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**The anorexic voice and severity of eating pathology in anorexia nervosa**

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Running head: THE ANOREXIC VOICE

## The anorexic voice and severity of eating pathology in anorexia nervosa

### Abstract

**Objective:** Internal 'anorexic voices' are commonly described by individuals with eating disorders. This study examines whether the perceived power and nature of that voice are related to eating pathology in anorexia nervosa.

**Method:** Sixty-three women and one man with an ICD-10 diagnosis of anorexia nervosa participated in this study (mean age = 27.3 years; mean BMI = 16.0). Participants completed questionnaires measuring severity of eating pathology, perceived voice power, and beliefs about voices, either at the start or during treatment.

**Results:** 3.5 A more powerful anorexic voice was associated with more negative eating attitudes in this clinical group. However, BMI was related to a moderating effect, with the interaction of greater voice power and malevolence being associated with a lower BMI.

**Discussion:** These findings suggest the anorexic voice may function as a maintenance factor in anorexia nervosa. Cognitive models of hearing voices may be applicable to disorders other than psychosis. Further explorations are warranted.

### Keywords

Anorexia nervosa; anorexic voice; beliefs about voices; eating disorders

## **The anorexic voice and severity of eating pathology in anorexia nervosa**

The literature on anorexia nervosa contains references to the 'anorexic voice'. Case material indicates that, in contrast to eating disorder cognitions, the anorexic voice is usually experienced as a second or third person commentary on actions and consequences relating to eating, weight and shape (1-2). It is experienced as distinct from the self and self-criticism (3). It is usually recognised as internally generated rather than alien, distinguishing it from 'true' auditory hallucinations. Patients describe the anorexic voice as supportive in the early stages of illness (2), but becoming more controlling and hostile over time (4). They report feeling enmeshed and trapped by the voice, with efforts to resist it resulting in increased attacking (5). Thus, the patient can become more resistant to change. Interventions for the anorexic voice (6-9) address cognitive and relational aspects (e.g., power imbalances; boundary setting; challenging maladaptive appraisals). The link between the anorexic voice and eating pathology might best be understood using cognitive models of psychotic phenomena (10). Those models stress the importance of the *power* and *nature* of the voice. Voices that are perceived as more powerful than the self are associated with distress and depression, though that effect is moderated by the voice's nature – particularly its benevolence or malevolence (11-12).

The aim of this study is to determine the relationship between the anorexic voice and the severity of symptoms among anorexia nervosa patients. Given the literature on psychotic voices, it can be hypothesised that an anorexic voice that is perceived as more powerful than the self will be associated with more severe anorexic symptoms, but that the benevolent or malevolent nature of that voice will moderate that association.

### **Method**

#### **Participants**

The project received approval from a National Health Service Research Ethics Committee. Participants were recruited from a publically-funded eating disorders service in the UK, either before or during treatment. Each met ICD-10 criteria for anorexia nervosa,

following diagnostic clinical interview and multidisciplinary discussion (13). There were a total of 64 participants (63 women). Most were Caucasian (76.6%). Their mean age was 27.3 years ( $SD = 10.1$ , range = 18-70). The mean duration of their anorexia nervosa was 7.3 years ( $SD = 6.2$ , range = 0.3-29). Forty-six had restrictive anorexia, and 18 had binge/purge anorexia.

## Measures

Diagnosis and objective weight and height were provided by the clinician. Participants completed the following three self-report measures.

Eating Disorder Examination Questionnaire (EDE-Q, version 6; 14). The EDE-Q is a 28-item self-report measure addressing eating disorder cognitions and behaviors. It has acceptable psychometric properties (15). For the current study, only the global attitudinal score was used. **3.2 The internal consistency of the EDE-Q global score in this study was strong (Cronbach's  $\alpha = .911$ ).**

Voice Power Differential Scale (VPDS - 11). The VPDS is a seven-item self-report questionnaire, which measures the perceived power and dominance of voices relative to the self. Items are rated on a five-point bipolar scale (e.g., "I am much more powerful than my voice" through to "my voice is much more powerful than me"). Total scores range from 0-28, with higher scores indicating greater voice power. The measure was adapted for the current purposes by replacing 'voices' with 'anorexic voice/thoughts'. The original VPDS has high internal consistency (11).

Beliefs about Voices Questionnaire – Revised (BAVQ-R - 16). The BAVQ-R is a 35-item self-report questionnaire, which measures beliefs about voices and response to them (engagement and resistance). The six-item benevolence subscale measures beliefs that voices are helpful, while the six-item malevolence subscale reflects beliefs that voices are persecutory. Higher scores indicate greater perceived malevolence and benevolence. The BAVQ-R was adapted for this study by changing the term 'voices' to 'anorexic voice'. The original BAVQ-R has high test-retest reliability (16), and high internal consistency in previous anorexic voice research (3). **3.3 To justify considering both scales in the subsequent**

analyses, it is necessary to demonstrate that benevolence and malevolence are distinct constructs (rather than simply being opposite ends of a single spectrum). In this study, the correlation between the BAVQ-R malevolence and benevolence scales was negative but small and non-significant (Pearson's  $r = -.268$ ,  $P > .05$ ), confirming that they are sufficiently independent constructs.

