Should be cited as: Psychiatria Polska
2013, tom XLVII, numer 3
strony 385–393

The relationship between assessment of family relationships and depression in girls with various types of eating disorders

Maciej Wojciech Pilecki[1], Barbara Józefik[1], Kinga Sałapa[2]

[1] Department of Child and Adolescent Psychiatry, Jagiellonian University Medical College
Acting Director: Dr. Maciej Pilecki
[2] Department of Bioinformatics and Telemedicine, Jagiellonian University Medical College
Director: Professor Irena Roterman-Konieczna

Summary

Aim. The aim of the study was to assess the relationship between depressive symptoms and girls' assessment of their family relations in a group of (female) patients with a diagnosis of various subtypes of eating disorders in comparison with (female) patients with a diagnosis of depressive disorders (episode of major depression, dysthymia, adjustment reaction with depressive mood) and female students in Krakow, Poland schools.

Studied group. Data from 54 (female) patients with a diagnosis of restrictive anorexia (ANR), 22 with a diagnosis of binge-purge anorexia (ANB), 36 with a diagnosis of bulimia (BUL), 36 with a diagnosis of depressive disorders (DEP) and a 85 (female) Krakow school students (CON) were used in the statistical analyses. There were no significant differences between age of girls in studied groups.

Method: In analyses, results of the Polish version of the Beck Depression Inventory (BDI) and also the Family Assessment Questionnaire (KOR) were used.

Results. In the CON group, correlations attesting to a link between depressiveness and a negative assessment of the family were observed on all scales of the questionnaire with the exception of the Values and Norms scale. In the DEP group, such a dependence was ascertained on scales: Completing Tasks, Communication, Emotionality, Control, Defence, Positive Statements. In the case of the ANR group, no statistically significant relationship between results of the questionnaires was noted. In group ANB, correlations attesting to a link between depressiveness and a negative picture of the family were ascertained on scales: Communication and Defence. The same dependence was ascertained in the BUL group on scales: Completing Tasks, Emotionality, Emotional involvement, Control, General result, Negative Statements.

Conclusions. An increase in depressiveness is linked in a significant way with a worsening assessment of the family relations amongst girls with a diagnosis of bulimia, depressive disorders and students.

Key words: eating disorders, family relations, depression

The study was conducted on the basis of KBN funds (Grant no.: 6 POSE 09021).
The study was approved by the Bioethics Committee UJ CM (KBET/26/B/2001).

Introduction

The occurrence of depressive symptoms and symptoms of eating disorders in the same people is observed both in clinical and population studies [1-8]. The dependences between eating disorders and depressive symptoms thus seem to be multi-directional and complex. Symptoms of depression may co-occur with eating disorders, precede them or continue after the eating disorders have subsided [9, 10]. A greater intensity of depressive symptoms, may be, in a bi-directional way, linked with a greater intensity of symptoms of eating disorders [11, 12].

The occurrence of depressive symptoms in the course of eating disorders may also influence the success of therapy [6] or the risk of a suicide attempt [13].

Assessment of depression in persons with eating disorders has significance for both research and clinical practice. Depressive symptoms seem to influence both the way of perceiving symptoms of eating disorders [14], the cognitive abilities of (female) patients [15] and self image [16].

From this perspective, studying the relationship between depression and experiencing various aspects of themselves in patients with eating disorders seems to be important.

In the study carried out by the authors of this publication on (female) patients with a diagnosis of restrictive anorexia, binge-purge anorexia, bulimia and depression and also on a group of (female) Krakow school students, a statistically significant difference between the 5 groups was ascertained in the field of depressiveness measured by the Beck Depression Inventory (BDI) ($F_{4.223} = 24.67$; $p < .001$). In the group of students, the mean BDI result was 10.40 points, in the restrictive anorexia group: 17.34, the binge-purge anorexia group: 28.05, bulimia group: 29.55, depression group: 23.46. Statistically significant differences occurred between the means of female students and all the remaining clinical groups and also between the restrictive anorexia group and the binge-purge anorexia group and also the bulimia group. In all the studied groups, although to a varying degree, a link was observed between increasing depressiveness measured by the BDI and a worsening of self-image measured by the Offer Self-Image Questionnaire (OSIQ). This link was observed despite differences in intensity of depression and also features of self-image. A dependence between depressiveness and self-image was not ascertained in any of the groups of eating disorders in the context of family relations (results on the Family Attitudes scale). Also on this scale, extreme differences between a very positive assessment by restrictive anorectic girls and a negative assessment by bulimic and depressive girls were noted [16].

