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Published in:

Psychotherapy and Psychosomatics

Publication date:

1999

Document Version

Publisher's PDF, also known as Version of record

[Link to publication in Tilburg University Research Portal](#)

Citation for published version (APA):

Mangweth, B., Kemmler, G., Ehner, C., de Col, C., Kinzl, J., Biebl, W., & Vingerhoets, A. J. J. M. (1999). The weeping behavior in anorexic and bulimic females. *Psychotherapy and Psychosomatics*, *68*(6), 319-324.

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The Weeping Behavior in Anorexic and Bulimic Females

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Key Words

Weeping · Crying · Anorexia · Bulimia · Alexithymia

Abstract

Background: The aim of the study was to examine the proneness, the functions and triggering situations of weeping in anorexic and bulimic women. **Methods:** Participants were 36 anorexic and 31 bulimic female patients and 56 age-matched female controls. All women completed the Questionnaire on Adult Crying. We limited our study to results on 'crying proneness', 'functions of crying' and 'determining factors of crying'. **Results:** Bulimic patients reported to have cried significantly more often in the last 4 weeks, to be more likely to cry in situations of distress and to have used weeping significantly more often as a manipulative behavior than control women. Anorexic patients rated their tendency to cry significantly lower and experienced weeping as significantly more negative than controls. **Conclusions:** Compared to control women, anorexic patients associated weeping with negative feelings as opposed to bulimic patients who appeared to use weeping on an intentional basis. These deviations from control women seem to mirror the introvert character of anorexic patients and the extrovert impulsive personality of patients with bulimia nervosa, respectively.

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Weeping is an exclusively human emotional expression characterized by tears, vocalizations and irregular respiration that has received little scientific attention in the context of psychiatric disorders. There are different theories of the function of adult crying: the most challenging of them is based on the catharsis hypothesis which has been stated in various forms: Borgquist [1] found a widespread popular belief of a favorable effect of a 'good cry' with or without an objective cause. Bindra [2] states that the initial emotional state which triggers an episode of crying often dissipates or changes to alleviate intense mood after the episode, implying a mood-relieving role for crying. Scheff [3] has suggested that crying is a 'biological necessity' and possibly a 'curative agent in depression'. Efran and Spangler [4] proposed a two-factor theory starting with the organism that is aroused or tensed which is either connected with the feeling of sadness or joy. In the second stage there is a shift to recovery, and crying becomes an outward manifestation of this shift and has the function of restoring 'organismic equilibrium' [5]. Kottler [6] emphasizes the communicational aspect of tears and Cornelius [7] points to the effects of crying in the social environment. Several lines of evidence suggest that weeping may moderate illnesses or disorders [8], facilitating recovery from different types of physical illness [9] being associated with the termination of urticaria and asthma attacks in the classic psychosomatic literature

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0033-3190/99/0686-0319\$17.50/0

Accessible online at:
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[10], and occurring more frequently in healthy individuals than in those with ulcers or colitis [11]. Some studies have examined the cathartic effect of crying on depressed mood and found contradictory results [7]. Whereas some studies did not show a relationship between general depression levels and crying [12–14], some others did find such a relation, namely significantly elevated crying frequencies in moderately depressed individuals [15, 16]. These results, however, are only representative of non-clinical populations, who related their crying behavior to depressive mood at very low levels. Consistent with that finding are psychiatric observations that crying occurs more frequently in dysthymic states and mild depression, while with increasing depression patients are 'incapable of weeping' [5, 17].

Since weeping is an emotional expression which is significantly more often reported by females than by males [18], it seems to be interesting to examine the crying behavior in female-dominated disorders like anorexia nervosa and bulimia. Patients with eating disorders use their symptoms very often in order to regulate emotional imbalances. In the severe course of their disorder, the binge-purge behavior and/or the excessive dieting substitutes the majority of emotional expressions. This pauperization of expressiveness shows a strong correspondence with the concept of alexithymia [19] which has been defined as a set of psychological dispositions due to specific deficits in emotional and cognitive areas. There are some studies on alexithymia in eating disorder patients [20–24] which show anorexic and bulimic patients to be more alexithymic than controls. To our knowledge, there is only one study on weeping and alexithymia [25] revealing a negative relationship between crying frequency and alexithymia but no study on weeping in eating disorder patients.

Therefore, we examined the general weeping behavior of anorexic and bulimic patients compared to a non-eating-disordered control group assessing the proneness, the triggering situations, the functions and frequency of weeping.

