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Disordered eating among mothers of Polish patients with eating disorders

Authors' Contribution:

- A** Study Design
- B** Data Collection
- C** Statistical Analysis
- D** Data Interpretation
- E** Manuscript Preparation
- F** Literature Search
- G** Funds Collection

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Summary

Background:

The aim of this study was to assess attitudes towards eating as measured by the Eating Attitude Test (EAT26) among mothers of girls diagnosed with various types of eating disorders, in comparison with mothers of depressive girls and their relationship with daughters' results 14 years after the beginning of the Polish political and cultural transformation of 1989.

Material/Methods:

The data of 68 mothers and their daughters were used in statistical analysis (anorexia nervosa restrictive type: 18, anorexia nervosa binge/purge type: 12, bulimia: 14, depression: 24). The mean age in the group of mothers was 43.5 (SD 5.3), daughters: 16.7 (SD 1.4).

Results:

In the group of mothers, the results of EAT26 test were lower than results of the general population of Polish females or patients' mothers obtained in a different cultural context. Results from girls with an eating disorder diagnosis considerably exceed the mean result of Polish population studies of teenagers. There were no statistically significant differences between the EAT26 results of mothers of girls with various types of eating disorders and mothers of depressive girls. Sociocultural variables such as education and place of residence of mothers also did not differentiate the studied groups and did not have a significant influence on attitudes towards weight and body shape presented by the studied mothers.

Conclusions:

The obtained results may suggest that in the studied population, the social background of mothers and disturbances of their own mothers' attitudes towards weight and body shape were not an important and specific risk factor in the development of their daughters' eating disorders.

key words:

anorexia nervosa • bulimia nervosa • culture • Westernization • eating disorders

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BACKGROUND

According to the results of many studies, parents are strong communicators of socio-cultural pressures and seem to have an important socio-cultural influence on the development of their children's body image disturbances and disordered eating. This effect can appear in a number of ways, mainly through active encouragement and criticism, and also through children's observation of their parents' behaviors [1]. In the case of disordered eating, this relationship seems to be unquestioned [2]. The familial, especially maternal, transmission of psychological problems directly related to eating behaviors and pathology is also hypothesized to influence the development of anorexia and bulimia nervosa. Some clinical studies confirm the presence of eating pathology and weight concerns among parents of patients with eating disorders [3–6]. The hypothesis about a link between the attitudes of mothers and the occurrence of psychopathology connected with eating is also supported by studies on children of mothers with eating disorders. A body of evidence suggests that maternal eating disorder and disordered eating increase the risk of parenting difficulties and adverse developmental outcomes in a variety of domains for their children. The influence of maternal eating disorders seems to be related specifically to growth, feeding, and body shape and weight concerns, however, and could be a risk factor for eating disorders in children [7–11].

Eating disorders are generally considered as clinical entities that are linked in a significant way to the world of Western culture or to societies that are aspiring to it. In Poland, after the democratic transformations of 1989, eating disorders have become one of the fastest growing groups of mental disorders of the developmental period; before that they were rarely diagnosed and, despite some methodological uncertainties, had a very low prevalence [12–16]. Issues linked to the appearance of body shape, mass and diet were not the subject of media reports or TV programmes. They did not constitute a significant component of either popular or youth culture. Pro-Western orientation of the higher classes of society meant, however, that, if problems with eating occurred in Poland in the communist era, they should have mainly concerned educated persons, especially those living in large towns having more possibility of contact with Western culture and values. However, when it comes to these issues, we only have circumstantial evidence. Before 1989, eating disorders were not systematically studied in Poland [16–18].

The research question that we asked before beginning the project concerned the co-occurrence of disordered eating in mothers of girls with a clinical diagnosis of eating disorders in Poland. If one accepts the model of the direct influence of mothers' own disordered attitudes on the eating psychopathology of their children, then Polish mothers of patients with eating disorders (born before the democratic transformation) should have considerably elevated eating problems, body dissatisfaction and weight concerns, compared to the same age as the studied group mothers of girls without such disorders. In addition, a link between disordered attitudes towards eating and education or place of residence could be expected.

