British Journal of Psychiatry (1992), **161**, 240–243

Alexithymia in Women with Anorexia Nervosa
A Preliminary Investigation

MICHAEL P. BOURKE, GRAEME J. TAYLOR, JAMES D. A. PARKER and R. MICHAEL BAGBY

The prevalence of alexithymia in 48 female anorexia nervosa patients was 77.1% compared with a prevalence of 6.7% in 30 normal female subjects, matched by age and education. Alexithymia correlated negatively with education in the anorexic patient group, but was unrelated to duration of illness, amount of weight loss, and levels of depression and of general psychoneurotic pathology.

Alexithymia refers to a specific disturbance in emotional processing that is manifested clinically by difficulties in identifying and describing feelings, an impoverished imaginative life, and a thought content characterised by a preoccupation with bodily symptoms and/or the details of external events (Nemiah *et al*, 1976). While these characteristics were reported initially among patients with 'classic' psychosomatic diseases, they were subsequently observed also among patients with somatisation disorders, post-traumatic stress disorders, psychoactive-substance use disorders, and masked depressions (Taylor, 1984). Recent research has provided empirical support for the validity of the alexithymia construct as well as evidence of its association with several of these medical and psychiatric disorders (Acklin & Alexander, 1988; Taylor *et al*, 1990*a*,*b*).

Little attempt has been made, however, to investigate alexithymia in patients with eating disorders, despite a general awareness that patients with anorexia nervosa manifest disturbances in the recognition of internal visceral and affective states. Bruch (1985), for instance, observed that in addition to an inaccuracy in identifying sensations of hunger and satiety, patients with anorexia nervosa experience their emotions in a bewildering way and often are unable to describe them. Indeed, Bruch (1985) came to regard interoceptive disturbances, along with other deficits in the ego and the self, as more important than psychoneurotic pathology in the pathogenesis of anorexia nervosa. Studies reporting results on the Interoceptive Awareness subscale of the Eating Disorder Inventory (EDI) have provided empirical evidence that interoceptive disturbances are a fundamental feature of anorexia nervosa (Garner *et al*, 1983; Garner *et al*, 1984; Toner *et al*, 1986). However, only some of the items on this subscale assess directly the patient's level of emotional awareness and no items evaluate the other features of the alexithymia construct, namely, constricted imaginative activity and externally orientated thinking, or what Marty & de M'Uzan (1963) have called *la pensée opératoire*.

The purpose of the present study was to determine the prevalence of alexithymia among female patients with anorexia nervosa compared with a group of healthy women matched by age and education. In addition, the relationships between alexithymia and other clinical and psychopathology variables were examined in the anorexic patients.

Method

The study sample was selected from 50 female patients who were consecutive referrals to the eating disorder unit of either the Bowden House Clinic in Middlesex or the Charter Clinic, Chelsea, in London. While no patients refused to participate in the study, two patients were excluded because they were overweight and had a diagnosis of bulimia nervosa. Thus, the sample consisted of 48 patients who had met the DSM-III-R diagnostic criteria for anorexia nervosa (American Psychiatric Association, 1987) at the time of initial consultation. The group was heterogeneous in that patients were tested at various stages of illness, although none could be considered recovered. The mean duration of illness was 8.5 years (range 6 months to 34 years). Of the total anorexic sample, 30 patients were of the 'restricter' subtype, while the remaining 18 patients reported bulimic episodes at some stage of their illness. The restricter and bulimic subgroups did not differ significantly in age, educational level, or age of onset of the illness. The bulimic subgroup, however, was significantly heavier (expressed as a percentage of expected weight for current height and age at the time of onset of the illness (Crisp, 1980): bulimics, mean = 92.2 (s.d. 9.7)%; restricters, mean = 79.9 (s.d. 11.2)%; $t = 3.87$ (two-tailed) $P < 0.001$). A control group for the study comprised 30 normal female volunteers who were recruited from among hospital employees and were selected to participate when they appeared to match the patient sample for age and education. No volunteer with a current or past history of eating disorder was included in the comparison group. Written informed consent was obtained from all subjects.