This result differed from the research results of other authors, which indicated a relationship between depression and perception of family relations both in a group of healthy people [17] and in groups presenting symptoms of eating disorders [18-20]. However, these studies were carried out in other cultural contexts, based on different groups selection and methodology.

This observation results in the formulation of a research question about the variability of the influence of depression on the assessment of self and family relations. An attempt to answer this question requires assessment of the links between depression and the view of family relations measured in a more precise and multi-dimensional way.

This is a particularly significant question in the context of concepts assuming the significance of family relations in the development of eating disorders and also the meaning that is ascribed to family therapy in their treatment [21].

The aim of this study was to assess the relationship between depressive symptoms and the assessment of family relations in a group of patients with a diagnosis of eating disorders, depressive disorders and also in a group of female Krakow school students.

The presented study constitutes a part of a larger project concerning socio-cultural, family and individual risk factors in anorexia nervosa and bulimia nervosa financed from grant KBN (no.: 6 POSE 09021). The study has been approved by Ethical Committee UJ CM (no. KBET/26/B/2001).

Method

In the analyses, results of the Polish version of the Beck Depression Inventory – BDI [22] were used, where the assessment of the studied persons concerned the preceding month. The questionnaire had been subjected to a standardization procedure, adapting the tool to Polish conditions, by Parnowski T. and Jernajczyk W. in 1977 [23]. In present study, the question about weight loss was excluded from the calculations.

The Family Assessment Questionnaire (KOR*)* was used to study the view (assessment) of family relations.

The KOR is an adaptation to Polish conditions [24] of the German version of the questionnaire Family Assessment Measure FAM III by Steinhauer, Santa Barbara and Skinner (1984) [25]. The German version of FAM III, defined as *Famielienbogen,* was subjected to an adaptation and standardisation procedure by Cierpka and Frevert (1994) [26]. The results obtained in the Polish version in the form of Cronbach's alpha coefficients were consistent with the English and German version and were above a value of $\alpha = 0.50$ for particular scales. As a result of the standardisation procedure, besides the original scales, two additional factor scales were introduced: the Positive Statements (POZ) and Negative Statements (NEG) scales, which constitute the general sum of negative and positive assessments formulated by the studied person. Higher results indicate a more unfavourable assessment of family relations (deviating from desired ones), and results that are lower indicate a more favourable assessment of family relations (closer to the desired state). In the case of control scales: Defence and Social Expectations, the dependence is the opposite of the above [24].

Material

In the statistical analyses, data were used from 54 female patients with a diagnosis according to DSM-IV [27] of restrictive anorexia (ANR), 22 with a diagnosis of binge -purge anorexia (ANB), and 36 with a diagnosis of bulimia (BUL) undergoing first time consultation at the Outpatient Clinic of the Department of Child and Adolescent Psychiatry of the University Hospital in Krakow between 2002-2004.

In the study, two control groups were used: 36 patients with a diagnosis of depressive disorders (episode of major depression, dysthymia, adjustment reaction with depressive

mood) (DEP) according to DSM-IV [27] and also 85 schoolgirls from Krakow schools (CON). Choice of the above two control groups was linked with the desire to define characteristic differences specifically for eating disorders.

The studied patients and their parents were asked to fill in (at home) the questionnaire instruments used in the study, and to send them back or bring them in during the next visit.

The mean age of patients in the ANR group was 16.44 (SD 1.57), in the ANB group: 16.91 (SD 1.31), in the BUL group 17.47 (SD 1.03), DEP: 16.78 (SD 1.69), KON: 16.99 (SD 1.55). The Kruskal-Wallis test revealed no significant differences between the age of patients in the studied groups ($p = 0.056$).

Detailed inclusion and exclusion criteria to groups are described in other paper [28].

Results

As part of calculations performed for the needs of this study, a verification was carried out of the dependence between the results of each of the scales of the KOR and the BDI scale. Appropriate indicators of correlation were calculated for each of the studied groups, i.e. ANR, ANB, BUL, DEP and CON. In this analysis, the Pearson linear correlation coefficient was applied if both variables originated from a population with normal distribution. Otherwise, the Spearman rank correlation coefficient was calculated. The results of the relationship between depressiveness measured by BDI and results on the KOR scale are presented in Table 1.