The relationship between mothers' results on the EAT26 and age at the time of the study was also analyzed. Going

through adolescence before the period of systemic transformation should result in a lack of occurrence of such a relationship.

The aim of this research was to confirm or reject these hypotheses.

An additional aim of the study was to assess the relationship between mothers' and daughters' results on the EAT26 questionnaire in the studied groups. The occurrence of such a relationship could attest to the influence of mothers' attitudes on particular dimensions of symptoms presented by daughters.

The presented research is part of a larger research project entitled "Socio-cultural, familial, and individual factors in anorexia and bulimia nervosa", which was financed by a scientific grant from the State Committee for Scientific Research (Grant Number: 6 POSE 09021). The study was approved by the Bioethics Commission UJ CM No: KBET/26/B/2001

MATERIAL AND METHODS

Participants

A (questionnaire) survey was carried out among girls aged 13–20 years with a diagnosis of an eating disorder according to DSM-IV [19], who attended the University Hospital Child and Adolescent Psychiatry Clinic in Cracow for the first time, during the period of 2003–2004, and also among their parents. Attendance at the Clinic was on the basis of referral from a doctor, psychologist, school counsellor, or on the initiative of guardians without a referral from a doctor. Persons brought up in care institutions and mentally handicapped persons were excluded from the study.

Patients' clinical diagnosis was confirmed using the Polish version of the Eating Disorder Examination Interview (EDE) [20]. This instrument studies specific characteristics of eating-disorder psychopathology [21]. Additionally, a structured clinical interview was conducted to collect demographic, developmental, family, and environmental data.

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.

Patients and mothers were classified into appropriate study groups based upon their daughters' eating disorder diagnosis: anorexia nervosa restrictive type (patients – ANRd, mothers – ANRm); anorexia nervosa binge/purge type (patients – ANBPd, mothers – ANBpm); and bulimia nervosa (patients – BULd, mothers – BULm). Mothers and patients with eating disorders were compared to a control group of patients diagnosed with depression and their mothers (patients – DEPd, mothers – DEPm), including diagnoses of depressive episode, dysthymia, and adjustment disorder with depressed mood as determined by DSM-IV [19]. The reason for the selection of the depressive group as a control group was the desire to have a better understanding of those relationships that are linked with nonspecific aspects of being a psychiatric patient or her parent. The selection scheme for the depressive control group was the same as that described above. Eighty adolescent girls and their mothers were

Tabela 1. Descriptions of EAT26 scales

Scale	Description
Slimming (Slim)	Focusing on body shape and mass with accompanying fear of weight gain or the desire to lose weight
Excessive concern (Conc)	Excessive focusing on food with accompanying feeling of losing control
Social pressure (Pres)	Feeling the concern of others linked to body weight
Dietetic (Diet)	Remaining on a diet and awareness of dietetic principles
Bulimic (Vom)	Occurrence of vomiting after eating or desire to vomit

included in the study; 12 mothers did not return questionnaires. The data of 68 mothers and their daughters were used in statistical analysis. Numbers in diagnostic groups are as follows: ANR: 18, ANBP: 12, BUL: 14, DEP: 24.

