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Clinical correlates of alexithymia among patients with personality disorder

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Abstract
The literature portrays patients with alexithymia as unusual and difficult to treat; research to date has not clarified the nature of this condition. This study addressed associations between alexithymia and constructs relevant to clinical intervention, namely attachment, quality of object relations, emotion regulation, defense style, personality disorder, and treatment outcome. Fifty-one patients admitted to an intensive group-oriented day treatment program were recruited. Prior to therapy, patients were administered self-report and structured interview measures of predictor and outcome variables; outcome measures were re-administered at completion of the 18-week program. Alexithymia was common in this sample, with four of five patients endorsing moderate or greater problems. Associations with attachment avoidance, primitive object relations, suppression of emotional expression, use of immature defenses, and severity of borderline personality disorder were identified. Alexithymia did not, however, predict outcome. Findings are considered in terms of how the construct informs views of personality disorder.

Keywords: attachment; group psychotherapy; integrative treatment models; personality disorders; psychoanalytic/psychodynamic therapy

Alexithymia is a personality construct implicated in a number of medical and psychiatric conditions and associated with many psychological trait variables. Understood as a trait deficit in the cognitive processing of emotional information, alexithymic individuals have difficulties distinguishing between physical and emotional sensations, a limited capacity to verbally articulate emotions and elaborate upon emotional experience, a reduced ability to engage in imaginative processes, and an "externally oriented" cognitive style (Bagby, Parker, & Taylor, 1994; Helmes, McNeill, Cowan, Holden, & Jackson, 2008; Nemiah, Freyberger, & Sifneos, 1976; Taylor, Bagby, & Parker, 1997). In terms of cognition, these authors highlight how alexithymic patients tend to focus on physical rather than mental experiences and often use action-oriented rather than emotional words to describe frustrating situations (Weinryb, Gustavsson, Åsberg, & Rössel, 1992)—"a preference for the external details of everyday life rather than thought content related to feelings, fantasies, and other aspects of a person's inner experience" (Bagby et al., 1994, p. 31). In psychotherapy, alexithymic patients present a particular challenge as they struggle with the very basis of treatment, i.e., the ability to verbalize and discuss subjective experiences and emotions. Weinryb (1995) asserts that alexithymic psychotherapy patients are demanding to treat due to their difficulty providing associations to the therapeutic dialogue and their use of global and maladaptive defenses. Further, as problems communicating feelings can be an impediment in most relationships, issues with the development of the therapeutic alliance with alexithymic patients have been reported (Tacon, 2001). There is also evidence that the presence of alexithymia is negatively associated with the outcome of individual psychotherapy for major depression (Ogrodniczuk, Piper, & Joyce, 2004).

Early efforts to establish a definitive understanding of alexithymia underscored the need for reliable and valid measurement of the construct. Identification of

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alexithymic characteristics in patients relied on clinical interview until the Toronto Alexithymia Scale (TAS) was developed (Taylor et al., 1997; Taylor, Ryan, & Bagby, 1985). After a process of successively winnowing psychometrically poor items from earlier versions, the current TAS is represented by a 20-item scale (TAS-20) with a three-factor structure. Subscales address difficulties identifying and distinguishing between feelings and bodily sensations, difficulty communicating feelings to others, and a tendency towards an "externally oriented" cognitive style. These dimensions are seen to capture the relative deficiency of more abstract, self-reflective, emotion-oriented thinking in alexithymic individuals. The TAS-20 is considered to be the most efficient tool to rapidly measure alexithymia (Helmes et al., 2008) but is subject to the limitations of any self-report (e.g., social desirability, idiosyncratic understanding of items). A structured interview has been developed to assess the condition in greater depth (Bagby, Taylor, Parker, & Dickens, 2006).

A frequently used method to increase understanding of a construct is to evaluate relationships between measures of the characteristic and measures of phenomena considered conceptually relevant to the construct. Studies of the relationships between alexithymia and other psychological and clinically relevant constructs, such as attachment style, quality of object relations (QOR), emotion regulation, and defense mechanisms, have entered the literature more frequently since development of the TAS-20 (Bagby et al., 1994). Relationships between alexithymia and the symptoms and interpersonal difficulties of personality disorder (PD) have also been of interest to clinical researchers (Nicolò et al., 2011). A selective review of this research will be provided. This will be followed by an overview of the present study, focusing on relationships involving alexithymia for a sample of outpatients receiving intensive partial hospitalization treatment for affective, anxiety and personality disorder.

Attachment Style

Attachment style refers to individual differences in attitudes and assumptions—internal working models—regarding important caregiver relationships. Attachment style reflects how the individual regulates attachment needs (e.g., soothing of distress, support for exploration) and related affects in the context of internalized beliefs regarding the emotional availability and responsivity of attachment figures. Attachment needs are an important driver of emotional and interpersonal development; the quality of caregiver responsiveness during childhood can impact whether, as an adult, the individual engages securely or insecurely in attachment relationships. Individuals with an insecure attachment style follow an internal working model that assumes attachment figures are not reliably available or responsive to expressions of attachment needs. In contrast, individuals with a secure attachment style implicitly assume attachment figures are both available and responsive. Alexithymia has been strongly associated with insecure attachment in clinical populations. As discussed by Bekker, Croon, van Balkon, and Vermee (2008), inverse relationships between alexithymia and positive attachment experiences and "autonomy-connectedness" have been found repeatedly. They note that highly dependent and avoidant attachment styles are both common among alexithymic individuals. Vanheule, Desmet, Meganck, and Bogaerts (2007) evaluated samples of mental health outpatients and undergraduate students and asked whether detached and avoidant interpersonal functioning were related to alexithymia. Patients scored significantly higher on the TAS-20 and measures of problematic interpersonal behavior than the students. Vanheule et al. concluded that affect regulation and engaging in meaningful relationships are challenging for severely alexithymic individuals.