Method

Participants

Participants were all female patients with eating disorders who had been admitted for treatment to the Psychosomatic Unit of the University Clinics of Innsbruck since 1992 and who met diagnostic criteria for either anorexia nervosa or bulimia nervosa (defined by DSM-III-R [26]). We recruited them from our clinical records and mailed them an anonymous questionnaire. Women were informed by a short introduction of the purpose of the confidential study. Of

the 200 distributed questionnaires, 94 (47%) were returned including 27 which came back without response because of unknown address or in one case because of death. All distributed questionnaires were numbered in order to group the responders according to their diagnosis of eating disorder.

Controls were age-matched female students, employees or acquaintances of our team. Of the 130 distributed questionnaires, 62 (48%) were completed and returned to us. Control women had to answer the same questionnaire as the patients and several additional questions on their eating behavior including most of the questions defining anorexia nervosa or bulimia nervosa used in the Structured Clinical Interview by DSM. As a result, 6 control women had to be excluded from data analysis because they met one or more criteria of either anorexia or bulimia nervosa. Therefore, we included 36 anorexic, 31 bulimic and 56 control women in our statistical analyses.

Measures

Participants were introduced to the Questionnaire of Adult Crying [27] by a clear definition of crying 'referring to tears in one's eyes due to emotional reasons (sobbing and sniffing is not a necessary condition to meet definition of crying), not because of irritation to the eye'.

The original questionnaire consists of five parts. In our study we concentrated on parts A, B and C focussing on situations and the functions of weeping. Part A consists of 59 items describing different situations or moods in which one might cry and giving rise to three factors: 'distress' (e.g. I cry when things do not go as I want them to go), 'sadness' (e.g. I cry at funerals) and 'joy' (e.g. I cry when I feel very happy). Items had to be rated on a 7-point scale (1 = never; 7 = always). Two further questions assessed the frequency of crying within the last 4 weeks prior to the survey (on a numeric scale) and the personal rating of the general crying tendency (rated on a 10-point scale: 1 = hardly ever cry, 10 = cry easily). Part B includes 24 items focussing on the function and associated emotions of crying. Items had to be rated on a 7-point scale (reversed order of the original scale: 1 = absolutely disagree; 7 = very much agree) and were summarized by 4 factors: 'weeping as a coping style' (e.g. crying helps me to deal with my problems), 'experiencing positive effects of weeping' (e.g. I feel peaceful after a good cry), 'experiencing negative effects of weeping' (e.g. I feel ashamed when I cry) and 'weeping as a manipulative behavior' (e.g. other people generally become gentler when I cry) [28]. Part C includes 24 items which may evoke a possible beginning of weeping, rated on a 6-point scale (0 = not at all; 5 = very much). As no subscales for part C existed, we constructed 3 subscales: 'current situation' (e.g. location, presence of other people), 'disposition' (e.g. genetic factors) and 'emotional memory' (e.g. traumatic experience) using factor analysis.

Statistics

The data on weeping behavior were analyzed on the basis of subscales rather than individual items. To compare the three groups of anorexic, bulimic and control women with respect to these subscales, analysis of variance (ANOVA) was used. Only if the p value of the global F test for comparing all three groups was <0.05, the p values for pairwise comparisons were used to make statements about statistical significance (2-tailed t tests). As the variable 'educational level' differed between groups, results from ANOVA were cross-checked using analysis of covariance with educational level serving as a covariate. However, results remained nearly unchanged and thus only ANOVA results will be reported. In the case of one highly skewed

Table 1. Comparison of anorexic, bulimic and control females in crying proneness and frequency (part A)

Factors	Anorexia (A) (n = 36)		Bulimia (B) (n = 31)		Control (C) (n = 56)		F test A-B-C	Post hoc comparisons
	mean	SD	mean	SD	mean	SD		
Distress	2.87	1.12	3.27	1.15	2.62	0.97	0.025	C < B
Sadness	3.24	1.22	3.60	1.06	3.65	1.12	n.s.	–
Joy	2.02	0.80	2.02	0.66	2.13	0.80	n.s.	–
Personal rating of general tendency to cry	4.6	2.7	6.7	2.5	5.9	2.9	0.007	A < B = C

Factors	Anorexia		Bulimia		Control		Kruskal-Wallis test – one-way ANOVA	Mann-Whitney U test
	median	range	median	range	median	range		
Frequency of crying within the last 4 weeks ¹	2	0–30	4	0–28	2	0–30	0.0102	C = A < B

For distress, sadness and joy, 7-point rating scale: 1 = never; 7 = always. Significant differences between groups: < indicates p lower than 0.05, = indicates p greater than 0.10. For tendency to cry, 10-point scale: 1 = hardly ever cry; 10 = cry easily.

