polish patients with anorexia versus Polish healthy subjects, FAn vs FHS – French patients with anorexia versus French healthy subjects

Table 4. Level of anxiety and depression in patients with anorexia nervosa

HADS	Polish patients with anorexia nervosa (n = 30)		French patients with anorexia nervosa (n = 32)	
Level of anxiety	N	%	N	%
Normal range	9	30	3	9
Mild intensity	**16**	**53**	6	19
Severe intensity	5	17	**23**	**72**
Level of depression	N	%	N	%
Normal range	**30**	**100**	**19**	**59**
Mild intensity	-	-	4	13
Severe intensity	-	-	9	28

The highest results related to depression and anxiety level in particular clinical groups are marked in bold

The level of emotional disorders varied (Tab. 4). The results achieved in the HADS-A subscale indicate a high intensity of anxiety symptoms. In Polish patients it was markedly lower as opposed to the whole examined group, which is a significant value, enabling to differentiate both groups of women. In the HADS-D scale, in all the Polish patients and in a substantial majority of the French patients, the depression level was normal.

Statistically significant differences were observed in the dimension of locus of control (Tab. 5). In the group of women suffering from anorexia nervosa, the Polish patients showed a statistically higher belief in the locus of control and a lower belief in luck/coincidence than the French women. Also, in the Polish population there were statistically significant differences between the patients and healthy students. In the research group, locus of control was bigger than in healthy women. Moreover, patients with anorexia had a weaker belief in luck/coincidence. The French population did not achieve statistically significant results.

The relationship analysis in the Polish group of patients with anorexia nervosa indicated statistically significant positive relationships between depression symptoms and belief in luck/coincidence. In the French population no statistically significant results were achieved (Tab. 6).

DISCUSSION

The conducted research proves that French patients with anorexia nervosa have a higher level of anxiety and depression than those in the control group. While comparing clinical groups, it should be emphasised that the French group is characterised by a significantly higher level of anxiety and depression. The presented research indicates that the anxiety level was high (72% – severe intensity). In the patients with anorexia nervosa, in the French group, severe depression intensity occurred in 28% of the cases.

Higher intensity of affective and emotional disorders in patients with anorexia nervosa in comparison with the control group has also been reported in research conducted by other authors [20]. Braun et al [21], Fornari et al [22], Herzog et al. [23] and Piran et al.[24] claim that the two most common kinds of anxiety disorders in people suffering from anorexia nervosa are: social phobia (3% – 54%) and obsessive compulsive disorder (3% – 66%). In the research carried out by Herzog et al. [23] 40.7% of patients with anorexia suffered from mild and deep de-

Table 5. Comparison of locus of control in girls with anorexia nervosa and control groups

Locus of control	PAn (n = 30)		FAn (n = 32)		PHS (n = 60)		FHS (n = 57)		ANOVA		p		
	M	SD	M	SD	M	SD	M	SD	F	p	PAn vs FAn	PAn vs PHS	FAn vs FHS
Internal locus of control	19.43	3.58	16.34	2.84	17.78	2.48	16.32	2.54	10.05	0.000	0.001	NS	NS
External locus of control	12.46	3.67	11.15	3.51	10.41	3.48	10.82	3.60	2.30	NS	NS	0.01	NS
Belief in luck	8.36	2.32	12.46	3.01	10.83	3.22	12.17	3.03	13.13	0.000	0.001	0.001	NS

Legend is to be found under Table 3

Table 6. Correlations between dimensions of locus of control and anxiety and depression symptoms in Polish and French patients with anorexia nervosa

Variables	Polish patients with anorexia nervosa (n = 30)			French patients with anorexia nervosa (n = 32)		
	Internal locus of control	External locus of control	Belief in luck	Internal locus of control	External locus of control	Belief in luck
Depression	0.16	0.28	0.46*	- 0.12	0.13	-0.00
Anxiety	0.26	0.28	0.25	-0.23	0.27	0.20

pression, while in the population examined by Iniewicz [25] 23.3% of patients (n=30) had deep depression and 10% mild depression. Furthermore, Heebink et al. [26] indicate that younger patients with anorexia nervosa (restrictive type) show a higher anxiety and depression level than the older ones.

According to Gotlib and Abramson [27] low self-esteem and depression are directly connected to eating disorders. The authors suppose that patients apply a depressive attributive style as a consequence of negative events and situations. People with anorexia are likely to apply internal attribution (dispositional). Therefore it may be concluded that this type of attribution can lead to permanent helplessness deficits (lack of motivation to act, inability to perceive between a reaction and a desired effect).

According to the author of this paper, in the French patients, a high anxiety level (severe intensity) is determined by factors related to an earlier time of separation from the parents. They can cause emotional lability (separation anxiety caused by lack of readiness for independence and autonomy) and an emotional crisis related to "entering the adult life" (fear of assuming an adult role). The author supposes that the influence of contemporary culture and the pressure to be slim, increase the anxiety symptoms in the examined study group.