Table. 1. **KOR/BDI correlations**

Table. 1 *KOR*/BDI Correlations					
SCALE	BDI				
	CON	ANR	ANBP	BUL	DEP
Completion of Tasks	0.264(*)			0.386(*)	0.343(*)
Differentiation of Tasks (Roles)	0.342(**)				
Communication	0.304(**)		0.482(*)		0.421(*)
Emotionality				0.398(*)	0.472(**)
Emotional Involvement	0.394(**)			0.394(*)	
Control	0.255(*)			0.483(**)	0.389(*)
Values and Norms					
Social Expectations	-0.273(*)				
Defence	-0.240(*)		-0.478(*)		-0.455(**)
General Result	0.344(**)			0.482(**)	
Positive Statements	0.282(*)				0.426(*)
Negative Statements	0.346(**)			0.502(**)	

* Correlation is significant at the 0.05 level (two-sided).
** Correlation is significant at the 0.01 level (two-sided).
Correlations that are not statistically significant have not been included

In the CON group, correlations attesting to a link between depression and a negative view of the family relations were observed on all scales of the questionnaire with the exception of the scale of Emotionality and also Values and Norms. In the case of the ANR group, no significant statistical relationship was noted between results of questionnaires. In the ANB group, correlations attesting to a link between depression and a negative view of the family were ascertained on scales: Communication and Defence. The same dependence in the BUL group was ascertained on scales: Completing tasks, Control, Emotional Involvement, Emotionality, General Result and Negative Statements, whilst in the DEP group on the scales of: Completing Tasks, Communication, Emotionality, Control, Defence and Positive Statements.

An attempt was also made to carry out more advanced analyses, i.e. linear regression analysis, taking into account the interaction between the factors in the model and also covariance analysis. Application of linear regression analysis was aimed mainly at checking the interaction between the factor grouping the data (i.e. the diagnosis) and depression.

The aim of covariance analysis was, however, to check the significance of differences between results on particular KOR scales of female patients in all studied groups, thus removing the influence of depressiveness. Unfortunately, however, it turned out not to be possible to make use of this analysis, due to non-fulfilment of its fundamental assumptions.

Discussion of results

Not being able to carry out linear regression analysis and covariance analysis limits the possibility of drawing conclusions on the basis of the obtained results. From analysis of the correlation, it transpires, however, that in the group of healthy girls, an increase in depressiveness is linked with a negative assessment of the studied measures of family relations. A similar dependency, though occurring in a smaller number of dimensions, is observed amongst girls with diagnosis of depression and girls with a diagnosis of bulimia. It is worth remembering that these groups in a fundamental though obvious way differ in terms of level of intensity of depression. In all the studied dimensions, healthy girls also had a statistically significantly better view of family relations than girls with a diagnosis of depression and girls from the bulimia group [21]. Correlations between depressiveness and the view of family relations thus occur both in the group characterised by, to a prevailing degree, low depressiveness and good family relations and in the group with high depressiveness and bad family relations. From this perspective, a greater intensity of depression in the three groups discussed above seems to be quite unambiguously linked with a negative view of family relations both within the groups and in the comparison between them. The direction of the studied dependence is not of course clear. The performed analysis does not allow us to give an answer as to whether depressiveness influences the construction of a more negative view of relations, or else whether a negative perception of family relations is a factor influencing the occurrence of depressiveness. In research by Dancyger et al. [18], 126 women treated due to eating disorders aged 13 to 34 years old (mean 18.3) and their

families based on the Beck Questionnaire and also the Family Assessment Device (FAD), high self-reported depressive symptoms of the daughters were related to the perception of high family dysfunction in the case of daughters, mothers and fathers. Depressive symptoms did not, however, alter the differences in perception between family members.

The dependences between depressions and particular dimensions of the view of family relations are different in the case of the studied groups. Neither of the groups with bulimic symptoms turned out to be characterised by a significant dependence on any of the scales. Dependences in all four clinical groups were not observed on any of the scales. Group ANBP turned out to be similar to groups CON and DEP on both scales in which dependences occurred. Such a dependence for BUL was observed on the scales Completion of Tasks and Control. In group ANB, a statistically significantly relationship was observed on two scales. It is not clear whether this result is linked with the mixed character of the group, or whether it is due to its small size. The observed dependences do not allow us put forward any hypothesis about the specificity of links between the view of family relations and depressiveness in the studied groups.