Alexithymia was assessed with the Toronto Alexithymia Scale (TAS), a well validated self-report measure of the alexithymia construct (Taylor *et al*, 1988). In addition, all subjects completed the Crown–Crisp Experiential Index (CCEI), a well validated measure of psychoneurotic pathology (Crown & Crisp, 1979). Subjects in the control group completed the Restraint Scale (RS), an instrument for identifying chronic dieters (Polivy *et al*, 1988). Several other questionnaires were also administered for use in another study. Information on age, occupation, educational background, current height and weight, and age of onset of anorexia nervosa was obtained at the time of testing.

Results

As shown in Table 1, the anorexic patient and control groups were adequately matched for age and education, but differed significantly in weight. Of the controls, seven scored in the range of chronic dieters on the Restraint Scale; however, only one chronic dieter was more than 10% below and one more than 10% above her matched population mean weight. The anorexic patients scored significantly higher than the controls on both the TAS (anorexics 79.33 (s.d. 10.87), controls 59.57 (s.d. 9.15), $t = 8.29$, d.f. = 76, $P < 0.001$) and the CCEI (anorexics 52.17 (s.d. 14.57), controls 27.13 (s.d. 8.46), $t = 9.18$, d.f. = 67.6, $P < 0.001$; data were missing for six anorexics; separate variance estimates were used for t test since the CCEI variance scores for the two groups were not equal ($F = 2.96$, $P < 0.003$)). (As recommended by Birtchnell *et al* (1988), only the total score of the CCEI was used as a valid measure of general psychoneurotic pathology.) TAS scores showed non-significant Pearson product–moment correlations with age for both anorexic patients and controls, but there was a significant negative correlation with education in the anorexic group ($r = -0.45$, $P < 0.01$). The CCEI total scores did not correlate significantly with age or level of education in either patient or control groups. Using the TAS cut-off score of 74 and above, 37 anorexic patients (77.1%) scored in the alexithymic range compared to two controls (6.7%). While the mean CCEI total score for the controls corresponded closely with published norms (Crown & Crisp, 1979; Birtchnell *et al*, 1988), 92.9% of the anorexic patients ($n = 42$, because of incomplete questionnaires) had total scores greater than 30, the cut-off point recommended by Burgess *et al* (1987).

Table 1
Demographic characteristics of anorexia nervosa patients and controls

	Anorexic patients ($n = 48$): mean (s.d.)	Controls ($n = 30$): mean (s.d.)	t	d.f.	P
Age: years	24.7 (6.3)	26.8 (4.1)	−1.67	76	0.1
Education: years	14.1 (2.5)[1]	14.6 (2.2)	0.77	72	0.4
Percentage of average weight for height	84.5 (12.1)	98.8 (9.9)	−5.39	76	<0.001

1. $n = 44$ because of missing data.

To examine the relationship of alexithymia with psychoneurotic pathology and clinical variables, we first correlated the anorexic patients' TAS scores with the CCEI total scores. A non-significant Pearson product–moment correlation was obtained ($r = 0.27$, $P > 0.05$). Next, we dichotomised the anorexic patient group in several specific ways and compared TAS scores of the derived subgroups using two-tailed t-tests. There was no significant difference in TAS scores when patients who had been ill for more than two years ($n = 36$) were compared with those who had been ill for two years or less ($n = 12$) ($t = 0.09$, d.f. = 46, $P = 0.93$). Similarly, TAS scores did not differ significantly when patients whose current weight was 20% or more below their expected weight ($n = 20$) were compared with those whose weight was within 20% of expected weight ($n = 28$) ($t = 0.91$, d.f. = 46, $P = 0.37$). Finally, because some investigators have suggested that alexithymia is a defensive response to a depressed mood (Haviland *et al*, 1988*a*), we compared TAS scores of patients scoring greater than or equal to the cut-off score of nine on the depression subscale of the CCEI ($n = 24$) (Burgess *et al*, 1987) with those scoring less than nine ($n = 18$) (again, six subjects were excluded because of incomplete CCEIs); no significant difference was found ($t = -0.71$, d.f. = 40, $P = 0.48$). There was also no significant difference in TAS scores between the restricting anorexic patients ($n = 30$) and the bulimic anorexic patients ($n = 18$) ($t = -1.68$, d.f. = 46, $P = 0.1$).