### Data analysis

Voice power (VPDS) was the independent variable. Different aspects of the nature of the voice (BAVQ-R) were used as moderators, and measures of eating pathology (EDE-Q scores; BMI) were the dependent variables. The measures were all sufficiently normally distributed to allow for parametric analyses (Kolmogorov-Smirnov tests;  $P > .12$  in all cases). Cronbach's *alpha* was used to determine the internal consistency of the VPDS and the two BAVQ-R scales, as each was modified slightly for this study. Moderator analysis (16) was used to determine the moderating effect of the nature of the anorexic voice (BAVQ-R malevolence and benevolence) on the relationship between the power of the voice (VPDS score) and the measures of eating pathology. This effect was tested by calculating the products of the VPDS and BAVQ-R scales, and using the main effect and the products as independent variables in multiple regressions. **3.4 All variables and moderators were entered simultaneously for each of the two regression analyses.** **3.5 Centred scores were used for all variables.**

## Results

### Descriptive statistics

The sample had a mean body mass index (BMI) of 16.0 ( $SD = 1.45$ , range = 12-17.5). Their mean global EDE-Q score was 3.97 ( $SD = 1.23$ ), which is typical of anorexia nervosa. Considering the anorexic voice measures, their mean VPDS score was 24.3 ( $SD = 4.63$ ), their mean BAVQ-R malevolence score was 9.71 ( $SD = 4.65$ ), and their mean BAVQ-R benevolence score was 4.80 ( $SD = 4.49$ ). The VPDS had an acceptable level of internal consistency (Cronbach's *alpha* = .728), while the *alphas* for the BAVQ-R malevolence and benevolence scales were also acceptable (.787 and .838 respectively).

### Moderator analyses

In the first analysis **3.5** (based on centred scores), BMI was the dependent variable, and the independent variables were voice power (VPDS), **3.5** the BAVQ-R benevolence and malevolence scores, and the moderating effects of the BAVQ-R benevolence and malevolence scales. **3.5** There was a significant overall effect ( $F = 3.79$ ;  $P < .007$ , variance explained = 23.6%). Considering the independent variables, there was no significant effect of benevolence ( $t = 0.77$ , *NS*) on BMI and no effect of the VPDS x Benevolence term ( $t = 0.80$ , *NS*). However, there was a significant impact of voice power on BMI ( $t = 2.44$ ,  $P < .02$ ,  $\beta = 2.44$ ), an effect of malevolence ( $t = 2.96$ ,  $P < .005$ ,  $\beta = 2.21$ ), and a moderating effect of VPDS x Malevolence ( $t = 3.35$ ,  $P < .002$ ,  $\beta = -2.69$ ). **3.8** Thus, higher levels of voice power and malevolence were associated with higher BMI as individual variables. However, the negative  $\beta$  in the VPDS x Malevolence interaction shows that a more malevolent nature to the voice interacted with its power to determine a lower BMI.

In the second analysis **3.5** (again, based on centred scores), global EDE-Q was the dependent variable, and the independent variables were as before. **3.5** There was a significant overall effect ( $F = 10.1$ ;  $P < .001$ , variance explained = 48.7%). Considering the individual independent variables, there was an effect of voice power ( $t = 2.23$ ,  $P < .04$ ,  $\beta = .726$ ), but there were no significant effects of voice malevolence ( $t = 1.38$ , *NS*) or benevolence ( $t = 0.82$ , *NS*). Nor were there significant moderating effects of malevolence ( $t = 1.12$ , *NS*) or benevolence ( $t = 0.28$ , *NS*). **3.8** Thus, the power of the anorexic voice was the only feature that predicted relatively unhealthy eating attitudes.

### **Discussion**

This study has examined the association of the internal anorexic voice with eating pathology in a sample of individuals with anorexia nervosa. **3.8** Negative eating attitudes were related to greater voice power rather than the quality of that voice. In contrast, BMI was lower where the voice had the combined characteristics of being both powerful and malevolent. This different pattern might relate to the ambivalent relationship that many individuals experience with their anorexia nervosa (18).

This preliminary study has a number of important limitations, requiring further research. First, it will be important to establish the proportion of patients who report experiences of an anorexic voice, rather than assuming it to be a universal experience in anorexia nervosa. Second, there was no healthy or clinical control group. Is the anorexic voice found in other eating disorders? Such research should also focus more specifically on the impact of the anorexic voice, rather than considering the more general 'anorexic thoughts/voice' (as was done here), to ensure that the findings reflect the power of the voice rather than eating disorder cognitions. Future research should also establish the voice measures' wider psychometric properties in this group, including their test-retest reliability.

**3.6** It is important to note that the internal consistencies of two of the scales (VPDS and malevolence) were acceptable but not strong (*alpha* greater than .7 but below .8) in this study. As the *alpha* level for a moderator variable is a product of the individual *alpha* levels of the scales used to generate that moderator, the result is that the internal consistency of the moderator term is relatively weak. Therefore, other measures of those constructs might be considered in future research. Further studies should also determine whether these patients (who were in clinical services) describe their voice experiences differently to those who are not in treatment, to test whether the construct of the 'anorexic voice' is one that is partly or completely driven by clinicians' descriptions (19). Finally, it is not known which eating attitudes (shape, weight or eating concern) are most closely related to the anorexic voice. This will be a point for future, larger-scale research.

These findings suggest that eating disorder clinicians should routinely enquire about the anorexic voice, considering its role in case formulation. They also support the relevance of interventions that address the anorexic voice. **1.1** Relevant cognitive behavioural interventions include: re-evaluating voice content via cognitive modification and behavioural experimentation; addressing metacognitive appraisals of the voice (e.g., malevolence); and developing a more de-centred perspective on internal dialogues (9, 20-21). Approaches such as emotion-focused and voice dialogue therapy are also designed to encourage a relational approach to internal voices (6,22). For example, experiential interventions such as

'chair work' are used to explore the functions of the anorexic voice, encourage assertive responding, set boundaries, and develop more affiliative and compassionate internal dialogues. Ultimately, the results of this study indicate that clinicians working with eating disorders might learn from methods developed for other disorders, such as psychosis.

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### **Declaration of interests**

The authors have no competing interests.

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