Object Relations

Quality of object relations (QOR) is defined as "a person's enduring tendency to establish certain kinds of relations with others" (Piper et al., 1991, p. 434), based on the perspective that internalized representations of self-other interactions influence the nature and quality of a person's interpersonal relationships. QOR thus refers to a global personality dimension, encompassing a broader range of interpersonal phenomena than the attachment construct. The QOR construct ranges across a continuum from primitive to mature (Azim, Piper, Segal, Nixon, & Duncan, 1991). At the primitive level, the person reacts to perceived separation or loss of the other person, or disapproval or rejection by the other, with intense anxiety and affect; there is also inordinate dependence on the other person, who provides a sense of identity for the individual. At the mature level, the person enjoys equitable relationships characterized by love, tenderness, and concern for objects of both sexes; there is also a capacity to mourn and tolerate unobtainable relationships. While QOR is no doubt influenced by the quality of early attachment relationships, the construct can reflect the idiosyncratic nature of an individual's historical experience and has an influence on a broader range of relationships, not only significant attachments. One group has reported that alexithymic

individuals exhibit object relations from the more primitive end of the spectrum (Weinryb, 1995), characterized by simplistic and unstable internal representations of self-other relationships, based on studies involving patients suffering from ulcerative colitis (Weinryb et al., 1992), but this association in psychiatric populations has not been extensively studied.

Emotion Regulation

Two key processes associated with the processing and management of emotions, cognitive reappraisal and expressive suppression, have been a recent focus of cognition research. Reappraisal addresses the antecedents of an emotional response, e.g., a stimulus situation or stressor, and involves a reformulation of the intended response based on an inventory of available coping resources that are most likely to result in adaptation. Suppression focuses exclusively on the response after it occurs and emphasizes a dampening of emotional intensity, e.g., via distraction, denial, or even dissociation of the affective component. While these strategies can be executed consciously, they are often implemented automatically (Gross & John, 2003). Reappraisal is held to involve less expenditure of mental energy and be more efficient, while suppression is associated with greater mental effort and less effective management of emotion (Richards & Gross, 1999). Individuals who score high on alexithymia appear to utilize suppression more readily; those who score low are more apt to use reappraisal (Walker, O'Connor, & Schaefer, 2011). However, research has been confined to non-clinical samples; it is not clear if the alexithymia-suppression relationship generalizes to psychiatric populations.

Defense Style

Defense style reflects the individual's preference for use of certain defense mechanisms, unconscious psychological processes reflecting strategies which involve the manipulation, distortion or denial of reality to manage anxiety or maintain self-esteem. The various defense mechanisms identified by psychoanalytic theorists, particularly Anna Freud (1937/1966), have been organized into immature, neurotic and mature groupings. Alexithymia is commonly found to be associated with an immature defense style, i.e., the preferential use of more primitive or global defense mechanisms. Wise, Mann, and Epstein (1991) report findings based on use of the 88-item Defense Style Questionnaire (DSQ; Bond, 1995) and an earlier (26-item) version of the TAS. In a sample of 56 mildly depressed outpatients, they found a significant direct relation between alexithymia and an immature defense style emphasizing inhibition, acting out, withdrawal, regression and passive aggression. Wise et al. concluded that alexithymia, while distinct, is conceptually related to defense style. Parker, Taylor, and Bagby (1998) also studied a sample of outpatients, and found that alexithymia was directly associated with the use of maladaptive (immature) defenses, inversely associated with adaptive (mature) defenses, and weakly but significantly related to the use of "image-distorting" (neurotic, e.g., reaction formation) defenses.

Personality Disorder

A number of studies have attempted to explore the relationship between alexithymia and personality disorder (PD) in clinical populations. Traits and diagnoses of various PDs have been established to be prevalent in alexithymic patients but it remains unclear if alexithymia is more likely with certain PDs or if there may be a different "pattern" of alexithymic deficits across Axis II conditions. A study of drug abusers with antisocial personality disorder (APD) found that those with other cluster B PDs in addition to APD showed significantly more pathology in their quality of object relations and exhibited more alexithymic traits than those with comorbid PD from Clusters A or C (Aleman, 2007). Alexithymia was found to be positively associated with schizoid, avoidant, and antisocial traits, but negatively associated with schizotypal traits, in a sample of alcoholic inpatients with PD traits (De Rick & Vanheule, 2007). These latter alexithymia-PD trait relationships were not found in a non-clinical sample matched on age, gender and education. Avoidant PD was predictive of high TAS-20 scores in eating disorder patients (Sexton, Sunday, Hurt, & Halmi, 1998). Nicolò et al. (2011) studied a large outpatient sample and demonstrated that alexithymia was directly associated with global psychopathology and dysfunctional interpersonal relations. Alexithymia was more prevalent in patients diagnosed with avoidant and dependent PD, as well as with the passive-aggressive and depressive PD identified in the DSM-IV (APA, 1994) as categories needing further study.

Berenbaum (1996) studied the relations between childhood abuse, alexithymia, and PD in a sample of psychiatric outpatients. He found that patients who had a history of childhood abuse reported more symptoms of borderline personality disorder (BPD) and were also more likely to be diagnosed with BPD. Childhood abuse was also associated with greater difficulty identifying emotions but not

with deficits in the communication of feelings. High scores on difficulty identifying feelings were related to more severe PD symptoms but not to a therapist-assigned diagnosis of PD. Since all three variables were intercorrelated, Berenbaum (1996) proposed that alexithymia may be a mediator of the relation between childhood abuse and PD. De Panfilis et al. (2008) found that adverse parental practices, namely maternal overprotection, predicted both the presence of PD and alexithymia in outpatients, but this finding was not specific to any PD cluster.

The Current Study

We examined the relationship between alexithymia and attachment, QOR, emotion regulation, defense style, and PD in a psychiatric outpatient sample with a high incidence of both Axis I and Axis II pathology. Patients were involved in an intensive 18-week, group-oriented, partial hospitalization treatment program. Our overarching interest was in whether the data would indicate that alexithymia might serve as an organizing principle for the various deficits and symptom characteristics associated with PD. The current study was largely exploratory but hypotheses were formulated based on previous literature. We expected to identify significant relationships between alexithymia and difficulties with attachment, more problematic and primitive object relations, the use of suppression as a preferred emotion regulation tactic, and the use of immature defenses. In terms of PD, we expected alexithymia to be directly associated with a greater severity of personality pathology and in particular with PD traits associated with the Cluster C ("anxious") categories of avoidant and dependent PD, after Nicolò et al. (2011). Relationships between alexithymia and pre-post treatment outcome were also examined; alexithymia was expected to be associated with poorer program outcomes.