Discussion

The results of this study confirm the clinical impression that patients with anorexia nervosa manifest a marked inability to identify affects, and a paucity of fantasies and other imaginative activity. The prevalence of 77.1% of alexithymia in this population is considerably higher than previously reported prevalence rates of 50% in newly abstinent male substance abusers (Taylor *et al*, 1990*b*) and 27.5% in a mixed group of patients with rheumatoid arthritis (Fernandez *et al*, 1989), and also higher than a rate of 38.3% that we found in a sample of female general psychiatric out-patients (unpublished data). While previous studies have found that bulimic anorexic patients are more impulsive and more likely to abuse alcohol and drugs than restricting anorexic patients (e.g. Toner *et al*, 1986), our finding of no difference in TAS scores between the two subtypes suggests that alexithymia is a basic feature of their personalities. Indeed, the subtypes probably employ similar as well as different behaviours in their attempt to adapt to difficulties in tolerating and modulating states of unpleasant emotional arousal. As Goodsitt (1983) has suggested, many of the symptoms, such as obsessional food rituals and compulsive bingeing, vomiting, and exercise, may be understood as desperate attempts to relieve a sense of inner

emptiness or to drown out overwhelming states of emotional arousal.

Because of the cross-sectional design of the study, we are unable to determine whether alexithymia is a predisposing personality trait for anorexia nervosa or a consequence of the disorder. However, the finding of no significant difference between the TAS scores of patients with a relatively short duration of illness and those whose illness was of longer duration suggests that alexithymia is not merely an adaptation to, or complication of, a chronic illness. Similarly, the finding of no relationship between TAS scores and the extent of weight loss suggests that alexithymia is unlikely to be an effect of starvation on the personality. Further, there is suggestive evidence from a recent follow-up study that alexithymic characteristics are an integral part of the personality of individuals who develop anorexia nervosa. Casper (1990) found that women who had recovered from restricting anorexia nervosa scored significantly lower than age-matched normal women on the psychological-mindedness subscale of the California Psychological Inventory which we found in a previous study to correlate negatively with the TAS (Bagby *et al*, 1986). The recovered women in Casper's study also displayed greater restraint in emotional expression and initiative than the healthy control subjects. Our finding that anorexic patients who scored high on the depression subscale of the CCEI were no more alexithymic than those who scored low on this subscale also suggests that alexithymia is a personality trait rather than a state-dependent response in this population.

The finding of no relationship between alexithymia and educational level in the normal comparison subjects is consistent with results from an earlier study with normal women (Parker *et al*, 1989). However, the finding of a moderate negative correlation between the TAS and education in the anorexic patients is surprising and difficult to explain, especially as the mean educational level for the anorexic group was virtually identical to that of the control group. Occupational status might also be an influencing variable as only 29.2% of our anorexic patients worked in professional, managerial or administrative jobs compared with 83.3% of the normal comparison subjects. Further research is needed to clarify the relationships between alexithymia and the variables of education, intelligence, and social class.

Although the high level of psychoneurotic pathology in our anorexic patient group is consistent with previous reports of abnormal CCEI profiles of patients with anorexia nervosa (Hsu & Crisp, 1980), our finding of no relationship between TAS scores and CCEI total scores suggests that alexithymia and neuroticism are independent types of psychopathology. This result is consistent with a previous finding from a group of patients with a variety of other diagnoses, in whom TAS scores were unrelated to CCEI total scores (Taylor *et al*, 1988). In addition, the results of our study support Bruch's (1985) view that the psychological disorder in anorexia nervosa is related to underlying deficits in the personality apart from neurotic conflicts. Conflicts over sexuality, aggression, separation–individuation, or other issues may be one source of emotional tension in anorexic patients, but the high prevalence of alexithymia implies a deficit in the ability to tolerate and modulate emotions independent of the factors generating them. Like other alexithymic patients, and as Bruch (1985) has long emphasised, anorexic patients need therapeutic approaches that enhance their ability to identify and regulate affects rather than traditional interpretive psychotherapy (Krystal, 1979).

