

DIETARY RESTRAINT, HYPNOTIZABILITY AND BODY IMAGE

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ABSTRACT

There is growing evidence of a correlation between bulimia nervosa and hypnotic susceptibility. The present study supports the existence of a similar relationship in non-clinical populations between restrained eating and increased hypnotizability. In the second part of the study, a modified version of the Creative Imagination Scale was used to investigate the responsiveness of restrained and non-restrained eaters in a non-clinical group to suggestions of body image change. Non-restrained eaters resisted suggestions both of increased and decreased body size. The restrained eaters also resisted suggestions of decreased body size but were more responsive to suggestions of increased body size. Implications for the aetiology and treatment of eating disorders are considered.

Dietary restraint involves the conscious control of eating coupled with an overconcern with body size (Stunkard & Messick, 1985) and it has been suggested that restrained eating is causally implicated in the development of bulimia nervosa (e.g., Stice, 1994). Consistent with this view, restrained eaters in normal populations have a number of features in common with bulimics. Bulimics for example have been found to score highly on measures of dissociation (Covino, Jimerson, Wolfe, Franko & Frankel, 1994) and Rosen and Petty (1994) have recently provided empirical evidence linking disordered eating in a non-clinical population with dissociation of feelings and loss of control. Similarly, one study (Groth-Marnat & Schumaker, 1990) has investigated hypnotic susceptibility in restrained eaters and this has shown that they, like bulimics (Griffiths & Channon-Little, 1993; Young, 1995), are more likely than the general population to be high in hypnotic susceptibility.

There is some evidence then to link bulimia and restrained eating with both dissociative tendencies and high hypnotic susceptibility and this might have implications for our understanding of the aetiology and treatment of these conditions. Groth-Marnat and Schumaker (1990) used the Harvard Group Scale of Hypnotic Susceptibility (Shor & Orne, 1962) in their demonstration of increased hypnotic susceptibility in those individuals showing elevated scores on the Eating Attitudes Test (Garner, Olmstead, Bohr & Garfinkel, 1982) and the Goldfarb Fear of Fat Scale (Goldfarb, Dykens & Gerrard, 1985) in an Australian female college population. The first study to be reported here assesses the generality of this observation in female British undergraduate students using the Creative Imagination Scale (Barber & Wilson, 1978) to measure hypnotic susceptibility and the Three Factor Eating Questionnaire (Stunkard & Messick, 1985) as a measure of dietary restraint.

EXPERIMENT 1

Method

Subjects Twenty female undergraduate volunteers of normal weight and between the ages of 19 and 25 (mean = 20.8, SD = 0.87) were recruited from London Colleges.

Procedure The subjects were recruited for an experiment 'investigating attitudes to eating and strength of imagery in females'. They were tested in a laboratory setting, individually or in small groups depending on availability of volunteers. They first completed the Three Factor Eating Questionnaire (TFEQ), which was devised by Stunkard & Messick (1985) as a comprehensive measure of human eating behaviour by combining items from then available 'restrained eating' and 'latent obesity' scales plus a number of items based on their own clinical experience. The TFEQ takes approximately 20 minutes to administer and consists of 51 items, measuring three dimensions of eating behaviour identified by factor analysis, from an initial pool of 67 items tested on several populations selected to include individuals who exhibited the complete range from extreme dietary restraint to extreme lack of restraint. The factors are: Factor 1, cognitive restraint; Factor 2, disinhibition of control and Factor 3, susceptibility to hunger. Part I of the questionnaire consists of 36 statements, e.g., 'I usually eat too much on social occasions and picnics', requiring 'True' or 'False' answers. Part II comprises 15 questions, e.g., 'How often are you dieting in a conscious effort to control your weight?', to be rated on a four-point scale from 'never' to 'always' (or equivalent). Subjects can score 0 or 1 on each item in both parts of the scale so that overall scores can range from 0 to 51, with higher scores indicating greater dietary disorder. The full questionnaire and scoring instructions are given in Stunkard & Messick (1985).

Subjects were then assessed in the same experimental session for their hypnotic susceptibility using the Creative Imagination Scale (CIS; Barber & Wilson, 1978). The CIS correlates highly with other standard measures of hypnotic susceptibility and was selected for use in this study partly for its greater ease and speed of administration. It was also of particular interest because of its emphasis on the use of imagery, which made it a potentially useful tool for investigating body imagery in relation to eating disorders, as was done in the next experiment. The CIS consists of 10 short scripts that encourage subjects to use their own thoughts and imagery in order to experience suggested effects such as arm heaviness, arm levitation, finger anaesthesia, music hallucination, age regression, etc. The CIS was administered via a tape recording with the subjects' eyes closed. The subjects then rated how similar each of their imagined experiences were to real experiences on a five-point scale from 'Not at all the same' (0) to 'Almost exactly the same' (4). Total scores can range from 0 to 40, with higher scores indicating greater hypnotic susceptibility. Administration of the scale took approximately 25 minutes and each subject's self-scoring of his or her experiences required a further 10 minutes.