Method

Setting

Patients were recruited from the Psychiatric Day Treatment Program (DTP), a component of the outpatient Psychodynamic Psychiatry Service of the Department of Psychiatry at the University of Alberta Hospital in Edmonton. The DTP is a group- and dynamically-oriented partial hospital treatment program. Patients commonly present with Axis I mood and anxiety disorders and Axis II disorders from Clusters B and C. Approximately 80–100 patients complete the 18-week DTP annually. The program was the focus of a previous large-scale clinical trial (see Piper, Rosie, Joyce, & Azim, 1996) which demonstrated benefits of treatment that were statistically and clinically significant and maintained over an average follow-up period of 8 months post-treatment. The most recent study in the DTP addressed predictors of premature termination (Ogrodniczuk et al., 2008).

Patients

The DTP is known to community referral sources as a service that treats patients with PDs or maladaptive PD traits rather than other serious disorders such as schizophrenia. Roughly one half of referrals are from the affiliated Psychiatric Treatment Clinic and one half from community physicians. Other inclusion criteria consider whether the patient (1) evidences poor interpersonal functioning, (2) is at least 18 years of age, and (3) has a reasonable capacity for group participation. Exclusion criteria address whether the patient (1) is overtly psychotic or in need of inpatient care, (2) reports current substance abuse, (3) faces legal charges, (4) has a history of violent behavior, (5) is engaged with another treatment agency, or (6) has organic brain disorder.

Patients provided written informed consent to participate. The recruited DTP sample comprised 51 admitted patients with a mean age of 41.0 years ($SD = 11.4$, range = 19–66). Thirty-four (66.7%) were female. Eighteen patients (35.3%) were single, 20 (39.2%) were married or living common-law, and 13 (25.5%) reported being separated or divorced. Twenty-one patients (41.2%) reported a high school diploma or less, 25 (49.0%) had a technical school or college diploma, and 5 (9.8%) reported a university degree. The DTP admits patients who have difficulties finding or keeping employment or who are on medical disability associated with their mental problems. Clinically, 47 (92.2%) of the DTP sample reported previous psychiatric treatment, and 16 (31.4%) reported previous hospital admissions. Axis I and Axis II diagnoses at baseline were established using the computer-assisted Structured Clinical Interview for DSM-IV (First, Spitzer, Gibbon, & Williams, 1997; First, Gibbon, Williams, & Spitzer, 1998). Table I provides the SCID diagnostic profile of the sample. The mean number of Axis I diagnoses was 3.1 ($SD = 2.0$, range = 0–8), with major depression, dysthymia, PTSD, social phobia, and OCD being common. The mean number of Axis II diagnoses was 1.0 ($SD = 1.0$, range = 0–4), with the Borderline, Avoidant and Obsessive-Compulsive PD categories frequently assigned.

Table I. SCID Axis I and Axis II diagnoses of DTP sample ($N = 51$)

SCID diagnosis	Number of patients	% of sample
Axis I clinical syndromes		
Presence of Axis I diagnosis	48	94.1
Major Depression	6	11.8
Manic/hypomanic	5	9.8
Dysthymia	7	13.7
Panic Disorder	7	13.7
Agoraphobia	21	41.2
Obsessive-Compulsive Disorder	29	56.9
Post-Traumatic Stress Disorder	16	31.4
Social Phobia	18	35.3
Simple Phobia	18	35.3
Generalized Anxiety Disorder	5	9.8
Alcohol/Drug Abuse Disorder	10	19.6
Eating Disorder	4	7.8
Axis II personality disorders		
Presence of Axis II diagnosis	32	62.7
Schizotypal	1	2.0
Schizoid	1	2.0
Paranoid	4	7.8
Antisocial	1	2.0
Borderline	11	21.6
Histrionic	0	0.0
Narcissistic	3	5.9
Avoidant	19	37.3
Obsessive-Compulsive	10	19.6
Dependent	2	3.9
Depressive	10	19.6
Passive-Aggressive	1	2.0

The Day Treatment Program

The DTP offers an ongoing, structured therapeutic milieu characterized by an emphasis on psychodynamic group psychotherapy. Patients participate for a time-limited period of 18 weeks; an open-ended follow-up group for "graduates" is available. One or two patients are admitted and one or two discharged in a given week. The objective of treatment is to increase the individual's personal, social, and emotional well-being with a view to more effective functioning in the community. No individual therapy is offered.

Medication

It is unusual for patients to receive other forms of mental health care while in the DTP given program demands for daily participation. Most patients are, however, prescribed psychotropic medication. Antidepressants are frequently used given a high incidence of comorbid depressive and/or anxiety disorders. Neuroleptics and SSRIs are also used in the treatment of PDs (e.g., for affective lability associated with BPD). The majority of the sample (73%) were on a therapeutic dose of medication during treatment, usually antidepressants (92%).

Measures

Measures of patient characteristics. Alexithymia was assessed with the 20-item, self-report Toronto Alexithymia Scale (TAS-20; Bagby et al., 1994). The 20 TAS items are rated on a 5-point scale ranging from 1 (strongly disagree) to 5 (strongly agree). In addition to a total score, the TAS-20 yields scores for three factor scales of good reliability and validity: Difficulty Identifying Feelings (DIF), Difficulty Communicating Feelings (DCF), and Externally Oriented Thinking (EOT). Higher scores indicate greater alexithymia. The alexithymic status of an individual can also be categorized based on the use of cut-offs for the TAS-20 total score (Bagby et al., 1994): Scores less than or equal to 51 reflect *non-alexithymia*, scores of 52–60 reflect *possible alexithymia*, and scores of 61 or greater reflect *full alexithymia*.

Interpersonal attachment was assessed with the 36-item Experiences in Close Relationships Scale (ECR; see Brennan, Clark, & Shaver, 1998). Items are rated on a 7-point Likert scale, ranging from 1 (strongly disagree) to 7 (strongly agree). The scale provides scores for two primary attachment dimensions, avoidance and anxiety. Avoidance is associated with distancing and withdrawal, out of concerns regarding the demands or risks of attachment relationships. Anxiety is associated with fears of rejection or abandonment and is reflected by clinging and preoccupation in attachment relationships. Extreme scores on either dimension imply insecure attachment. Internal consistency of the dimensions is high (.94 and .91, respectively) as are test-retest reliabilities (.91, .94).

