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Hypnotizability in Bulimic Patients and Controls

A Pilot Study

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Summary. Various studies have indicated that bulimics are more easily hypnotized and dissociate more readily than control groups and patients with other eating disorders. A comparison is reported of 15 inpatients with bulimia nervosa (DSM III-R) with 15 subjects in a control group comparable in age and education. The instrument used was the Harvard Group Scale of Hypnotic Susceptibility/Form A (HSGHS: A), which includes 12 standardized test suggestions. The results show that bulimics have higher scores in hypnotizability than the control group. A method study (comparison of self-evaluation with a video recording) shows that this is a result of the behaviour itself and not of the answering pattern used by the subjects in the questionnaire. It is possible that differing expectations regarding the experiment may have influenced the results. Considerations concerning the increased ability of bulimics to dissociate as a causal factor versus an accompanying phenomenon of the disorder are discussed.

Key words: Hypnotizability – Bulimia nervosa – Dissociation

Introduction

After Pierre Janet (for a review see Vanderlinden and Vandereycken, 1991) called attention to the effectiveness of hypnotic forms of treatment for eating disorders, almost 80 years passed until the first empirical studies regarding this topic were undertaken. Recently, scientific interest has focused on the relationship between hypnotizability, dissociation and bulimic eating behaviour. In his neodissociation theory, Hilgard (1973) assumed that the human cognitive system is composed of a number of information processing subsystems, which are hierarchically ordered and process information. Each subsystem has its own input/output, but it is connected with the others through a feedback arrangement. In ad-

dition, a dominant central control structure is assumed to regulate the interaction and competition of the subsystems. This structure is "usually identified by the person as the self that plans and manages his affaires" (Hilgard, 1973, p. 405). Dissociation is understood to be a separation of subordinate cognitive control systems from the integrated organization of the cognitive apparatus. These dissociated subsystems operate relatively independently from conscious control and can be responsible for perceptions, thoughts feelings and behaviour. Dissociative mechanisms are regarded in research on hypnosis as a prerequisite to the experience of hypnotic phenomena (Hilgard 1973; Bowers 1976; Kihlstrom and Evans 1979). Accordingly, the degree to which an individual can enter a hypnotic state and produce hypnotic phenomena, i.e. the degree of his hypnotizability, is depenent upon his dissociative abilities.

Bulimic persons experience their eating behaviour in a similar way to that in which hypnotized persons perceive hypnotic phenomena: It is experienced as uncontrollable, as if it occurs involuntarily (see Torem 1986). This lead to the assumption that bulimic eating behaviour could likewise by conveyed through the dissociation of subsystems. At a first glance, it would appear that such different phenomena as hypnosis and bulimic eating behaviour have the mechanism of cognitive dissociation in common. Empirical studies on this topic were undertaken by Pettinati et al. (1985), Sanders (1986), Vanderlinden and Vandereycken (1991) and Barabasz (1991). Pettinati et al. (1985) compared 65 patients with a DSM III diagnosis of anorexia with 21 patients with a diagnosis of bulimia nervosa, using three different hypnosis scales. The bulimics showed a significantly higher hypnotizability in two scales in comparison with the anorectics; on a third scale, the Harvard Group Scale of Hypnotizability, Form A (HGSHS: A), only one tendency was found. When the restrictive anorectics were differentiated from the bulimic anorectics, the latter showed a tendency toward higher scores in hypnotizability than the restrictive anorectics; however, they remained significantly lower than the bulimics. The scores for the restrictive anorectics were in the normal range.

In an investigation by Sanders (1986), 114 psychology students served as subjects, among whom 40 exhibited binge eating behaviour. This group did not differ in respect to age, height or weight from the other 74 persons with normal eating behaviour. As expected, they did show differences in the frequency and intensity of dissociative experiences in self-rating "Perceptual Alteration Scale (PAS)" developed by Sanders (60 items regarding dissociative experiences; e.g. "I have episodes of laughing and crying, which I cannot control").

Vanderlinden and Vandereycken (1991) undertook a study of 17 restrictive and 12 bulimic anorectics, 12 bulimics with normal weight and 6 patients with atypical eating disorders (average age 25 years, average age of illness 6 years). Hypnotizability was measured with the Stanford Hypnotic Clinical Scale (SHCS) and the presence of dissociative experience with a self-rating scale (DIS). As in the study by Pettinati et al. (1985), the bulimics were found to have higher hypnotizability and more dissociative experiences than the anorectics, whereas the bulimic subgroup had higher scores than the restrictive bulimics.