The results of the research showing no significant statistic differences between Polish patients with anorexia and students may indicate the occurrence of anxiety and depression symptoms also in the control group. This explanation is justified in the research conducted by Bomba [in 25], who observed serious depression characteristics in one third of the untreated youth population.

For many young females with anorexia, excessive control of eating (or refusing food) has a real meaning and purpose: it creates the basis of self-esteem, it guarantees the sense of independence and self-decision. The presented research results suggest that patients with anorexia living in Poland have a higher locus of control (belief in one's own ability to influence the course of events and conviction that the results of their actions depend on them, and not on external factors) and belief in luck/coincidence than the French patients. The results of the conducted research prove that the Polish study group is characterised by a higher external locus of control in comparison with the healthy population.

Slade [28] suggests that women with eating disorders need to have an absolute control over some aspects of their lives and in achieving total success in at least one of its areas. Since the patients pathologically control their eating habits, the author suggests that this condition should be referred to as disorders of pathological self-control and bodily control rather than eating disorders. Roth and Armstrong [29], Rezek [30] and Shapiro et al. [31] claim that the inability (lack of control) to maintain adequate diet correlates with disordered attitudes towards food and eating, which might suggest that those people lack control in their lives.

The research showing a subjective sense of lack of control over one's own life, needs and desires (and, as a result belief in external factors or controlling life by authority figures) has also been done by other authors. According to Lugli-Rivero i Vivas [32] women suffering from anorexia nervosa believe that control is more dependent on others rather than themselves. The results illustrating an external locus of control were also achieved in the research by Horesh et al. [33] where this very variable was a significant factor in adolescents hospitalised because of anorexia. Furthermore, they also observed that in patients with anorexia nervosa, symptoms of disease had a positive statistically significant correlation with interiorisation of anger, lower self-control, external locus of control and negatively significant correlation between dimension of locus of control and expression of anger (interiorisation vs. exteriorisation). The lower was the internal locus of control in female patients with anorexia, the higher was the tendency for exteriorisation of their own anger.

Hood et al. [34] claim that younger patients with anorexia are characterized by a higher external locus control. Opposite results were achieved in the discussed research: younger age group (French patients) had a lower locus of control than the older age group (Polish patients). It is likely that results achieved our research are determined by the social and economic situations, due to which Polish girls are far more dependent on their parents (financial and emotional aspect) than the French, and therefore they, to

a greater extent want to be fully responsible for themselves (both successes and failures). They want independence and believe that they are able to control their own lives.

To sum up, the conducted research proves that:

1. symptoms of depression and anxiety and belief in luck/coincidence are less characteristic of the Polish research group than the French group;
2. in French patients with anorexia nervosa the level of depression and anxiety symptoms is significantly higher than in healthy students;
3. Polish girls with anorexia had stronger belief in an internal locus of control than the French group;
4. an external locus of control is far more characteristic of the Polish clinical group than the healthy population;
5. relationship between depression symptoms and belief in luck/coincidence was observed in the Polish research group

CONCLUSIONS

Intensity of emotional symptoms in patients with anorexia nervosa indicate the necessity of introducing a wide range of psychological methods reducing the level of depression and anxiety into clinical practice.

In the author's view, the differences within the groups result mostly from different models of upbringing. Polish and French family and social standards are different. It is possible that the behaviour of Polish girls indicating a greater willingness to control their lives and taking responsibility (including costs and benefits) is a response to the parents' attitudes who want to have closer control over children, which is limiting development of their autonomy.