Results

Calculating the Spearman rank correlation coefficient using the overall scores obtained by the subjects on the TFEQ and on the CIS revealed that there was a positive correlation between hypnotic susceptibility and scores on the eating scale ($r = 0.55; P < 0.01$).

Analysis of data obtained on the three factors of the TFEQ separately revealed a significant positive correlation between hypnotic susceptibility and cognitive restraint of eating (Factor I), $r = 0.61; P < 0.005$. However, no significant correlations were found between hypnotic susceptibility and disinhibition of control (Factor II), $r = 0.25$; or between hypnotic susceptibility and susceptibility to hunger (Factor III), $r = 0.12$.

Discussion

The results of the first experiment thus support and add generality to observations made using other measures and a different subject group that hypnotic susceptibility is associated with dietary restraint in normal weight females drawn from a non-clinical population. In view of the long claimed link between hypnotizability and dissociation on the one hand (e.g., Bliss, 1986; Hilgard, 1977) and more recently between dissociation and bingeing on the other (Covino, Jimerson, Wolfe, Franko & Frankel, 1994), the absence of a correlation between hypnotizability and disinhibition of control in our results is perhaps surprising. Future studies might usefully include direct measures of binge eating and of dissociation alongside the CIS and the TFEQ in a non-clinical population.

EXPERIMENT 2

The CIS emphasizes strength of imagery and experiment 1 indicates that restrained eaters are high in creative imagery ability. The CIS does not have an item related to body image and as this is an area of imagery that is assumed to be disturbed in the eating disorders (Rosen, 1992; Williamson, Cubic & Gleaves, 1993), the second experiment investigates responsiveness to body image changes in restrained and normal eaters using a modified version of the CIS.

Method

Subjects Forty-two female students were recruited via advertisements in Student's Residences in a large London College and in student societies. Their ages ranged from 16 to 28 years (mean 22.4, SD = 4.54), their mean height was 162.6 cm, (SD = 24.1 cm) and their mean weight was 56.6 kg (SD = 6.9). Their mean body mass index (BMI = weight in kg/height in m²) was 21.30 (Williamson, 1990). All subjects were paid for their participation in the study.

Procedure Subjects were recruited initially to take part in a 'psychology experiment on creative imagery'. They were tested in groups of 2–5 in the Hypnosis Unit at University College London. Two sets of measurements were taken in a single experimental session: the Three Factor Eating Questionnaire (TFEQ) as before, and a modified version of the Creative Imagination Scale (MCIS). To avoid biasing subjects towards eating related issues from the outset, the MCIS was administered first followed by the TFEQ. The instructions given to subjects before the MCIS were 'This study is concerned with the variation in women's responses to verbally suggested imagery. The imagery instructions will be given by tape recorder and when this is completed we will ask you to fill in a sheet describing your responses.' Before the TFEQ was administered, the subjects were told 'The experiment you have just completed looked at your response to various types of imagery. The way we respond to imagery may be related to other aspects of our lives and the aspect we are interested in next is to do with eating behaviour. We will ask you to complete a brief questionnaire and we would also like to record your weight and height.' Subjects were told they could withdraw from the experiment at this point before completing the TFEQ and without giving a reason if they wished but none did so.

The MCIS consisted of eight test-items, six of them from the original CIS. The original scale items were rearranged so the easiest ones were presented first in order to maximize subjects' motivation and expectancies (see Barber & Wilson, 1978), though this did place the Mind-body Relaxation item first in the sequence, with the possibility that some might see this as equivalent to an induction. The order of CIS-derived items

was: Mind-body Relaxation, Age Regression, Arm Heaviness, Water Hallucination, Music Hallucination, Temperature Hallucination. These six items were selected to be as representative as possible of the range of items in the full CIS in terms of content and difficulty. The two additional items that referred to body size change were designed in the same manner as the original CIS items and were inserted into the above series of CIS-derived items at positions three and four to form the MCIS. They both encouraged the subject to imagine standing in front of a full-length mirror, which progressively changed the view she had of herself. The first involved the subject seeing her reflected image becoming slimmer and narrower and experiencing the bodily feelings associated with that change. The second involved the subject imagining her body becoming fatter and wider. The script for the 'slimmer' item was as follows:

Keep your eyes closed. By using your imagination creatively, you can experience what it would be like to see yourself in different types of mirrors and experience changes in your body size. First, imagine that you are standing in front of a mirror. You can see all of yourself in the mirror. This is a specially constructed mirror. If you are moving towards it, it makes you appear narrower and narrower the closer you get. Now you are moving towards the mirror, and you see yourself becoming narrower and narrower and feel yourself becoming slimmer and slimmer. As you continue moving towards the mirror you can feel and see that your stomach becomes smaller, your hips and thighs become narrower and slimmer. Your body becomes narrower and narrower, slimmer and slimmer. You continue to move towards the mirror until your body becomes as narrow and slim as it possibly can. Continue moving closer towards the mirror and see and feel the changes as they happen.