In the study by Barabasz (1991) using the Stanford Hypnotic Susceptibility Scale, Form C (SHSS:C), the 42 bulimic students scored higher than the 42 students without eating disorders. However, the bulimics showed no difference in the items testing for dissociative abilities in comparison with the other persons.

On the whole, the results up to now support the hypothesis that bulimic patients have higher dissociative abilities and a higher hypnotizability than do control groups (anorectics, persons with normal eating behaviour). The aim of the present study was to test this hypothesis by comparing a sample of inpatients with bulimia nervosa and healthy controls. In addition, it was investigated whether the two groups differ in specific hypnotic phenomena (see subgroups in next section).

Furthermore the hypothesis was tested whether the self-ratings of the hypnotic phenomena were in agreement with the observer-ratings. This question is of basic interest but also important for the interpretation of the results (see Discussion).

The question of specificity, i.e. whether bulimics differ from patients with other disorders in regard to their hypnotizability could not be clarified in our study. Pettinati makes references to investigations of hypnotizability of patients with phobic disorders (Pettinati, 1985, p. 1014) in her study. Explicit studies in which eating disorders are compared with other disorders are not known to us. This remains an important issue for further investigations.

Subjects and Methods

Subjects

The patient group consisted of 15 persons with bulimia nervosa (according to the DSM III-R criteria), consecutively admitted to the Psychosomatic Clinic Roseneck (Prien) for inpatient treatment. The clinical diagnosis was confirmed by the use of a screening inventory containing 15 questions concerning eating symp-

toms. The questions in the inventory pertained to the time of admittance and 3 months prior to that time. All subjects were informed in detail about the experiment, so that a refusal to take part in a hypnotic experiment was possible. The subjects were informed of a possible connection between bulimic eating behaviour and hypnotizability. From those patients asked to take part in the study, three refused participation out of fear of "losing control", two patients could not be included because of their low weight, which made the diagnosis bulimia nervosa questionable and the parents of one underaged patient refused permission for participation. All 15 patients stated that they had suffered from eating binges with loss of control during which they ate large amounts of food within a short period of time. Thirteen patients acknowledged having induced vomiting at least 3-7 times weekly and two patients did not induce vomiting but used laxatives 3-7 times a week. All patients were overly concerned with weight and figure. The weight of 12 patients was not less than 85% of their ideal weight; 3 patients weighed between 15 and 20% less than their ideal weight.

The control group consisted of 15 healthy female persons (adhoc sample). One person refused to take part in the study out of fear of "losing control". The criterion of general psychic and physical wellbeing was checked for by the use of an unstructured interview and questionnaires (Eating Disorder Inventory (EDI) from Garner et al., 1983; Self-Report Symptom Inventory (SCL-90-R) from Derogatis, 1981). Eight control persons achieved scores above normal on individual scales of the EDI or the SCL-90-R. However, according to Garner et al. (1983, p. 17ff and p. 29ff), it is not the high scores in individual scales which are of importance, but specific combinations of high scoring scales: high ratings for all scales are important clues for the possible existence of a restrictive or bulimic anorexia nervosa; high rates for the scales 1 (ideal of slimness), 2 (bulimia) and 3 (dissatisfaction with the own body) indicate the possible presence of bulimia nervosa.

None of the control persons reached a relevant pattern of high scores on the scales of the EDI, so that no eating disorder seemed to be present. There is also no reason to assume psychopathological symptoms, because of a single high score on one of the scales of the SCL-90-R. One control person who showed high scores on a relevant combination of scales (anxiety, phobic fear, paranoid thinking) was an exception.

The control group was chosen in such a way that it was comparable with the patient group regarding age and education. The average age in the patient group was 25 years (16–35 years), in the control group 22 years (16–35 years). The amount of education in both groups was also equivalent.