The patient's quality of object relations (QOR) was evaluated in a 1-hour clinical interview prior to beginning the DTP. QOR is defined as a person's enduring tendency to establish certain types of relationships, based on the influence of internalized representations of self-other interactions. The dimension ranges along an overall dimension from primitive to mature (Azim et al., 1991). The patient's life-long pattern of relationships is explored in reference to five levels of object relations: Primitive, searching, controlling, triangular, and mature. Criteria for each level refer to behavioral manifestations, regulation of affect, regulation of self-esteem, and historical antecedents. The interviewer, an experienced clinician who follows a scoring manual (Piper, Joyce, & McCallum, 1993), distributes 100 points among the five levels and calculates an overall score ranging between 1 and 9. Interrater reliability has been consistently strong across studies [ICC(2,1) coefficients of .70–.85]. QOR has emerged as a predictor of outcome for individual

and group therapy, with more mature patients demonstrating greater gains in interpretive approaches and more primitive patients demonstrating greater gains in supportive approaches (Piper, Azim, McCallum, & Joyce, 1990; Piper, Joyce, McCallum, & Azim, 1998; Piper, McCallum, Joyce, Rosie, & Ogrodniczuk, 2001). QOR was also found to be associated with remaining in and benefiting from the DTP (Piper et al., 1996).

The Emotion Regulation Questionnaire (ERQ; Gross & John, 2003) is a 10-item self-report measure of two commonly used regulatory strategies, one employed prior to the full activation of an emotional response (antecedent-focused *cognitive reappraisal*) and one employed after the emotional response has been generated (response-focused *suppression of expression*). Items are rated on a 7-point Likert scale, ranging from 1 (strongly disagree) to 7 (strongly agree). The ERQ has good internal consistency and has demonstrated strong convergent-discriminant and predictive validity. Suppression is regarded as consuming more mental resources and less efficient than reappraisal (Richards & Gross, 1999, 2000).

The 40-item Defense Style Questionnaire (DSQ; Andrews, Singh, & Bond, 1995; Bond, 1995; Bond et al., 1989) is a self-report assessing derivatives of commonly used defense mechanisms. It is composed of 40 items that the patient rates on a 9-point Likert scale, ranging from 1 (strongly disagree) to 9 (strongly agree). The DSQ produces subscale scores for three clusters of defenses, as follows: *Immature defenses* (projection, distortion, denial, regression, somatization, and repression), *Neurotic defenses* (displacement, isolation, intellectualization, repression, reaction formation) and *Mature defenses* (altruism, sublimation, suppression, anticipation, humor). Andrews et al. report moderate to high internal consistency (Cronbach's alpha ranging from .58 to .80) and high test-retest reliability (ranging from .75 to .85) for the three subscales.

The diagnostic profile of the sample, based on the algorithms of the SCID, has been presented. To examine associations between alexithymia and PD pathology, however, we opted for a dimensional approach. The self-report Wisconsin Personality Inventory (WISPI; Klein et al., 1993) provides continuous dimensional scores for each Axis II condition, reflecting the severity of the patient's symptoms associated with each DSM PD. A 214-item self-report questionnaire, the WISPI was derived from an interpersonal perspective on the DSM. Items are rated on a 10-point Likert scale, ranging from 1 (Never/Not at all) to 10 (Always/Extremely). Scores can be calculated relative to both community and psychiatric norms. Internal consistency and test-retest reliabilities for the WISPI are high (.90 and .88, respectively).

Measures of treatment outcome. Three self-report outcome measures were administered at pre-treatment and again at time of discharge from the DTP. The Outcome Questionnaire-45 (OQ-45; Asay, Lambert, Gregersen, & Goates, 2002; Lambert et al., 1996) is a self-report designed for repeated evaluation of progress over the course of therapy and at or after termination. It assesses three functional domains: Symptom Distress, Interpersonal Relationships, and Social Role Performance. A total score, reflecting global functioning, was also calculated. The Inventory of Interpersonal Problems (IIP; Horowitz, Rosenberg, Baer, Ureño, & Villaseñor, 1988) is a 64-item self-report assessing distress associated with interpersonal inhibition or intrusiveness. A total score, reflecting global interpersonal distress, was calculated. The Quality of Life Inventory (QOLI; Lehman, 1996) is a 17-item self-report assessing 16 areas relevant to overall quality of life (e.g., health, money, friends, neighborhood, community). The importance of and satisfaction with each area is rated. A total weighted QOL score was then calculated.

A total of 32 patients (61.5%) provided complete outcome rating data at both pre- and post-treatment. Pre-post changes, evaluated using repeated measures ANOVA for each of six outcome variables, were significant ($p < .0001$) in each instance. Effect sizes (d) ranged between .86 and 1.40, indicating large effects for patients' involvement in treatment. No relationship was found between the alexithymia variables and the patient's treatment status (i.e., therapeutic discharge, self-discharge (dropout), or administrative discharge ("kick out")). Further, no significant differences on any of the alexithymia variables were identified between those patients who did not provide post-treatment outcome ratings ($n = 18$) and those who did.

Approach to Analysis

Evaluation of the strength of relationships between the alexithymia construct and the other variables of interest was approached as follows. Alexithymia was represented by the four continuous variables (total score, DIF, DCF, and EOT) derived from the TAS-20 administered to DTP patients at the baseline assessment. First, Pearson correlation coefficients were calculated to identify significant simple relationships between the alexithymia variables and the other variables of interest. The correlation analysis involved evaluating the relationships between alexithymia and each domain among the variables of

interest (attachment, QOR, emotion regulation, defense style, and PD). Controversy exists regarding the independence of alexithymia from depressive illness, with some arguing that the former may simply be an epiphenomenon of mood disorder (Sexton et al., 1998; see also Luminet, Bagby, & Taylor, 2001; Lumley, 2000; Parker, Bagby, & Taylor, 1991). Due to this potential confounding, it is recommended that analyses addressing the alexithymia construct control for the effects of depression (Lumley, 2000). In contrast, and based on a non-clinical sample, Berthoz, Consoli, Perez-Diaz, and Jouvent (1999) identified a "tight link between trait anxiety and alexithymia" (p. 372) and less overlap between alexithymia and measures of depression. Clearly, the degree of independence of alexithymia from mood and anxiety symptomatology requires further study. A specific measure of depression was not included in the battery of instruments employed in this study, but other measures of potential confounding variables were available. Relationships between alexithymia and the following set of possible confounding variables were examined in the simple correlation analysis: Patient age and gender, initial distress (reflected by the baseline OQ-45 Symptom Distress score, with a number of the constituent items addressing both depressive and anxiety symptoms), trait anxiety (based on a baseline score from the trait version of the State-Trait Anxiety Inventory; Spielberger, 1983), and the presence of a SCID-diagnosed Axis I mood or anxiety disorder. Significant relationships between alexithymia and any of these variables (constituting another domain for the analysis) would indicate that their influence would need to be controlled in subsequent analyses.