REFERENCES

1. Toner BB, Garfinkel PE, Garner DM. Affective and anxiety disorders in the long term follow-up of anorexia nervosa. Int. J. Psychiatry Med. 1988; 18: 357–364.
2. Braun DL, Sunday SR, Halmi KA. Psychiatric comorbidity in patients with eating disorders. Psychol. Med. 1994; 24: 859–867.
3. López Gómez I. Comorbilidad en los trastornos de la conducta alimentaria. In: García-Camba E., eds. Avances entrastornos de la conducta alimentaria. Anorexia nerviosa, bulimia nerviosa, obesidad. Barcelona: Masson; 2001. p. 157–169.
4. Keel PK, Klump KL, Miller KB, McGue M, Iacono WG. Shared transmission of eating disorders and anxiety disorders. Int. J. Eat. Disord. 2005; 38 (2): 99–105.
5. Hiller W, Zaudig M. Comorbidity of eating disorders in comparison with mood disorders. Ann. NY Acad. Sci. 1989; 575: 532–534.
6. Pla C, Toro J. Anorexia nervosa in a Spanish adolescent sample: an 8-year longitudinal study. Acta Psychiatr. Scand. 1999; 100: 441–446.
7. Rastam M. Anorexia nervosa. 51 Swedish adolescents: premorbid problems and comorbidity. J. Am. Acad. of Child Adolesc. Psychiatry 1992; 11: 819–827.
8. Rajewski A, Hauser J. Czynniki genetyczne w etiologii jadłowstrętu psychicznego. Psychiatr. Pol. 2001; 1: 71–80.
9. Fisher M, Schneider M, Pegler C, Napolitano B. Eating attitudes, health-risk behaviors, self-esteem, and anxiety among adolescent females in a suburban high school. J. Adolesc. Health 1991; 12: 377–384.
10. Flament MF. De la dépression aux pathologies des conduites alimentaires: Particularités de la dépression de la femme. Encéphale 2000; 5: 23–27.
11. Fornari V, Kaplan M, Sandberg DE, Matthews M, Skolnick N, Katz J. Depressive and anxiety disorders in anorexia nervosa and bulimia nervosa. Int. J. Eat. Dis. 1992; 12 (1): 21–29.
12. Drwal RŁ. Adaptacja kwestionariuszy osobowości. Warszawa: PWN; 1995.
13. Loas G, Dardennes R, Dhee-Perot P, Leclerc V, Fremaux D. Opérationnalisation du concept de « lieu de contrôle » : traduction et première étude de validation de l'échelle de contrôle de Levenson (IPC : The internal powerful others and chance scale). Ann. Med. Psychol. 1994;152(7): 466–469.
14. Iniewicz G. Samokontrola i jej uwarunkowania u dziewcząt chorujących na anoreksję psychiczną. Psychoterapia 2004; 3(130): 45–53.
15. Dalgleish T, Tchanturia K, Serpell L, Hems S, de Silva P, Treasure J. Perceived control over events in the world in patients with eating disorders: a preliminary study. Pers. Indiv. Differ. 2002; 31: 453–460
16. American Psychiatric Association. Diagnostic and statistical manual of mental disorders. 4th edition. Washington DC: American Psychiatric Association; 1994.
17. Zigmond A, Snaith RP. The Hospital Anxiety and Depression Scale. Acta Psychiatr. Scand. 1983; 6: 361–370.
18. Lépine JP, Godchau M, Brun P, Lemperière T. Évaluation de l'anxiété et de la dépression chez les patients hospitalisés dans un service de médecine interne. Ann. Med. Psychol., 1985; 143: 175–89.

19. Brytek A. Contribution des modèles sur l'autorégulation du comportement dans la compréhension des troubles alimentaires. Perspectives interculturelles. Niepublikowana praca doktorska. Université Paul Verlaine – Metz, France, 2005.
20. Pollice C, Kaye WH, Greeno CG, Weltzin TE. Relationship of depression, anxiety, and obsessionality to state of illness in anorexia nervosa. Int. J. Eat. Disord. 1997; 21(4): 367–376.
21. Braun DL, Sunday SR, Halmi KA. Psychiatric comorbidity in patients with eating disorders. Psychol. Med. 1994; 24: 859–867.
22. Fornari V, Kaplan M, Sandberg DE, Matthews M, Skolnick N, Katz J. Depressive and anxiety disorders in anorexia nervosa and bulimia nervosa. Int. J. Eat. Disord. 1992; 12: 21–29.
23. Herzog DB, Keller MB, Sacks NR, Yeh CJ, Lavori PW. Psychiatric comorbidity, in treatment-seeking anorexics and bulimics. J. Am. Act. Adolesc. Psychiatry 1992; 31: 810–818.
24. Piran N, Kennedy S, Garfinkel PE, Owens M. Affective disturbance in eating disorders. J. Nerv. Ment. Dis. 1985; 173: 395–400.
25. Iniewicz G. Depresja u dziewcząt chorych na anoreksję psychiczną. Psychoterapia 2004; 1 (128): 5-11.
26. Heebink DM, Sunday SR, Halmi KA. Anorexia nervosa and bulimia nervosa in adolescence: Effects of age and menstrual status on psychological variables. J. Am. Acad Child Adolesc. Psychiatry 1995; 34: 378–382.
27. Gotlib IH, Abramson LY. Attributional theories of emotion. In: Dagleish T, Power M, eds. The handbook of cognition and emotion. Chichester: Wiley; 1999.p. 613–636.
28. Slade, PD. Towards a functional analysis of anorexia nervosa and bulimia nervosa. Br. J. Clin.Psychol. 1982 ; 21: 167–179.
29. Roth D, Armstrong J. Perceptions of control over eating disorder and social behaviors. Int. J. Eat. Disord., 1990; 10: 265–271.
30. Rezek P. Perceived control, drive for thinness and food consumption: anorexic tendencies as displaced reactance. J. Pers. 1991; 59:129–142.
31. Shapiro D, Blinder B, Hagman J. A psychological "sense of control" profile of patient with anorexia nervosa and bulimia. Psychol. Rep. 1993; 73: 531–541.
32. Lugli-Rivero Z, Vivas E. Trastornos de alimentación y control personal de la conducta. Salud Públ. Méx. 2001; 43(1): 9–16.
33. Horesh N, Zalsman G, Apter A. Internalized anger, self-control, and mastery experience in inpatient anorexic adolescents. J. Psychosom. Res. 2000; 49: 247–253.
34. Hood J. Moore T, Garner D. Locus of control as a measure of ineffectiveness in anorexia nervosa. J. Consult. Clin. Psychol. 1982; 50: 3–13.