Girls with a diagnosis of restrictive anorexia similarly to students were characterised by relatively low level of depressive symptoms and also a very good view of family relations [21]. Similarly to the analysis of results of the Offer Self Image questionnaire (OSIQ) [16], a relationship between depressiveness and the view of family relations was not ascertained. How should this lack of dependence be understood? Interpretation of a lack of dependences is more problematic than the occurrence of dependences. It may be linked with the small size of the group or the occurrence of dependences of a very complex nature. The obtained results can also be interpreted as a derivative of the action of defensive mechanisms such as denial and idealisation. Many researchers interpret the results obtained by themselves with in terms of these mechanisms. Żechowski [29] on the basis of his research indicates that participation in the process of treatment and psychotherapy is linked with "a worsening of results" in questionnaire surveys, which the author interprets as a weakening of denials and mechanisms of idealisation. Ward et al. [30] identified in a group of female patients with a diagnosis of anorexia a low level of reflective functioning and also a high level of idealization and high indicators of insecure attachment. This may indicate that the same mechanisms constitute defence strategies in insecure relationships with parents. Vandereycken [31] also, based on a review of research, draws attention to the fact that in self-report type studies, (female) patients, especially with restrictive anorexia, often obtain results close to results of the control group, which the author explains by mechanisms of denial and repression. Humphrey [32] draws attention to the fact that idealisation is one of the basic defence mechanisms, not only in the individual context, but also in the family context in families with eating disorder problems, especially anorexia nervosa. An alternative explanation here could be the occurrence of more complex and non-linear dependences requiring research procedures other than correlations. The obtained result, however, provides successive arguments attesting to the limited significance of questionnaire surveys of girls with a diagnosis of restrictive anorexia and interpretational traps that may stem from results of such studies.

The results obtained in the group of (female) students are consistent with the results of studies by Millikan and Wamboldt [17], who in a study based on multiple regression analyses on a population of 201 adolescent twins using, amongst other things, the Family Assessment Device (FAD) and also the Children's Depression Inventory, found that the perception of the functioning of the family accounted for 35% of the variance in depressive symptoms. In a study by Fornari et al. [19] based on Beck's questionnaire and also the Family Assessment Device, patients with a diagnosis of bulimia nervosa reported significantly more dysfunctional family background than patients with a diagnosis of anorexia nervosa. A statistically significant relationship was ascertained between depression and perceived poor family functioning. High results on the Beck questionnaire in the whole group of eating disorders were linked with a negative view of the family in five dimensions: problem-solving, communication, differentiation of tasks (roles), affective responsiveness and also general functioning. Similar results were also obtained in a study by Thiemann and Steiner [20], where patients with a diagnosis of eating disorders and also major depression with a high level of self-reported depression described family environments that are significantly negative, independent of the severity of illnesses or diagnoses. In contrast to the present study, these authors did not show differences in perception of the family context between (female) patients with a diagnosis of eating disorders or major depression.

The study possesses several methodological limitations. A limitation of the presented studies is the relatively small size of the group and also the unequal number of studied subjects in particular groups, which at this stage of studies makes it impossible to carry out additional statistical analyses. In 18.5% of girls from the ANR group, 18.2% of girls from the ANB group and also 38.9% of girls from the BUL group, a depressive episode was ascertained by a psychiatrist as a second diagnosis [21]. It is worth recalling here that four patients in whom sub-clinical symptoms of eating disorders were ascertained in the course of depressive disorders were eliminated from the studied material. Such an uneven co-occurrence of eating disorders and depressive disorders may also have significant meaning in the context of the analysed results. In two of the cited reports in this article, self-reported depression turned out to have a more significant influence on perception of family relations than depressiveness diagnosed by clinicians [17, 19]. In this context, all similarities between clinical groups may be explained by the co-occurrence of eating disorders with depressive disorders. It could be justified to exclude from the additional group all those persons in whom co-occurrence of depressive symptoms with symptoms of eating disorders have been ascertained. Due to the size of groups in the analysed material this was impossible.