Instruments

The study used the 26-question version of the Eating Attitude Test – the EAT 26 created by D. Garner and P. Garfinkel to study attitudes and behaviors towards eating of persons suffering from anorexia nervosa [22]. This instrument is used broadly both in clinical and population studies in the field of eating disorders and disordered eating. Polish standardization of the tool was carried out by K. Włodarczyk-Bisaga on a population of 747 schoolgirls in the first class of Warsaw *lycea* (high schools). She showed the usefulness of the tool in Polish conditions as a screening questionnaire for assessment of the presence of symptoms of a broad spectrum of disordered eating. In the study it was decided to accept a cut-off point at a level of 19/20 points. When choosing this cut-off point, the Polish version of the EAT-26 displayed a sensitivity at a level of 100%, specificity of 53.6%, and probability of diagnosis of disease equal to 18.6%. Scales of the EAT26 used in this study included – Slimming (Slim), Excessive Concern (Conc), Social Pressure (Pres), Dietetic (Diet), and Bulimic (Vom) also originate from factor analysis carried out by the above-mentioned author. The internal validity of the scales was assessed using Chronbach's alpha. Satisfactory alpha values between 0.82 and 0.65 were found for the EAT scales. The scales turned out to be similar to those described in Western populations [18,23,24]. Descriptions of scales are presented in Table 1. Daughters' EAT26 results and its scales' results are described as EAT26d; mothers' results of EAT26 are described as EAT26m.

EAT26 was one of several research instruments that the studied girls and their mothers were asked to fill in. Fathers of patients were also studied. However, they were not asked to fill in the EAT26 questionnaire.

Data analysis

Due to the small number of people in groups, non-parametric tests were used for calculations. The Kruskal-Wallis

test and the Bonferroni test (post-hoc) were used to study the significance of differences between medians of chosen variables. Spearman's rank correlation coefficient was used to analyze the relationship between 2 quantitative variables. Results where the p-value was lower than the significance level, $\alpha=0.05$, were acknowledged as significant. The statistical analysis was performed using the Statistical Package for the Social Sciences (SPSS 18.0.PL; Chicago, IL, USA).

RESULTS

In groups ANRm, ANBPm and BULm, no mother achieved a result higher than 19 points. In the DEPM group, 2 mothers achieved such a result (20.31). Results higher than 19 points were achieved in the ANRd group by 8 (44.4%), in the ANBPd group by 11 (91.7%), in BULd by 13 (92.9%), and in DEPd by 4 (16.7%) daughters.

A comparison of results of mothers and daughters on the EAT26 and its scales is presented in Tables 2, 3.

There were no statistically significant differences concerning mothers' results on the EAT26 between groups. There were significant differences concerning the median of daughters' EAT26 results between given groups ($p=0.000$). Post-hoc tests indicate that there were statistically significant differences both between ANBPd and DEPd groups ($p=0.000$) and between BULd and DEPd groups ($p=0.000$).

Data on mothers' education are shown in Table 4.

Due to the low number of persons in individual groups, "mothers' education" categories were condensed in the following way:

- level 1: primary and vocational,
- level 2: incomplete secondary and secondary,
- level 3: incomplete higher and higher.

In the studied group, 16.4% of mothers had primary and vocational education, 46.3% of mothers had incomplete secondary and secondary education, and 37.3% had incomplete higher and higher education. There were no differences between mothers in terms of education. This factor does not have an influence on mothers' EAT results.

Regarding place of residence, 21.5% of mothers lived in the country-side, 40% in small towns, and 28.5% in large towns. There were no differences between mothers in terms of place of residence. Statistically significant differences between EAT results of mothers depending on place of residence were not ascertained.

The mean age in the group of mothers was 43.5 (SD 5.3), and in daughters: 16.7 (SD 1.4). The age of the mother did not correlate with the mother's result on the EAT26 questionnaire.

Next, the relationship between mothers' results on the EAT26m, daughters' results on the EAT26d and its scales for particular clinical groups (Table 5) and for the whole eating disorders group (Table 6) was analyzed. A statistically significant correlation occurred (between mothers' and daughters' results) for BUL in the case of 1 scale



Table 2. EAT26 results in the group of mothers and daughters.