Second, following the correlation analysis, a series of "within-domain" multiple regression analyses were conducted; the variables representing each domain as predictors were those having significant simple relationships with alexithymia in the correlation analysis. The alexithymia variable (total score, factor score) served as the criterion, and a standard level of significance ($p < .05$) was employed. Third, significant individual predictors from each of the within-domain analyses were included in a final multiple regression analysis to identify those predictors most strongly associated with each alexithymia criterion. Significant predictors from among the possible confounding variables identified in the within-domain regression analyses were included in these final analyses as control variables (i.e., simultaneously entered on a first step in the analysis). Only those variables from each domain found to be significant in the within-domain analyses were included on a second step in these final models; a backward stepwise entry method was used for these variables.

Finally, multiple regression was also employed to evaluate the relationship between alexithymia and DTP outcome, based on those patients who provided complete pre- and post-treatment outcome ratings. The criterion variable was drawn from the OQ-45, IIP, or QOLI and expressed as a residual gain score. Identified confounding variables were simultaneously entered on an initial step, with the TAS-20 total score *or* the three TAS-20 factor scores simultaneously entered on a second step as predictors of change over the course of the DTP.

Results

One patient did not complete the TAS-20 at baseline. Of the remaining 51 DTP patients, 10 (19.6%) scored in the non-alexithymic range, 15 (29.4%) scored in the possibly alexithymic range, and 26 (51.0%) scored above the total score cut-off and could be regarded as alexithymic. In effect, four of every five patients in the DTP sample demonstrated some degree of problems with alexithymia, and over half the sample could be seen to be presenting with full alexithymia.

Correlates of Alexithymia

Simple correlations. Table II presents the simple correlations between the four TAS-20 variables (total score, three factor scores) and the indices defining the set of potential predictors. The simple correlations with the potential confounding variables indicated that alexithymia was associated with initial symptom distress and the presence of an anxiety disorder but actually had a considerably stronger relationship with trait anxiety. Simple relationships between the alexithymia variables and the potential predictors in large part confirmed our expectations. Substantial relationships were evident between each of the two insecure attachment dimensions and the alexithymia variables (three of the four TAS-20 variables in each instance). The TAS-20 total score and DIF factor score demonstrated relationships with more primitive QOR. Suppression as an emotion regulation strategy appeared to covary with all factors of alexithymia except EOT. The use of immature defenses demonstrated a strong association with all of the TAS-20 measures. The dimensional measures of PD from the WISPI showed strong relationships with the TAS-20 variables, confirming the expectation that a greater severity of personality pathology was associated with higher scores on the alexithymia variables. By contrast, none of the WISPI scale means for specific Axis II

Table II. Pearson correlations between TAS-20 variables and potential predictors ($N = 51$)

		TAS-20 variables			
		Total	DIF	DCF	EOT
	Mean sum:	61.12	23.25	18.35	19.51
Predictor domain	*SD*:	11.16	6.52	4.00	3.74
Possible control variables					
Age		−.03	−.01	−.12	.05
Gender (1 = F, 2 = M)		.02	−.04	.05	.06
OQ-45 Symptom Distress		.33*	.31*	.30*	.11
Trait Anxiety mean		.49***	.43**	.40**	.27
SCID mood disorder		−.20	−.16	−.18	−.12
SCID anxiety disorder		.30*	.34*	.34*	−.07
Attachment					
ECR Avoidant attachment		.40**	.20	.40**	.40**
ECR Anxious attachment		.51***	.47***	.43**	.25
Quality of Object Relations					
Global QOR score		−.30*	−.28*	−.20	−.19
Emotion Regulation					
ERQ Reappraisal		−.28*	−.16	−.30*	−.24
ERQ Suppression		.44**	.33*	.55***	.13
Defense Style					
DSQ Immature defenses		.63***	.54***	.41**	.50***
DSQ Neurotic defenses		.31*	.40**	.27	−.05
DSQ Mature defenses		−.29*	−.20	−.20	−.29*
Personality Disorder (WISPI)					
Paranoid Scale Mean		.52***	.47***	.35*	.36**
Schizoid SM		.52***	.44***	.34*	.42**
Schizotypal SM		.42**	.45***	.31*	.13
Narcissistic SM		.37**	.27	.23	.38**
Antisocial SM		.27	.24	.18	.19
Borderline SM		.50***	.51***	.42**	.17
Histrionic SM		.17	.15	.13	.13
Avoidant SM		.51***	.48***	.48***	.17
Dependent SM		.34*	.38**	.29*	.06
Obsessive-Compulsive SM		.40**	.36**	.31*	.23

Note. Total = TAS-20 total score; DIF = Difficulty Identifying Feelings; DCF = Difficulty Communicating Feelings; EOF = Externally Oriented Thinking. OQ-45 = Outcome Questionnaire 45; ECR = Experiences in Close Relationships scale; ERQ = Emotion Regulation Questionnaire; DSQ = Defense Style Questionnaire; WISPI = Wisconsin Personality Inventory.
*$p < .05$. **$p < .01$. ***$p < .001$.

conditions demonstrated a uniquely definitive relationship with the TAS-20 variables; the strongest relationships were demonstrated by the Paranoid, Schizoid, Borderline, and Avoidant scale means.

Domain regression analyses. For each TAS-20 score, a series of multiple regression analyses using stepwise backward elimination were conducted. As predictors, the analyses involved the variables associated with each of the six domains (possible confounding variables, attachment, QOR, emotion regulation, defense style, and dimensional indices of PD); potential predictor variables were entered as a block in each analysis. In successive steps, variables subject to elimination (significance of $p > .05$) were removed. In the case of the WISPI variables, a selection criterion was employed: The PD variable was required to have a simple correlation with the TAS-20 score that was significant at $p < .15$ (r values approximating .2 or greater) to be included in the domain regression analysis. Table III presents the beta (β) coefficients for the significant predictors of each TAS-20 score that survived backward elimination in these six analyses. The table also indicates the number of predictors available across domains for the final regression models associated with each TAS-20 variable.