¹ Because of skewed distribution, nonparametric statistical procedures were used.

variable the standard ANOVA was replaced by nonparametric tests (Kruskal-Wallis one-way ANOVA followed by Mann-Whitney U tests).

Results

Demographic Characteristics

The eating disorder group included 36 anorexic and 31 bulimic patients who were similar to control women in their mean age [A (anorexia): 28.5 ± 8.9; B (bulimia nervosa): 25.3 ± 7.8; C (control): 27.0 ± 8.5 years]. The three groups differed significantly in their educational status. Anorexic patients were of significantly lower education than bulimic patients and control subjects ($p < 0.05$ and $p < 0.001$, respectively). However, the following results remained virtually unchanged after adjustment for educational status (analysis of covariance).

Part A: Proneness and Frequency of Crying

The three groups did not differ in ranking different situations which make them cry. All reported to cry most frequently in situations that make them feel sad, less in situations of distress and the least in situations of joy (table 1). All of these differences were statistically significant ($p < 0.001$) in each subgroup with the exception of the bulimic females whose distress score was not significantly lower than their sadness score.

Bulimic patients also reported to have cried significantly more often within the last 4 weeks prior to the questionnaire survey than the other two groups (median: bulimic patients 4, anorexic patients 2, controls 2 times), however, their personal rating of the general crying tendency did not differ significantly from controls. Anorexic patients on the other hand, who did not differ significantly from controls regarding the frequency of crying, rated their crying tendency significantly lower than both control and bulimic women.

Part B: Functions of Crying

Patients differed significantly in their connotation of weeping from the control group as well as from each other (table 2). Anorexic patients showed significantly higher agreement scores on the factor 'experiencing negative effects of weeping' than control women ($p < 0.01$) and also a tendency towards higher agreement scores ($p < 0.07$) than bulimic patients who were similar to controls. The factor 'experiencing positive effects of weeping' did not reveal a significant difference. 'Weeping as a manipulative behavior' was used significantly more often by patients with bulimia nervosa compared to anorexic and control females. 'Weeping as a coping style' did not differ in the three groups.

Table 2. Comparison of anorexic, bulimic and control females in the functions and meaning of weeping (part B)

Factors	Anorexia (A) (n = 36)		Bulimia (B) (n = 31)		Control (C) (n = 56)		F test A-B-C	Post hoc comparisons
	mean	SD	mean	SD	mean	SD		
Weeping as a								
Coping style	3.96	1.27	3.77	1.35	3.94	1.28	n.s.	A = B = C
Manipulative behavior	2.46	1.4	3.58	1.75	2.69	1.75	0.007	B < A = C
Weeping has a								
Negative effect	4.46	2.02	3.57	1.47	3.2	1.72	0.005	C = B < A
Positive effect	3.67	1.85	3.53	1.98	4.26	1.77	n.s.	A = B = C

A 7-point rating scale was used: 1 = absolutely disagree; 7 = very much agree. Significant differences between groups: < indicates p lower than 0.05, = indicates p greater than 0.10.

Table 3. Comparison of anorexic, bulimic and control females in determining factors of weeping (part C)

Factors	Anorexia (A) (n = 36)		Bulimia (B) (n = 31)		Control (C) (n = 56)		F test A-B-C	Post hoc comparisons
	mean	SD	mean	SD	mean	SD		
Current situation	2.19	0.89	2.60	1.00	2.16	0.88	0.081 ¹	A = C < B
Disposition	2.03	1.01	2.14	0.92	2.02	0.81	n.s.	A = B = C
Emotional memory	3.32	1.24	3.55	1.08	3.49	1.16	n.s.	A = B = C

A 6-point scale was used: 0 = not at all; 5 = very much. Significant differences between groups: < indicates p lower than 0.05, = indicates p greater than 0.01.

¹ A = C < B: since the global F test yielded a nearly significant result, post hoc comparisons are presented.