DGN		EAT26d	EAT26m
ANR	Mean	23.00	1.61
	Standard deviation	16.09	2.79
	Median	18.00	0.00
ANBP	Mean	42.83	2.92
	Standard deviation	15.97	4.91
	Median	39.00	0.00
BUL	Mean	37.29	4.79
	Standard deviation	16.13	5.07
	Median	36.50	3.00
DEP	Mean	11.17	5.00
	Standard deviation	13.95	7.68
	Median	5.50	2.50
p-value		0.00	0.00

(Slimd), and also for DEP on the overall EAT26d scale, and also scales Slimd and Dietd. In the whole group of eating disorders, a statistically significant correlation (between mothers' and daughters' results) was observed on the Vom scales. No dependence was observed in the depressive group.

DISCUSSION

Results of the study did not confirm our hypothesis that Polish mothers (going through their own adolescence in communist Poland) of patients with eating disorders have more eating problems, body dissatisfaction, and weight concerns measured by EAT26 than do mothers of patients with depression.

In the group of mothers of daughters with eating disorders, the results are significantly lower than results achieved on the EAT26 test by Polish (female) students (10.7, SD 8.6) or factory workers (7.43, SD 6.3) at the beginning of the 1990's [18]. These results are also lower than results of mothers obtained in a different cultural context. The result of the EAT26 test for a general population of 969 mothers (with average age 42.1 [SD 4.8]) of girls (average age 13.9 [SD 1.2] studied at the end of 2001 and the beginning of 2002 in Osona County in Barcelona, Spain was 6.9 (SD 7.7); 8% of mothers of girls obtained more than 20 points on the scale [25]. In a study on 87 mothers of American students of both sexes from 2 private universities in Connecticut, the result of the EAT26 was 6.2 (SD 6.3) [26].

Also, mothers' scores on particular scales are at a very low level. Half of the studied mothers obtained zero points on practically all of the scales. Results for the BULm group on the Slimm scale are an exception, where the median is 1.

Such a low result for the studied mothers of patients may stem from the fact that the youngest of them was not less 24 in the year the Polish systemic transformation began (1989). Thus they were entering into the new changing reality of a

Table 3. EAT26 subscales results in the group of mothers and daughters.

Scale	Slimd	Concd	Presd	Dietd	Vomd	Slimm	Concm	Presm	Dietm	Vomm
ANR										
Mean	7.17	3.78	4.00	4.72	.06	.61	.17	.44	.39	.00
St. dev.	6.08	3.62	2.03	4.48	.24	1.55	.71	1.34	1.42	.00
Median	7.00	3.00	4.00	4.50	.00	.00	.00	.00	.00	.00
ANBP										
Mean	17.33	6.75	4.83	7.08	2.67	1.50	.00	.42	.92	.00
St. dev.	6.61	3.17	2.79	5.14	2.15	2.43	.00	.10	2.39	.00
Median	17.50	8.00	5.50	6.50	3.00	.00	.00	.00	.00	.00
BUL										
Mean	15.57	6.71	3.93	4.79	3.79	1.93	1.07	.50	1.07	.00
St. dev.	7.38	4.03	2.70	3.81	1.89	2.37	1.90	1.09	1.94	.00
Median	17.00	7.50	3.50	3.50	4.00	1.00	.00	.00	.00	.00
DEP										
Mean	4.29	.92	1.83	1.79	.42	2.08	1.21	.71	.71	.12
St. dev.	6.56	2.38	2.32	2.89	1.02	3.13	2.47	1.73	1.60	.61
Median	1.00	.00	1.00	.00	.00	.00	.00	.00	.00	.00

Table 4. Education of mothers.

Education	Frequency	Percent	Valid percent
Primary	2	2.9	3.0
Vocational	9	13.2	13.4
Incomplete secondary	4	5.9	6.0
Secondary	27	39.7	40.3
Incomplete higher	4	5.9	6.0
Higher	21	30.9	31.3

Table 5. Correlations between mothers' and daughters' results on the EAT26.