Regarding the potential confounding variables, the measure of trait anxiety emerged as the sole significant predictor for all four TAS-20 variables. (The trait anxiety and OQ-45 Symptom Distress variables were very highly correlated, $r(48) = .76$, $p < .0001$, indicating that, in the domain regression analysis, the trait anxiety variable largely accounted for the prediction offered by the OQ variable.) Given this finding, we decided that the trait anxiety variable represented the most useful index of a possible confound with alexithymia. In contrast, a pre-treat-

Table III. Significant predictors in domain regression analyses for each TAS-20 variable (N = 51)

Predictor domain	TAS-20 variables			
	Total	DIF	DCF	EOT
Possible control variables				
Trait Anxiety mean	.51***	.44**	.41**	.43**
SCID anxiety disorder				−.34*
Attachment				
ECR Avoidant attachment			.28*	.40**
ECR Anxious attachment	.51***	.47***		.33*
Quality of Object Relations				
Global QOR score	−.30*	−.28*		
Emotion Regulation				
ERQ Reappraisal			−.24*	
ERQ Suppression	.44**	.33*	.52***	
Defense Style				
DSQ Immature defenses	.63***	.46***	.41**	.50***
DSQ Neurotic defenses		.25*		
Personality Disorder (WISPI)				
Paranoid Scale Mean	.34*			
Schizoid SM	.34*			.42**
Borderline SM		.51***		
Avoidant SM			.48***	
Number of predictors for final model:	7	7	7	5

Note. See note in Table II for acronyms. Table entries are beta (β) coefficients for the predictor variable in the final step of the regression analysis following backward elimination of non-significant predictors. Significance is based on the associated *t*-test.
*$p < .05$. **$p < .01$. ***$p < .001$.

ment SCID diagnosis of anxiety disorder emerged as inversely predictive of the EOT factor of the TAS-20. Regarding insecure attachment, the anxiety dimension emerged as a significant predictor of three of the four TAS-20 measures; the avoidance dimension emerged as a predictor of DIF and EOT. The ERQ Suppression subscale was predictive of three of the four measures of alexithymia (excluding EOT); the ERQ Reappraisal subscale was an inverse predictor of the TAS-20 DCF factor. The use of immature defenses (DSQ) significantly accounted for all facets of alexithymia. Various dimensional PD scores from the WISPI demonstrated predictive relationships with the TAS-20 indices, with no clear pattern emerging. The WISPI scale mean for Schizoid PD demonstrated a significant prediction for two TAS-20 variables, the total score and EOT. The WISPI scale mean for Borderline PD emerged as a predictor of the DIF factor.

Final regression models. The final regression analyses for each TAS-20 criterion variable involved only those predictors found to be significant in the within-domain analyses. Each analysis involved two steps: The selected confounding variable(s) were entered on the first step of the analysis and all other candidate predictors were entered simultaneously on the second step of the analysis. Relationships between predictors were thus accounted for in the second step; those predictors which emerged as significant provided the strongest characterization of the respective alexithymia criterion. Table IV summarizes the four final regression models.

In all analyses, the selected confounding variable of trait anxiety accounted for a significant proportion of criterion variance when entered on the first step. For the TAS-20 EOT factor, the selected confounding variable represented by a SCID diagnosis of anxiety disorder did not provide for significant additional prediction when trait anxiety was also entered on the same step. In each analysis, following entry of the candidate predictor variables on the second step, the relationship between trait anxiety and alexithymia was no longer significant, suggesting that the relationships involving other predictor variables of interest accounted for the trait anxiety-alexithymia association.

For the TAS-20 total score, the analysis identified the patients' use of suppression (ERQ) and immature defenses (DSQ), as well as the global QOR score (reflecting more primitive object relations), as predictors significantly accounting for criterion variance. The WISPI measures of Paranoid and Schizoid PD severity did not significantly account for additional variation in the TAS-20 total score. For the TAS-20 DIF factor, the analysis identified the global QOR score (inverse), ERQ Suppression, and the severity of Borderline PD symptoms as significant predictors. The analysis for the TAS-20 DCF factor identified ERQ Suppression as the only

Table IV. Final regression models for each TAS-20 variable ($N = 51$)

Dependent variable	Predictor variable and step	ΔR^2	$F\Delta$	β	*t-test*
TAS-20 Total Score	1. Trait Anxiety	.25	15.01***	.50	3.87***
	2. Domain predictor variables:	.34	5.26***		
	ECR Anxious attachment			.00	0.01
	Global QOR score			−.23	−2.05*
	ERQ Suppression			.32	2.91**
	DSQ Immature defenses			.46	2.24*
	WISPI Paranoid SM			.03	0.14
	WISPI Schizoid SM			.08	0.59
TAS-20 Factor 1 (DIF)	1. Trait Anxiety	.18	9.74**	.43	3.12**
	2. Domain predictor variables:	.32	3.99**		
	ECR Anxious attachment			.02	0.09
	Global QOR score			−.26	−2.00*
	ERQ Suppression			.28	2.25*
	DSQ Immature defenses			.25	1.40
	DSQ Neurotic defenses			.14	1.16
	WISPI Borderline SM			.37	2.08*
TAS-20 Factor 2 (DCF)	1. Trait Anxiety	.17	8.96**	.41	2.99**
	2. Domain predictor variables:	.31	3.76**		
	ECR Anxious attachment			.08	0.48
	ECR Avoidant attachment			.14	0.96
	ERQ Reappraisal			−.11	−0.85
	ERQ Suppression			.39	3.14**
	DSQ Immature defenses			.17	0.98
	WISPI Avoidant SM			.20	1.09
TAS-20 Factor 3 (EOT)	1. Trait Anxiety	.16	4.07*	.43	2.76**
	SCID anxiety disorder			−.30	−1.92
	2. Domain predictor variables:	.26	6.07**		
	ECR Avoidant attachment			.33	2.47*
	DSQ Immature defenses			.44	2.45*
	WISPI Schizoid SM			.12	0.73

Note. See note in Table II for acronyms.
*$p < .05$. **$p < .01$. ***$p < .001$.

significant predictor; the severity of Avoidant PD symptoms did not account for additional variance in difficulty communicating feelings. The final index from the TAS-20, the EOT factor, was significantly predicted by two variables, attachment avoidance (from the ECR) and the use of immature defenses (DSQ).

Alexithymia as a Predictor of DTP Outcome

Table V presents correlation coefficients reflecting the relationship between the TAS-20 alexithymia factors and initial, pre-treatment scores on the outcome measures. The coefficients include Pearson correlations, reflecting the simple relationship between alexithymia and initial disturbance, as well as partial correlations which controlled for the shared association with trait anxiety. Alexithymia, as represented by the TAS-20 total score and primarily the DIF and DCF factors, was associated with initial symptom distress on the OQ-45, initial interpersonal distress on the IIP-28, and with poorer initial quality of life on the QOLI. When trait anxiety was partialled, the majority of these simple relationships were rendered nonsignificant. The TAS-20 DCF factor remained significantly associated with initial interpersonal distress, and an inverse relationship between EOT and initial quality of life was also retained.