However, regardless of all doubts, this study provides further arguments in favour of the meaning that assessment of depression can have in the course of eating disorders, from both the research and clinical perspective. The question about the depression of (female) patients with a diagnosis of eating disorders, especially bulimia, should constitute a significant aspect not only of clinical diagnosis, but should also be taken into account in the assessment of family relations by family or individual therapists. A negative view of family relations by a patient may be, similarly to perception of self, an expression of depressive disorders of perception, and not objective features of the

family. This awareness may influence the choice of method of therapy, assessment of family resources, and help in maintaining an attitude of neutrality in the course of therapy.

Conclusions

In the studied group, increase in depressiveness is linked in a significant way with a worsening assessment of the family by healthy girls and by girls suffering from depressive disorders and bulimia. Such a dependence was not ascertained amongst girls with a diagnosis of restrictive anorexia

References

1. Speranza M, Atger F, Corcos M, Loas, Guilbaud O, Stéphan P, Perez-Diaz F, Halfon O, Venisse JL, Bizouard P, Lang F, Flament M, Jeammet P. *Depressive psychopathology and adverse childhood experiences in eating disorders*. European Psychiatry. 2003; 18: 377–383.
2. Kennedy SH, Kaplan AS, Garfinkel PE, Rockert W, Toner B, Abbey SE. *Depression in anorexia nervosa and bulimia nervosa: discriminating depressive symptoms and episodes*. J. Psychosom. Res. 1994; 38: 773–82.
3. Grilo CM, White MA, Masheb RM. *DSM-IV psychiatric disorder comorbidity and its correlates in binge eating disorder.* Int. J. Eat. Disord. 2009; 42: 228–234.
4. Herzog DB, Keller MB, Sacks NR, Yeh CJ, Lavori PW. *Psychiatric morbidity in treatment-seeking anorexics and bulimics*. J. Am. Acad. Child. Adolesc. Psychiatry. 1992; 31: 810–8.
5. Dooley-Hash S, Banker JD, Walton MA, Ginsburg Y, Cunningham RM. *The prevalence and correlates of eating disorders among emergency department patients aged 14-20 years*. Int. J. Eat. Disord. 2012; May 8. [Epub ahead of print]
6. Berkman ND, Lohr KN, Bulik CM. *Outcomes of eating disorders: A systematic review of the literature*. Int. J. Eat. Disord. 2007; 40: 293–309.
7. Dębska E, Janas A, Bańczyk W, Janas-Kozik M. *Depression or depressiveness in patients diagnosed with Anorexia Nervosa and Bulimia Nervosa - pilot research*. Psychiatr. Danub. 2011; 23: 87–90.
8. O'Brien KM, Vincent NK. *Psychiatric comorbidity in anorexia and bulimia nervosa: nature, prevalence, and causal relationships*. Clin. Psychol. Rev. 2003; 23: 57–74.
9. Silberg JL, Bulik CM. *The developmental association between eating disorders symptoms and symptoms of depression and anxiety in juvenile twin girls*. J. Child Psychol. Psychiatry. 2005; 46: 1317–1326.
10. Sihvola E, Keski-Rahkonen A, Dick DM, Hoek HW, Raevuori A, Rose RJ, Pulkkinen L, Marttunen M, Kaprio J. Prospective associations of early-onset Axis I disorders with developing eating disorders. Compr. Psychiatry. 2009; 50: 20–5.
11. Costa C, Ramos E, Severo M, Barros H, Lopes C. *Determinants of eating disorders symptomatology in Portuguese adolescents*. Arch. Pediatr. Adolesc. Med. 2008; 162: 1126–32.
12. Presnell K, Stice E, Seidel A, Madeley MC. *Depression and eating pathology: Prospective reciprocal relations in adolescents*. Clinical Psychology & Psychotherapy, Special Issue: Eating Disorders and Emotions. 2009; 16: 357–365.
13. Franko DL, Keel PK. *Suicidality in eating disorders: occurrence, correlates, and clinical implications*. Clin. Psychol. Rev. 2006; 26: 769–82.
14. Bizeul C, Brun JM, Rigaud D. *Depression influences the EDI scores in anorexia nervosa patients*. European Psychiatry. 2003; 18: 119–123.