DGN		EAT26m	
BUL	Slimd	Spearman correlation	0.53
		Significance (two-sided)	0.05
DEP	EAT26d	Spearman correlation	0.39
		Significance (two-sided)	0.06
DEP	Slimd	Spearman correlation	0.40
		Significance (two-sided)	0.05
DEP	Dietd	Spearman correlation	0.41
		Significance (two-sided)	0.05

Table 6. Correlations between mothers' and daughters' results on the EAT26 in the whole group of eating disorders.

		EAT26d	Slimd	Concd	Presd	Dietd	Vomd
EAT26m	Spearman correlation	0.06	0.07	0.14	-0.06	-0.11	0.41
	Significance (two-sided)	0.72	0.64	0.36	0.68	0.48	0.01

Westernizing Poland, having been 'moulded' with less internalization of cultural models concerning the Western concept of femininity and the culture of slimness.

Meanwhile, results obtained by girls with an eating disorder diagnosis considerably exceed the mean result of Polish population studies of teenagers. In the Włodarczyk-Bisaga study [24] on an urban population of schoolgirls in the first class of 8 Warsaw *lycea* (high schools), the result of the EAT26 was 9.9 (SD 9.1). In a study of a similar population in Krakow, the mean result of the questionnaire was 9.7 (SD 8.55) and the cut-off point was exceeded by 11.7% of girls [27]. These results were comparable to results obtained for girls (of a similar age) in various Western-culture countries [25,28-30].

The mean results of girls with a diagnosis of depression are in the present study only slightly higher than the results of general population-based studies, although attention should be paid here to the high standard deviation and the number of girls from the depression group who exceeded the cut-off point established in the method. However, none of the girls encompassed by this analysis had a clinical diagnosis of eating disorder or EDNOS.

The scores obtained by (female) patients on particular EAT26 scales are decidedly higher than those obtained by their mothers (in the DEPd group these differences are not as extreme). The Slimd scale is again noteworthy in this respect. In groups ANBPd and BULd, the mean result for this scale is very high in comparison with all other characteristics - 17.33 (SD 6.61) and 15.57 (SD 7.38), respectively. Similarly, median values for this scale significantly exceed median values for all the remaining ones. Additionally, groups ANBPd and BULd are distinguished by relatively high points for characteristics described by scale Concd. They are about 2 times higher than for the ANRd scale, and several times

exceed scores for the DEPd scale. The latter is characterized by the lowest score out of all the studied scales.

None of the obtained results of analyses of social variables suggest any significant difference between studied mothers in the context of social origin. However, this result needs to be commented on. In the year 2002 in Poland, 10.8% of women had higher education, 36.3% had secondary and post-secondary education, 17.5% had basic vocational education, 29.9% had primary education, and 5.5% of women had no education [31]. An increase in the number of women with higher education was also observed [32]. A comparison of the results for the whole group with those of the general population indicates a different demographic profile of our patients in the context of education of mothers from that observed in the general population. Our group is characterized by overrepresentation of women with higher education and a scarcity of women with primary education. Higher education of a mother may in this regard be a factor linked with a higher risk of occurrence of symptoms linked both with eating disorders and depressive disorders. However, the fact that parents with lower education are less likely to seek help may be significant, as may be the location of the outpatient clinic from which data in the large town were analyzed. In the years 2003-2004, however, there was no other specialist centre in our region dealing with treatment of eating disorders.

Our outcomes support those findings that indicate a lack of eating problems, body dissatisfaction and weight concerns among mothers of patients with eating disorders in comparison with mothers of daughters with other psychological disorders or the general population [33-36]. Overall, our outcomes are similar to the results of Steiger et al. [37], where a direct association between self-reported mothers' and eating-disordered daughters' levels of weight

concerns was observed, but parents of patients with eating disorders did not differ on any factor score from the relatives of controls [37].