Part C: Determining Factors of Crying

Data of this part showed no significant differences among the three groups on the subscales 'disposition' and 'emotional memory' (table 3). The subscale 'current situation', however, gave rise to a trend towards statistical significance ($p = 0.081$, global F test) which was due to a significantly higher score of the bulimic females compared to controls ($p = 0.031$).

Discussion

To our knowledge, this study is the first dealing with weeping behavior in anorexic and bulimic patients. We assessed the crying proneness, its meaning, frequency and functions in anorexic and bulimic patients and age-matched healthy control women. The results show that

anorexic and bulimic patients have a different weeping behavior both compared to each other and to controls.

Patients with eating disorders and controls were similar in ranking situations that make them cry. In agreement with findings of Vingerhoets and Becht [29] who used the same questionnaire in 3,906 subjects from 30 different countries, we found 'sadness' to be the most important factor for weeping, followed by 'distress' and 'joy' in all three groups. Also, the mean ratings of our control group proved to be similar to those of the Vingerhoets and Becht study.

Bulimic patients reported a significantly higher frequency of crying than both anorexic and control subjects. 'Distress' appeared to be a factor which triggers weeping significantly more often in bulimic subjects compared to both anorexic subjects and controls. Bulimic subjects also scored significantly higher on the subscale 'manipulative

function of weeping' and showed a significantly higher crying frequency than the other two groups. These results go along with findings of an impulsive and extrovert character of patients with bulimia nervosa [30–32].

Anorexic patients rated their general crying tendency significantly lower than control and bulimic women. However, their frequency of crying was not particularly low as it did not differ significantly from controls. Hence, it seems that anorexic patients underestimate their general crying proneness. This might be due to their significantly more negative connotation of weeping compared to the other two groups. These results mirror the introvert and restrictive character of patients with anorexia nervosa [33]. Also, in contrast to healthy persons who use crying as a healing experience which is described as a 'shift from arousal to recovery' [34], anorexic and bulimic patients may use their symptomatology in order to deal with inner tensions. This deviation from 'normal' behavior resembles that of persons with alexithymia who present difficulties in perception and verbalization of emotions and in distinction between vegetative feelings and emotions [35, 36]. According to Vingerhoets et al. [25] alexithymia was associated with low weeping frequency.

Furthermore, our data go along with findings of high prevalences of psychiatric disorders (64%) in a group of 'noncriers' as opposed to 'criers' [37]. Similar results were found in patients with ulcer, colitis or asthma attacks who reported a very low frequency and a negative meaning of crying during their illness compared to sex- and age-matched controls [11] and a decrease or termination of their symptomatology when crying as an expressed emotional behavior began [38]. Our study extends this model of emotional deprivation to a further diagnostic group.

Our data are limited by several points. First, the response rate of the eating disorder group was rather low. This may result in a selection bias. Thus, it is likely that patients who are in a better psychopathological state are more willing to respond and return the questionnaire than those in a bad state. However, this pattern of mood state may also be true for the control group whose response rate was in fact not much higher.

Secondly, the choice of our control group causes certain problems. It is possible that some of the observed particularities of the weeping behavior in both anorexic and bulimic patients compared to healthy controls might not be due to the specific eating disorder syndrome but to psychiatric comorbidity (e.g. depression, anxiety). However, the questionnaire used and the design of this study did not cover this methodological claim. In order to address this issue, further research will be needed.

Thirdly, there may be limitations regarding the validity of the instrument used. To our knowledge, no study has so far been performed to test the ability of the instrument to differentiate between weeping as such and other aspects (e.g. life style). Thus, a question like 'How often do you weep when doing ... (e.g. watching sad movies)' may (but does not have to) receive higher scores by those subjects who watch TV every day compared to those who rarely watch. This combination of two aspects (life style, likelihood of weeping) may cause an interpretative problem. However, this problem is not specific to our study but common to most studies using questionnaires.

Finally, the cross-sectional study design does not allow any inferences on causality. Therefore, whether the specific weeping behavior found in anorexic and bulimic patients is a consequence of the disease or a personal trait cannot be answered by this study.

Despite these various possible methodological limitations, our data show that anorexic and bulimic patients differ in their weeping behavior compared to each other and to controls. Whereas healthy people use crying as a relief from tension, anorexic patients avoid crying and bulimic patients use it in a manipulative way. Research in weeping and expressed emotions is still a very small area, which nonetheless adds important information to the understanding and therapy of psychiatric illnesses.

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