Analyses addressing relationships between alexithymia and the outcome of the DTP involved the 32 patients who completed both pre- and post-treatment administrations of the outcome measures. The six outcome indices were expressed in the form of residual gain scores, i.e., reflecting post-treatment status on the outcome variable with the influence of the pre-treatment score removed. Each index represented a criterion variable in regression analyses examining the alexithymia dimensions as possible predictors of outcome. On the first step of each analysis, trait anxiety was entered as a control variable. On the second step, either the TAS-20 total score or the triad of TAS-20 factor scores were entered. In only one instance did alexithymia appear to be associated with outcome of the DTP: The TAS-20 total score was directly associated with improvement in quality of life (after controlling for trait anxiety), but this relationship failed to attain the

Table V. Relationships between alexithymia and initial disturbance on the outcome indices ($N = 51$)

	Outcome variable					
	OQ-45				IIP-28	QOLI
TAS-20 variable	Total Score	Symptom Distress	Interpersonal Relations	Social Role Performance	Total Score	Total Score
Total Score						
Pearson	.31*	.33*	.22	.18	.51***	−.39**
Partial	−.18	−.15	−.15	−.12	.25	−.23
Difficulty Identifying Feelings						
Pearson	.27	.31*	.13	.14	.47***	−.28*
Partial	−.14	−.07	−.21	−.09	.25	−.08
Difficulty Communicating Feelings						
Pearson	.30*	.30*	.28*	.13	.49***	−.32*
Partial	−.06	−.05	.04	−.12	.32*	−.16
Externally Oriented Thinking						
Pearson	.14	.11	.12	.14	.13	−.35*
Partial	−.18	−.22	−.08	−.03	−.08	−.30*

Note. TAS-20 = Toronto Alexithymia Scale (20-item); OQ-45 = Outcome Questionnaire 45; IIP-28 = Inventory of Interpersonal Problems (28-item); QOLI = Quality of Life Inventory. Pearson correlations represent the simple relationship between the TAS-20 variable and the measure of initial disturbance. Partial correlations represent this relationship with the shared variance associated with trait anxiety removed.
*$p < .05$. **$p < .01$. ***$p < .001$.

conventional level of significance ($p = .07$). In effect, then, after controlling for trait anxiety, the alexithymia dimensions were *not* found to be associated with variation in residual gain for any measures of DTP outcome. The implication is that alexithymia did *not* interfere with the benefit that patients were able to derive from participation in the intensive group treatment program.

Discussion

The proportion of patients admitted to the DTP who reported problems with alexithymia was considerably higher than was expected; the mean summed total score for the TAS-20 in this sample was equivalent to the cut-off between *possibly alexithymic* and *alexithymic* (Bagby et al., 1994). A lower incidence of alexithymia (see, for example, Nicolò et al., 2011) represented our initial assumption, so this general finding prompted some scepticism. For example, it is not clear how often patients may endorse items on the TAS-20 due to other reasons, such as chronically high levels of anxiety. In other words, as with any self-report instrument, questions can be raised regarding the sensitivity and specificity of the TAS-20. A study examining the concordance of the self-report and a structured clinical interview measure of the construct (Bagby et al., 2006), in a population of patients similar to those in the DTP, would help allay these concerns. Even with qualification, however, the data are clear that alexithymia represents a definite issue for the population served by the DTP.

In terms of possible confounds with alexithymia, the suggestion which emerged from examination of this clinical sample is that alexithymia may covary with the individual patient's characteristic level of anxiety. This finding contrasts with the concern more commonly expressed in the literature that alexithymia may overlap with depressive symptomatology. In this regard, of course, the frequent covariation of anxiety and depressive symptoms can be acknowledged. The need for more research on the overlap between alexithymia and depressive or anxiety symptoms has been mentioned. The DTP population typically demonstrates a high incidence of both mood and anxiety disorders, as well as moderate to severe personality pathology. In this particular sample, a greater incidence of Axis I anxiety disorders was noted. Significant trait anxiety may be implicated in both the alexithymia syndrome and the nature of the pathology presented by patients admitted to the DTP. This association does not imply any causal linkage between these variables. It is an empirical issue whether the presence of alexithymia facilitates the development of anxiety symptoms or, alternatively, whether alexithymia might represent an implicit strategy for the down-regulation of long-standing high levels of anxiety.

Simple relationships with the alexithymia factors measured by the TAS-20 were evident with most of the variables included in this study, and generally aligned with our initial expectations regarding these relationships. Indeed, the variables of interest (including alexithymia) tended to be intercorrelated to some degree. In general terms, alexithymia was more likely to be characteristic of patients with

greater severity of personality pathology (i.e., scale means for many of the WISPI PD variables), more problematic interpersonal relationships (i.e., more primitive QOR, anxious and avoidant attachment), a tendency towards a preferential use of less efficient emotion regulation strategies (i.e., suppression), and the characteristic use of more immature defenses. In terms of the specific Axis II scale means from the WISPI which demonstrated the strongest relationships with alexithymia, the findings aligned fairly well with the literature, i.e., the Paranoid, Schizoid, Borderline, and Avoidant scale means showed the largest associations with the TAS-20 variables. This was not the case for the SCID Axis II diagnoses assigned to patients, which demonstrate a different profile of base rates (very low for Cluster A disorders, very high for BPD and Cluster C disorders). In that simple correlation analysis (not presented), only BPD, Depressive PD, and the number of Axis II diagnoses (an index of severity) demonstrated significant associations with alexithymia. A dimensional approach to the DSM Axis II thus provided appreciably more useful information. At the same time, the findings from this study may not be generalizable beyond clinical populations with a similar profile to patients in the DTP and replications would be worthwhile.