It seems that in eating disorders, the pathways of influence of the family background on the occurrence of clinical symptoms need to be supplemented by a number of other factors that go beyond the issue of perception of the body and eating attitudes [3,37–40]. It can also be assumed that the modelling influence of the family can have differing significance in the case of various diagnoses or subtypes of ED diagnoses.

One can also hypothesize here about the existence of a sort of “snowball” mechanism, according to which in the initial phase of increase of frequency of eating disorders in a given population, their occurrence is determined by factors that are not directly linked with body image and attitude to eating – they may, however, have significance later, when the number of people with eating disorders in the population has already grown. It is precisely this mechanism that may, among other things, explain the different results of studies carried out in different countries and in different years.

The obtained results of correlations indicate a stronger link between results for the questionnaire in the group of depressed girls without clinical symptoms of eating disorders and their mothers. This may indicate a difference between the influence of parental attitudes on the occurrence of eating disorders and disordered eating [2]. The results observed in the depressive group may be a result of a similar dependence to that observed in the general population. The relationship between the EAT26 Slim scale results for mothers and daughters observed in the bulimic group and between mothers' EAT26 results and the daughters' Vom scale in the whole eating disorders group may indicate a greater importance and influence of disturbed attitudes towards eating by mothers of patients with bulimic symptoms than by mothers of restrictive anorectic patients on their daughters' symptoms. A similar finding – that maternal thin ideal internalization and pressure to be thin emerged as a significant predictor of future increases in adolescent bulimic symptoms – was observed in the research of Linville, Stice, Gau and O'Neil [41].

All methodological doubts relating to the study should also be emphasized here. Relatively small groups were studied. The group of mothers of patients with a diagnosis of depressive disorders turned out to be the most numerous. This weakens the ability to draw conclusions and requires verification in other studies. Fathers were not encompassed in the research. Meanwhile, in the literature on the subject, there are reports that the attitudes of fathers have significance in the discussed matter [3]. The significance of attitudes of fathers in the context of family relations also turned out to be important in the studied group in other research [39,40]. Twelve mothers did not return questionnaires. It cannot be ruled out that they were not returned by mothers with disturbed attitudes towards eating, who were afraid that they would be stigmatized and blamed for their daughters' illness due to the results of the test. Moreover, the low score in the group of mothers of girls may be the result of fear that they would be held responsible for the illness of their daughters and hence did not answer honestly [26].

It may be supposed that, especially in the group of mothers of girls from the ANR group, denial of the presented problems may be equally strong, especially as it seems that such a phenomenon appears in the context of a description of the dynamics of the functioning of the family [39,40].

Finally, it should be emphasized that attitudes and behaviors tend to be more strongly related to how parents are perceived rather than to parents' own self-reports [2,26]. This perspective introduces the significance of the subjectivity in the perception of parental attitudes and behaviors, which was not studied in the current research.

CONCLUSIONS

1. Polish mothers of patients with eating disorders, whose youth occurred in the period before the systemic transformation, had a very low level of body dissatisfaction and weight concerns, as measured by EAT26, and it was similar to that of mothers of girls with depression.
2. Sociocultural variables such as education and place of residence of mothers also did not differentiate the studied groups and did not have a significant influence on attitudes towards weight and body shape presented by the studied mothers.
3. The fact that mothers of studied girls in the present research achieved lower scores than mothers of girls studied in Western countries could attest to the lower internalization of the contemporary (Western) cultural model of slimness in the generation of Polish mothers whose youth occurred in the period before the systemic transformation.
4. In spite of the generally lower results of mothers on the EAT26, the results of correlations in ED and DEP groups indicate a relationship between the attitude of mothers and daughters to eating and their own body. However, it is non-specific for eating disorders; a greater significance of the attitudes of mothers of patients can be observed in the case of bulimic symptoms than restrictive anorectic symptoms.
5. The obtained results may suggest that in the studied population, the social background of mothers and disturbances of their own mothers' attitudes towards weight and body shape were not an important and specific risk factor in the development of their daughters' eating disorders.

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