There are several limitations to this study. Firstly, because the anorexic sample was selected from patients attending two private clinics, the results may not be generalisable to the general population of women with anorexia nervosa. The mean age and mean duration of illness for our patients were somewhat higher than is generally reported in studies of anorexic patients. In addition, there was an unusually high percentage of restricters in our sample. However, both the educational level and mean age of our sample were similar to those of an anorexic sample that we selected from a London public hospital in an earlier study that demonstrated an impaired symbolic function consistent with the concept of alexithymia (Bourke *et al*, 1985).

Another caution in interpreting the results stems from the nature of the control group. Comprised of hospital employees with a high professional achievement, this group is not representative of the general population. This bias in the comparison group was reflected by the finding of a 6.7% prevalence of alexithymia, which is lower than rates of 15–22% than have been found in samples of normal adult women and female college students in Canada and the United States (e.g. Parker *et al*, 1989). Although the TAS has not been validated with a British population, it has consistently shown good reliability and validity with samples from other English-speaking populations (Bagby *et al*, 1990; Haviland *et al*, 1988*b*; Taylor *et al*, 1990*a*).

Finally, while alexithymia was unrelated to the duration of illness, amount of weight loss, and level of depression in our anorexic women, these results were obtained from comparisons of small-sized

subgroups. To enhance their validity, these findings require replication in larger samples.

Despite the above limitations, the results of this preliminary study introduce a concept that appears to have important implications for the aetiology and treatment of anorexia nervosa.

References

ACKLIN, M. W. & ALEXANDER, G. (1988) Alexithymia and somatization. *Journal of Nervous and Mental Disease*, **176**, 343–350.

AMERICAN PSYCHIATRIC ASSOCIATION (1987) *Diagnostic and Statistical Manual of Mental Disorders* (3rd edn, revised) (DSM–III–R). Washington, DC: APA.

BAGBY, R. M., TAYLOR, G. J., PARKER, J. D. A., *et al* (1990) Cross-validation of the factor structure of the Toronto Alexithymia Scale. *Journal of Psychosomatic Research*, **34**, 47–51.

———, ——— & RYAN, D. (1986) Toronto Alexithymia Scale: relationship with personality and psychopathology measures. *Psychotherapy and Psychosomatics*, **45**, 207–215.

BIRTCHNELL, J., EVANS, C. & KENNARD, J. (1988) The total score of the Crown–Crisp Experiential Index: a useful and valid measure of psychoneurotic pathology. *British Journal of Medical Psychology*, **61**, 255–266.

BOURKE, M. P., TAYLOR, G. & CRISP, A. H. (1985) Symbolic functioning in anorexia nervosa. *Journal of Psychiatric Research*, **19**, 273–278.

BRUCH, H. (1985) Four decades of eating disorders. In *Handbook of Psychotherapy for Anorexia Nervosa and Bulimia* (eds D. M. Garner & P. E. Garfinkel), pp. 7–18. New York: Guilford.

BURGESS, P. M., MAZZOCCO, L. & CAMPBELL, I. M. (1987) Discriminant validity of the Crown–Crisp Experiential Index. *British Journal of Medical Psychology*, **60**, 61–69.

CASPER, R. C. (1990) Personality features of women with good outcome from restricting anorexia nervosa. *Psychosomatic Medicine*, **52**, 156–170.

CRISP, A. H. (1980) *Anorexia Nervosa: Let Me Be*. London: Academic Press.

CROWN, S. & CRISP, A. H. (1979) *Manual of the Crown–Crisp Experiential Index*. London: Hodder & Stoughton.

FERNANDEZ, A., SRIRAM, T. G., RAJKUMAR, S., *et al* (1989) Alexithymic characteristics in rheumatoid arthritis: a controlled study. *Psychotherapy and Psychosomatics*, **51**, 45–50.

GARNER, D. M., OLMSTED, M. P., POLIVY, J., *et al* (1984) Comparison between weight-preoccupied women and anorexia nervosa. *Psychosomatic Medicine*, **46**, 255–266.