15. Giel KE, Wittorf A, Wolkenstein L, Klinberg S, Drimmer E, Schönenberg M, Rapp AM, Fallgatter AJ, Hautzinger M, Zipfel S. *Is impaired set-shifting a feature of „pure" anorexia nervosa? Investigating the role of depression in set-shifting ability in anorexia nervosa and unipolar depression*. Psychiatry Res. 2012; Jun 27. [E-pub ahead of print]
16. Pilecki M, Józefik B. *Związek depresyjności z obrazem siebie u dziewcząt z różnymi typami zaburzeń odżywiania się*. Psychiatria i Psychologia Kliniczna. 2009; 09: 233–241.
17. Millikan E, Wamboldt MZ. *Perceptions of the Family, Personality Characteristics, and Adolescent Internalizing Symptoms*. J. Am. Acad. Child. Adolesc. Psychiatry. 2002; 41: 1486–1494.
18. Dancyger I, Fornari V, Scionti L, Wisotsky W, Sunday S. *Do daughters with eating disorders agree with their parents' perception of family functioning?* Compr. Psychiatry. 2005; 46: 135–139.
19. Fornari V, Wlodarczyk-Bisaga MM, Sandberg D, Mandel FS, Katz JL. *Perception of family functioning and depressive symptomatology in individuals with anorexia nervosa*. Compr. Psychiatry. 1999; 40: 434–441.
20. Thienmann M, Steiner H. *Family environment of eating disordered and depressed adolescents*. Int. J. Eat. Disord. 1993; 14: 43–8.
21. Józefik B. *Relacje rodzinne w anoreksji i bulimii psychicznej*. Kraków: Wydawnictwo Uniwersytetu Jagiellońskiego; 2006.
22. Beck T, Ward CH, Mendelson M, Mock J, Erbaugh J. Submitted for publication Nov. 29, 1960. This investigation was supported by Research Grant M3358 from the National Institute of Mental Health, U.S. Public Health Service. *An inventory for measuring depression*. Arch. Gen. Psychiatry. 1961; 4: 561-571.
23. Parnowski T, Jernajczyk W. *Inwentarz Depresji Becka w ocenie nastroju osób zdrowych i chorych na choroby afektywne*. Psychiatr. Pol. 1977; 11: 417–421.
24. Beauvale A, de Barbaro B, Namysłowska I, Furgał M. *Niektóre psychometryczne właściwości Kwestionariuszy do Oceny Rodziny*. Psychiatr. Pol. 2002; 36: 29–40.
25. Steinhauer PD, Santa Barbara J, Skinner HA. *The process model of family functioning* Can. J. Psychiatry. 1984; 29: 77–88.
26. Cierpka M, Frevert G. *Die Familienbögen*. Göttingen: Hogrefe; 1994.
27. APA. *Diagnostic and Statistical Manual of Mental Disorders DSM-IV*. Washington: APA; 1994.
28. Józefik B, Pilecki M.W. *Perception of autonomy and intimacy in families of origin of patients with eating disorders with depressed patients and healthy controls. A Transgenerational perspective* – Part I. Archives of Psychiatry and Psychotherapy. 2010; 4: 69-77.
29. Żechowski C. *Objawy psychopatologiczne towarzyszące zaburzeniom odżywiania si*ę. Praca doktorska, promotor: prof. I. Namysłowska. Warszawa: Instytut Psychiatrii i Neurologii; 2002.
30. Ward A, Ramsay R, Turnbull S, Benedettini M, Treasure J . *Attachment patterns in heating disorders: Past in the prezent*. Int. J. Eat. Disord. 2001; 28: 370–376.
31. Vandereycken W. *Families of patients with eating disorders*. W: Fairburn ChG, Brownell KD. red. *Eating Disorders and Obesity. A Comprehensive handbook. Second edition*. New York, London: The Guilford Pres; 2002. s. 215–220.
32. Humphrey LL. *Object relations theory and the family system: an integrative approach to understanding and treatment of treating eating disorders*. W: Johnston C. red. *Psychodynamic treatment of anorexia nervosa and bulimia.* New York, London: The Guilford Press; 1991. s. 321–353.

Correspondence Address:
31-501 Kraków, Kopernika Street 21 a
tel. 12/424 87 40, fax.: 12/424 87 44
maciej.pilecki@uj.edu.pl