The 'fatter' item followed after a 15-second pause:

Good. Now move back again to the point where you started. Still facing the mirror and seeing all of yourself in it, begin to move backwards from the mirror still facing it. As you are moving away from it, it makes you appear wider and wider the farther away you get. You see yourself becoming wider and wider and feel yourself becoming fatter and fatter. As you continue moving backwards from the mirror you can feel and see that your stomach becomes bigger, your hips and thighs become wider and fatter. Your body becomes wider and wider, fatter and fatter. You continue to move backwards from the mirror until your body becomes as wide and fat as it possibly can, fatter and fatter, wider and wider. Continue moving away from the mirror and see and feel the changes as they happen.

The two size-related items were terminated after a 15-second pause with 'Now move forward again until you are back to the place where you started at the beginning, and you look and feel completely back to normal.'

Following administration of the scale, the subjects rated the strength of their experiences in response to each of the eight test-suggestions on a five-point scale from 'Not at all strong' (score of 0) to 'Very strong' (score of 4).

Administration of the MCIS took 17 minutes and subject's self-scoring of their experiences required about 5 minutes. Height and weight measures were taken at the end of the experiment.

Results

Scores on the TFEQ ranged from 9 to 36. Of the 42 subjects, those whose scores fell within the top quarter of this range were classified as restrained eaters (N = 6) and those in the bottom quarter were classified as non-restrained eaters (N = 23).

The six items from the CIS (i.e., excluding the body image items) were used to assess hypnotizability in the two groups. The mean score per item for the restrained eaters was 2.71 (SD = 1.05) and the mean for non-restrained eaters 2.28 (SD = 0.58). This difference is significant (Mann Whitney, $z = 1.80$, $P < 0.05$) with restrained eaters being more hypnotizable.

The overall mean scores for the six items of the CIS were then compared separately with the two body size related items for the restrained and the non-restrained eaters using the Wilcoxon Signed Ranks Test. In the restrained eaters, there was a significant difference in response to item 3 ('slimmer': mean = 2.0, SD = 0.63) compared with the other items on the CIS (mean = 2.71, SD = 1.05: $z = 0.95$, $P < 0.05$), with lower responsiveness to the body size item. However, there was no significant difference in responsiveness to item 4 ('fatter': mean = 2.33, SD = 1.36) compared with the other items on the CIS. In the non-restrained eaters, there was a significant difference in scores over all six CIS items (mean = 2.28, SD = 0.58) compared with both item 3 ('slimmer': mean = 2.08, SD = 1.25: $z = 3.10$, $P < 0.002$,) and item 4 ('fatter': mean = 2.2, SD = 1.35: $z = 2.97$, $P < 0.01$) with lower scores in response to the body size items.

There was no significant difference in age between the non-restrained eaters (mean = 21.4, SD = 5.04) and the restrained eaters (mean = 19.6, SD = 2.33) or in BMI (restrained eaters, mean = 21.21, SD = 1.55; non-restrained eaters, mean = 19.94, SD = 1.51).

Discussion and conclusion

Considering the six standard CIS items as a general measure of hypnotic susceptibility, experiment 2 provides additional evidence that restrained eating is associated with greater hypnotizability in a non-clinical population. Using the mean score on the standard CIS items as a baseline for comparison within the two groups, the scores on the body image items in the modified CIS for the non-restrained eating group were both found to be significantly below the baseline score. In the restrained eating group, responsiveness to the 'slimmer' imagery was again significantly below the baseline score but responsiveness to the 'fatter' item was not significantly different from baseline. One possible interpretation of this is that the restrained group, perhaps because of their higher hypnotizability, were more responsive to a second size-related item irrespective of the direction of change involved. If the study is to be repeated, the order of the two items should be counterbalanced within groups to test this possibility. A second, and arguably more plausible, interpretation is that whilst they are no more responsive than the non-restrained group to 'slimmer' suggestions, the restrained eaters are more ready to see themselves as fatter than they actually are. This would of course fit in with the expected direction of body image distortion in this group and is consistent with the hypothesis that the image distortion is generated in the first instance by their high hypnotic susceptibility (Bliss, 1986). If the latter view was adopted, hypnotizability could be seen as having a role as a moderator at the very early stages of internalization of sociocultural pressures, which in Stice's (1994) model lead to body dissatisfaction and distorted body image, and thereby to restrained eating and ultimately bulimia nervosa.

The results would also imply that simple direct suggestions intended to normalize body image in the 'slimmer' direction would not be successful in eating disordered clients. The increased hypnotic susceptibility of many eating disordered individuals, particularly bulimics, might nevertheless be expected to enhance the outcome of more structured therapeutic interventions if hypnosis is used as an adjunctive procedure.

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