Test-instrument

Hypnotizability was measured with the German version of the Harvard Group Scale of Hypnotic Susceptibility, Form A (HGSHS: A). This scale was developed by Shor and Orne (1962), translated into German (1980) and standardized (1985; see Table 2) by Bongartz. It is adapted from the individually administered Stanford Hypnotic Susceptibility Scale, Form A of Weitzenhoffer and Hilgard (1959). The HGSHS: A contains 12 standardized test-suggestions concerning hypnotic experiences, which can be categorized into three groups according to the content and degree of difficulty (McConkey, Sheehan and Law, 1980):

- ideomotoric items, lowest item difficulty: 1 (postural alteration) 2 (eye closure), 3 (hand lowering), 7 (hands moving).
- challenge items, medium item difficulty: 4 (arm immobilization), 5 (finger lock), 6 (arm rigidity), 8 (inhibition), 10 (eye catalepsy).
- cognitive and delusory items, highest difficulty: 9 (hallucination), 11 (posthypnotic suggestion), 12 (amnesia).

The HGSHS: A can be administered via tape recordings in groups. The presentation takes about 1 h. The criterion for realization of the suggested reaction is the objective behavioural response. Following the hypnotic procedure, this is judged by the subjects them-

Table 1. High scores of control persons on subscales of EDI and SCL-90-R

Control person	EDI subscales ^a	Scores	Means	SD	SCL-90-R subscales ^b	Scores	Means	SD
1	Perfectionism	10	5.2	0.4				
2	Interoceptive awareness Maturity	5 9	2.9 2.5	0.3 0.3	Anger/hostility	0.83	0.3	0.4
4					Anxiety Phobic anxiety Paranoid ideation	0.90 0.71 1.00	0.3 0.1 0.3	0.4 0.3 0.4
5	Interpersonal distrust	6	2.2	0.1	Paranoid ideation	0.83	0.3	0.4
6	Interpersonal distrust	6	2.2	0.1	Interpersonal sensitivity	0.78	0.3	0.4
8	Body dissatisfaction	13	10.0	0.3	Interpersonal sensitivity	1.11	0.3	0.4
11					Obsessive/compulsive	0.90	0.4	0.5
15	Perfectionism Interpersonal distrust	11 5	5.2 2.2	0.4 0.1				

^a For the values of the EDI see Garner, Olmstead and Polivy (1983)

selves in a questionnaire contained in the scale. The total score of the 12 items ranges from 0 to 12 points (per item, one point for performance of the suggested reaction). According to the final score the subjects can be placed into hypnotizability categories. The criteria for the number and the limit of the categories is not uniformly determined; here the categories of Lawrence and Perry (1985; cited in Bongartz 1985) were used: high hypnotizable score (10–12 points), high-medium (7–9 points), low-medium (3–6 points) and low hypnotizable score (0–2 points).

Procedure

The hypnotic sessions took place in groups of two persons each. The time of testing for the bulimics depended on their therapy plan, so there were no set testing times; no tests were carried out after 4 p.m. for technical reasons. The control subjects were all tested in the evenings. We found no information in the literature concerning the influence of time of day on hypnotizability. The session with the bulimic subjects took place in group rooms or rooms of the therapists in the clinic. The control group sessions took place either in the clinic or in a consulting room of the Psychology Institute of the University of Salzburg. For control purposes the bulimics were recorded on videos which were later scored by an independent rater. The self-evaluation of the bulimics was unknown to the rater. He had to decide whether the critical behaviour was presented or not, whereby the formulation of the scale was given.

Results

A comparison between the bulimic and the control groups showed a significant difference in the scale measuring hypnotizability (*U*-test two-tailed, P < 0.05): a) bulimics (N = 15): M = 7.07, s = 3.09, b) control persons (N = 15): M = 4.47, s = 2.50.

These results were also confirmed using the classification criteria according to Bongartz (1985). Only 3 of 15 control persons showed scores of seven and above (see Table 2) in comparison with 9 out of the 15 bulimics. The difference is significant at the P = < 0.10-level ($\chi^2 = 3.5$; df = 1).

Table 2. Frequencies of subjects falling within four scoring categories of hypnotizability

Categories	Bulimia nervosa	Controls	
High (10–12)	3	1	
High-medium (7-9)	6	2	
Low-medium (3–6)	4	7	
Low (2-0)	2	5	
Total	15	15	

Note: $\chi^2 (\geq 7 \text{ vs} < 7) = 3.49$; df = 1; $P \leq 0.10$

In order to ascertain if specific hypnotic phenomena differed between the two groups, they were compared on the item level, whereby the three item groups – ideomotoric items, challenge items and items of cognitive and perceptual response – were of interest (for results see Table 3).