———, ——— & ——— (1983) Development and validation of a multidimensional eating disorder inventory for anorexia nervosa and bulimia. *International Journal of Eating Disorders*, **2**, 15–34.

———, GARFINKEL, P. E. & O'SHAUGHNESSY, M. (1985) The validity of the distinction between bulimia with and without anorexia nervosa. *American Journal of Psychiatry*, **142**, 581–587.

GOODSITT, A. (1983) Self-regulatory disturbances in eating disorders. *International Journal of Eating Disorders*, **2**, 51–60.

HAVILAND, M. G., SHAW, D. G., CUMMINGS, M. A., *et al* (1988*a*) Alexithymia: subscales and relationship to depression. *Psychotherapy and Psychosomatics*, **50**, 164–170.

———, ———, MACMURRAY, J. P., *et al* (1988*b*) Validation of the Toronto Alexithymia Scale with substance abusers. *Psychotherapy and Psychosomatics*, **50**, 81–87.

HSU, L. K. G. & CRISP, A. H. (1980) The Crown–Crisp Experiential Index (CCEI) profile in anorexia nervosa. *British Journal of Psychiatry*, **136**, 567–573.

KRYSTAL, H. (1979) Alexithymia and psychotherapy. *American Journal of Psychotherapy*, **33**, 17–31.

MARTY, P. & DE M'UZAN, M. (1963) La "pensee operatoire." *Revue Francaise de Psychanalyse*, **27** (suppl.), 1345–1356.

NEMIAH, J. C., FREYBERGER, H. & SIFNEOS, P. E. (1976) Alexithymia: a view of the psychosomatic process. In *Modern Trends in Psychosomatic Medicine, vol. 3* (ed. O. Hill), pp. 430–439. London: Butterworths.

PARKER, J. D. A., TAYLOR, G. J. & BAGBY, R. M. (1989) The alexithymia construct: relationship with sociodemographic variables and intelligence. *Comprehensive Psychiatry*, **30**, 434–441.

POLIVY, J., HERMAN, C. P. & HOWARD, K. I. (1988) Restraint Scale: assessment of dieting. In *Dictionary of Behavioral Assessment Techniques* (eds M. Herson & A. S. Bellack), pp. 377–380. New York: Pergamon.

TAYLOR, G. J. (1984) Alexithymia: concept, measurement, and implications for treatment. *American Journal of Psychiatry*, **141**, 725–732.

———, BAGBY, R. M., RYAN, D. P., *et al* (1988) Criterion validity of the Toronto Alexithymia Scale. *Psychosomatic Medicine*, **50**, 500–509.

———, ———, ———, *et al* (1990*a*) Validation of the alexithymia construct: a measurement-based approach. *Canadian Journal of Psychiatry*, **35**, 290–297.

———, PARKER, J. D. A. & BAGBY, R. M. (1990*b*) A preliminary investigation of alexithymia in men with psychoactive substance dependence. *American Journal of Psychiatry*, **147**, 1228–1230.

TONER, B. B., GARFINKEL, P. E. & GARNER, D. M. (1986) Long-term follow-up of anorexia nervosa. *Psychosomatic Medicine*, **48**, 520–529.

Michael P. Bourke, MA, MB, BCh, MRCPsych, FRCP(C), *Consultant Psychiatrist, Royal Masonic Hospital, London, and Blackrock Clinic, Dublin, and Honorary Research Fellow, St George's Hospital Medical School, London*; *Graeme J. Taylor, MD, MRCPsych, FRCP(C), *Professor of Psychiatry, University of Toronto and Staff Psychiatrist, Mount Sinai Hospital, 600 University Avenue, Toronto, Ontario, Canada, M5G 1X5*; J. D. A. Parker, MA, PhD, *Instructor in Psychology, York University, Ontario*; R. Michael Bagby, MA, PhD, *Assistant Professor of Psychiatry, University of Toronto and Staff Psychologist, Mood Disorders Program, Clarke Institute of Psychiatry, Toronto*

*Correspondence