The regression analyses addressing predictors of alexithymia, by domain and then in terms of final models, were oriented to identifying the most salient of the correlates of alexithymia. For overall alexithymia, as represented by the TAS-20 total score, three significant predictors were identified. First, alexithymia would be more likely in patients who tend towards the primitive pole of the spectrum represented by quality of object relations (QOR). Poor QOR tends to be associated with a greater likelihood of PD and more severe PD symptoms; the presence of this variable in the final equation thus implies personality disorder pathology as well. Alexithymia and poor QOR may be associated with similar etiological factors, i.e., childhood trauma or early experiences of inconsistent parenting could be implicated in the development of both. Alternately, a constitutional deficit in emotion regulation might itself be an etiological factor for the problematic development of more mature object relations, i.e., the individual might chronically require others to serve as a means of effective emotion regulation. Two strategies for management of emotional experience also appeared to be critical to the presentation of alexithymia, as represented by the TAS-20 total score. Suppression functions more or less consciously and represents an active avoidance of specific emotional content. A preferred use of immature defenses tends to operate more implicitly, by definition out of awareness; these defenses commonly involve a "splitting off" and transformation (e.g., projection, somatization) of emotional material. The end result of the use of either strategy is the same: The individual has little sense of what is occurring in the realm of their emotions.

As the cardinal component in the factor structure of the TAS-20, the "difficulty identifying feelings (DIF)" factor represents the primary deficit in the presentation of alexithymia. Significant predictors in the final regression model for this criterion included a measure of relational dysfunction (more primitive QOR), an index of problematic emotion regulation (Suppression), and the severity of Borderline PD symptomatology. More primitive QOR and borderline symptoms both imply a greater tendency to employ immature defenses. In many respects, then, the profile of predictors for DIF was quite similar to that for the TAS-20 total score. The distinctive predictor that emerged in this analysis was the severity of Borderline PD symptomatology; most clinicians can recall patients with BPD who demonstrated a marked problem identifying the specific nature of emotional arousal, or who complained non-specifically of intense distress. Certainly, this collection of traits is frequently seen among patients in the DTP and is communicated succinctly by higher scores on the TAS-20 DIF factor. Providing training in emotional awareness and communication to patients with Borderline PD is a central element of a range of therapeutic approaches, e.g., Dialectical Behavior Therapy (Linehan et al., 2006) and the DTP.

When the TAS-20 factor "difficulty communicating feelings (DCF)" served as the criterion variable, the final regression analysis identified the deliberate use of suppression as an associated process. The implication here is that the difficulty expressing emotions may be a direct consequence of the preferred emotion regulation strategy. Finally, the regression analysis associated with the TAS-20 factor "externally oriented thinking (EOT)" identified the use of immature defenses and attachment avoidance as key predictors. Use of immature defenses was thus identified directly, or implied by the presence of another significant predictor, in the analyses for each factor from the TAS-20. This finding thus aligns well with previous reports (Parker et al., 1998). It also suggests that alexithymia reflects a delay or deficit in the development of more refined cognitive-affective processing. The findings for EOT also suggest that this dimension may covary with a somewhat vigilant perspective on interpersonal interaction, a preference for avoiding intimacy to escape potential interactional experiences of hurt and rejection. Again, it is not difficult to speculate on early

prototypical experiences of interpersonal harm as an etiological linkage to these variable relationships.

The associations observed in the present study suggest that alexithymia is clustered with other personality traits that generally reflect a failure to adequately develop purely mental constructs to process and modulate emotion. Instead, the alexithymic individual tends to experience emotion somatically or respond to emotion with behavioral action unmediated by subjective awareness or reflection. In contemporary parlance, alexithymia reflects an incapacity to "mentalize" subjective emotional experience (Fonagy, Gergely, Jurist, & Target, 2002), with the consequence that the individual is left reliant on somatic or action-oriented processing styles. Whether reflective of a constitutional deficit or an unfortunate developmental history, this of course has implications for the establishment of healthy object relations and secure attachment, mature defense style, and stable personality functioning.

The observation that the alexithymia variables had no relationship with the measures of DTP treatment outcome was quite unexpected. These analyses controlled for the influence of trait anxiety, which appears to represent a central focus for the treatment program (high incidence of anxiety disorders and Cluster B and C PDs). The implication of this finding noted in the results section is that problems with alexithymia, characteristic of many patients in the sample, did *not* interfere with attaining benefit from the intensive DTP. This may underscore the value of the duration and comprehensiveness of the treatment. It may also be the case, however, that the *process* of change during the program would vary as a function of the patient's degree of alexithymia. That is, alexithymic patients may be more engaged in an introduction to their emotional life and practising communication about this experience. Over the course of treatment, this nascent capacity to be reflective or engage in mentalization (Fonagy et al., 2002) about their feelings can become better established. Implications for changes in functioning and adaptive living may be profound for these patients, and would be reflected in significant pre- to post-treatment change. In contrast, non-alexithymic patients may demonstrate the capacity to reflect on their emotions, and their therapy may be characterized by experiences of insight, development of more advanced interpersonal skills, and other accomplishments more commonly associated with change in psychotherapy. Equivalent benefits could thus be demonstrated on the outcome indices. The difference between these patient groups would therefore be in terms of a process of *learning* and the specific focus of this process. Examination of the material provided by patients during DTP group sessions, employing ratings on measures such as the Experiencing Scale (Klein, Mathieu, Gendlin, & Kiesler, 1969), might provide evidence for this differentiation of patients as a function of alexithymia.

In sum, this study of a bona fide clinical sample of psychiatric outpatients did suggest a number of important relationships between the multi-faceted construct of alexithymia as measured by the TAS-20 and other important mental processes, aspects of interpersonal style, and PD. Additional study of these relationships in similar samples would provide for replication of these initial and admittedly exploratory findings. The implications of the results, and certain speculations about the meaning of particular findings, represent valuable pathways for future studies. The study was limited in terms of a small sample size, particularly with regard to the assessment of DTP outcome, and this also had consequences given the number of analyses conducted and consequent inflation of Type I error. It was also regrettable that the TAS-20 was not administered again at the time of termination from DTP to evaluate whether significant changes in alexithymia are possible after five months of intensive partial hospitalization treatment (see Ogrodniczuk, Joyce, & Piper, in press). This omission also highlights the cross-sectional nature of the data collected, with most indices evaluated at pre-treatment and the outcome variables assessed on only two occasions. It is also unfortunate that we did not include a pre-treatment measure of depressive symptom severity as a potential confound with alexithymia, as recommended in the literature. In future research, a longitudinal design, tracking changes not only in alexithymia but also in other important variable domains including outcome, would better establish the nature of the linkages between these constructs and how these evolve as a function of engagement in treatment. We look forward to further explorations of the alexithymia construct and how it is implicated in the treatment of our patients.

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