There was a significant difference at the 5% level for two items (5 = finger lock, 8 = inhibition). Item 6 (arm rigidity) showed a tendency (10% level) towards significance. These three times all belong to the group of challenge items (4-6, 8, 10), in which a certain suggestion is presented to the subjects, which should then be taken back. If this latter instruction is not followed, then the original suggestion is more effective, which is an indicator for hypnotizability. A trend toward group differences (P < 0.10) could be seen in two further items (3 and 12), which belong to the other two item groups. Like Barabasz (1991), we did not find higher scores for bulimics in the items of cognitive and perceptual response, which require a strong ability for hypnotic experience and dissociation. Barabasz gave no information concerning the challenge items, so that a comparison of the studies on this point was not possible. The degree to which these findings can be correlated with the content of the dis-

^b For the values of SCL-90-R see Derogatis (1981)

Table 3. Frequencies percentages (% of N = 15) of subjects passing each item of HGSHS: A (self-rating), chi-square (df = 1) and level of significance

Individual HGSHS: A items	Bulimia nervosa (N = 15)			Controls $(N = 15)$		P
	\overline{N}	%	\overline{N}	%		
1. Postural alteration	11	73	8	53	1.3	-
2. Eye closure	10	67	7	47	1.2	~
3. Hand lowering	13	87	9	60	2.7	*
4. Arm immobilization	8	53	7	47	0.1	_
5. Finger lock	12	80	5	33	6.7	**
6. Arm rigidity	9	60	4	27	3.4	*
7. Hands moving	9	60	7	47	0.5	
8. Inhibition	10	67	3	20	6.6	**
9. Hallucination	4	27	1	7	2.1	_
10. Eye catalepsy	8	53	8	53	0.0	_
11. Posthypnotic suggestion	6	40	6	40	0.0	_
12. Amnesie	6	40	2	13	2.7	*

Note: ** P < 0.05; * P < 0.10

order is open to discussion, as no specific interpretations are apparent. Further research is recommended.

Finally, we consider the question of the connection between the self- and observer ratings of hypnotizability. For the comparison of the self-ratings of the bulimics with objective evaluations of the video recordings, only 13 patients were available because of technical reasons. Nine from the 12 items were used for this method study. Two of the items (2 and 10) were concerned with behaviour of the eye, which could not be judged with the video equipment used; item 1 (posthypnotic amnesia) is not an item of behaviour and therefore cannot be evaluated with video. There was a maximum of two divergencies for the 13 pairs of self and observer scoring.

- 0 devergencies: 2 items; 6 (arm rigidity), 11 (posthypnotic suggestion)
- 1 divergency: 4 items; 3 (hand lowering), 5 (finger lock), 8 (inhibition), 9 (hallucination).
- 2 divergencies: 3 items; 1 (postural alteration), 4 (arm immobilization), 7 (hands moving).

The results indicate a high conformity between self and rater scoring; 10 of 117 comparisons (9 items \times 13 patients) were not in agreement (under 10%; no statistical test, because these 117 comparisons are not independent events).

Discussion

Higher Hypnotizability in Bulimic Patients

The present study demonstrates a higher hypnotizability in bulimic persons than in controls. This can be seen in the statistically significant difference of the mean scores and in the higher number of bulimics in the above two hypnotizability categories. This finding confirms the results of the studies cited in the introduction.

When compared with the general standardized data for the HGSHS: A, the hypnotizability scores of the bulimics in the study of Pettinati et al. (1985) and in our study were only minimally above the general standardized scores. The bulimics in the study by Pettinati et al. demonstrated M = 8.05, whereas Bongartz (1985) found M =7.39 for an American sample; since a control group was lacking, it remains unclear whether these standardized scores can be used in evaluating these clinical groups. This assumption resulted from the analysis of a Germanspeaking sample. The bulimics in our study showed M =7.07, the control group M = 4.47. When compared with the standardized scores for German-speaking persons, the scores for the bulimic group were only, slightly higher, whereas the average score for the control group was distinctly lower (standardized score of the German-speaking sample according to Bongartz, 1985: M = 6.50). However, a more careful look at this sample shows that Bongartz (1985) selected mainly psychology students (N=258) and other students (N=116) for the normative sample. Since our samples were comprised of subjects with differing education and age, they could not be compared with the normative sample. Therefore our findings could only be interpreted relatively (comparison between the two groups); the absolute values are not interpretable. It should also be noted that this study does not demonstrate these findings as being specific for bulimic persons, as no other clinical group was available for comparison. This question could be clarified in a further step.

Before we draw conclusions from the demonstrated higher hypnotizability scores, we should discuss two alternative explanations, which are not directly related to the hypnotizability.

Alternative Explanations

We do not think that the difference in hypnotizability found in our study can be explained by the average age difference of 3 years between the bulimic group and the control group. Hypnotizability is conceptualized as a relatively stable characteristic of the individual, which cannot be acquired short-term but results from the individual developmental history (Hilgard, 1965). In accordance with this theoretical consideration, we assume the age difference of 3 years to be of minor relevance.

Higher Suggestibility in Answering the Questionnaire. The above findings are possibly the result of the bulimics being more susceptible to suggestion in the questionnaires than the control persons and that their experience and behaviour did not differ from the control persons. Retrospective reporting may also lead to distortions. This was checked for by the use of video recordings of the bulimics. Since the criteria for coding (which factors indicate for hypnotizability) were not known to the rater, it is unlikely that the categorization was influenced by subjective hypotheses of the rater. It was thus possible to compare the self-ratings of the bulimics with objective evaluations of the videos. The data indicate that the interpretation presented above (differing answering behaviour) is improbable. The Role of Expectation. The expectation of a correlation between bulimia nervosa and hypnotizability as implied in the initial information session presents a second possible explanation of the results. The results of studies in this direction are contradictory, so the influence of expectation on measured hypnotizability is not clear. For this reason and because of our results of the studies previously referred to, we do not assume that the found differences in hypnotizability are solely the result of differing expectations. In larger studies, however, it would be important to control for expectations.

Dissociation as an Explanation

Although the alternate hypothesis of differential anticipatory attitudes cannot be excluded, considerations concerning the content of the findings are of interest. If high hypnotizability is a characteristic of bulimia nervosa and if hypnotizability is mainly conveyed through the cognitive mechanism of dissociation, then bulimia nervosa and specifically bulimic eating behaviour would be connected with phenomena of dissociation. Bulimic persons appear to have a high capability of dissociating cognitive subsystems from the hierarchical order of the cognitive apparatus, so that these operate relatively autonomously. This increased ability to dissociate could be condition found prior to this disorder or it could be an accompanying factor. Several authors indicate that the ability to dissociate, which means an increased hypnotizability, is associated with dramatic experiences during childhood or adulthood. Accordingly, dissociative mechanisms would function as defence mechanisms against painful emotions, which arise through the memory of these experiences. The ability to dissociate would thus be a factor in the development of disorders such as bulimia nervosa. The results of Vanderlinden and Vandereycken (1991) substantiate, in our opinion, this hypothesis. In addition to hypnotizability, the authors gathered data on dramatic experiences. In patients with bulimia nervosa and atypical eating disorders, they found a greater amount of dramatic experiences, an increased ability to dissociate and a higher hypnotizability (see also Spiegel et al. 1988; Lynn and Rhue 1988).

Relevance for Therapy

If dissociated subsystems determine the bulimic eating behaviour relatively autonomously, then the dissociated subsystems could be made accessible to the conscious control apparatus to regain control of the behaviour which it regulates. Perhaps through hypnosis, access to dissociated systems could be regained, in order to reintegrate them into the whole of the personality (see e.g. Torem 1986). Furthermore, the good response of bulimics to hypnotic procedures could be put to general therapeutic use. Many authors, such as Gross (1986), Vanderlinden and Vandereycken (1991) or Griffiths (1989), name several possible uses of hypnosis or hypno-behavioural techniques in the therapy of eating disorders, especially in bulimia nervosa. First of all, hypnosis can, of course, be used as a relaxation technique. Furthermore, suggestions could be selectively employed to contribute to increasing self-esteem, correcting distorted body image, training the perception of internal stimuli, reducing fear, etc. A direct influence on the eating behaviour may be possible by the selective use of posthypnotic suggestions.

A substantial point of criticism to be considered in the interpretation of our results is the fact that neither the investigator nor the probands were blind in regard to our hypothesis. To exclude effects of preinformation, expectation and behaviour concurring with the hypothesis, further investigations are necessary, in which either the probands and nor, if possible, the investigators have information about the hypothesis. This could be difficult to practice as investigators and probands may implicitly built their own hypothesis, which could influence the results.

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