

Alexithymia as a Predictor of Residual Symptoms in Depressed Patients Who Respond to Short-Term Psychotherapy

JOHN S. OGRODNICZUK, Ph.D.,¹ WILLIAM E. PIPER, Ph.D.,¹
ANTHONY S. JOYCE, Ph.D.²

Residual symptoms are increasingly becoming recognized as an important problem in the treatment of major depression. It is unclear which individuals are more likely to suffer from residual symptoms following treatment. This study investigated the role of alexithymia in the prediction of residual symptoms following treatment with psychotherapy.

The study utilized data from 33 outpatients with major depression who were positive responders to psychotherapy. Alexithymia was assessed prior to treatment using the 20-item Toronto Alexithymia Scale. Depressive and anxious symptomatology were assessed using the Beck Depression Inventory and the Spielberger State-Trait Anxiety Inventory, respectively.

Alexithymia factor 1 (difficulty identifying feelings) was predictive of the severity of residual symptoms, over and above the effect of initial levels of depression and anxiety, form of psychotherapy, and use of antidepressant medication.

The findings suggest that difficulty identifying feelings may constrain one's ability to effectively utilize psychotherapy, thereby contributing to the persistence of residual symptoms.

There is increasing recognition that residual symptoms of depression represent a clinically important problem (1). Residual symptoms of depression refer to symptoms that persist despite apparent response or remission. Their high prevalence has been documented in a number of studies. For example, Nierenberg and colleagues (2) found that more than 80% of patients who appeared to fully respond (post-therapy Hamilton Rating Scale for Depression score ≤ 7) to fluoxetine treatment continued to experience some depressive symptoms.

¹ Department of Psychiatry, University of British Columbia, Vancouver, BC, Canada; ² Department of Psychiatry, University of Alberta, Edmonton, Alberta, Canada. **Mailing address:** Department of Psychiatry, University of British Columbia, 2250 Wesbrook Mall, Vancouver, BC, V6T 1W6 Canada.

The presence of residual symptoms following treatment appears to substantially increase the risk of relapse. A ten-year follow-up study of patients treated in the NIMH Collaborative Depression Study found that patients who had residual symptoms relapsed three times faster than patients who were asymptomatic (3). Residual symptoms have been associated with more severe and chronic future courses of depression (4). They have also been found to be associated with greater health service use, need for public assistance, vocational difficulties, physical limitations, irritability, and household strain (5).

Attempts to identify individual characteristics predictive of residual symptoms have been largely unsuccessful. A recent review by Tranter and colleagues (6) indicated that chronic medical burden, sociodemographic characteristics, family or personal psychiatric history, comorbid conditions, or type of treatment received (i.e., pharmacotherapy, psychotherapy, or both) have not successfully predicted residual symptoms. Paykel and colleagues (7) found that patients with residual symptoms had higher initial levels of anxiety and depression. However, this finding has not been replicated. The inability to identify significant predictors of residual symptoms may be partly explained by the fact that investigators have typically examined variables of convenience rather than variables that can be conceptually linked to the presence of residual symptoms following treatment.

Alexithymia is a patient characteristic that may have a conceptual link. In general, it refers to deficits in the cognitive processing and regulation of emotions (8). However, a number of different descriptions of alexithymia have been offered in the literature. For example, alexithymia has been characterized as an impaired capacity to differentiate and communicate one's emotions and a propensity to engage in externally-oriented thinking (i.e., focus on concrete details of external events). Individuals with alexithymia have also been characterized as using a communication style in which symbolic thinking is reduced and inner feelings and wishes are not revealed. In addition, individuals with alexithymia have been described as having an impoverished fantasy life and an impaired capacity for empathy. Individuals with high levels of alexithymia are usually aware of their emotional arousal; however, they have difficulty differentiating emotions and verbalizing them. They also have difficulty discriminating between emotions and physical sensations. Alexithymic individuals often express their emotional distress somatically, e.g., headache.

In an effort to reduce the number of descriptions of alexithymia that have been suggested in the literature, Taylor and colleagues (9) performed

a factor analysis of a large number of items that have been used to describe the construct. They found that three core features (factors) could be used to describe alexithymia: 1) difficulty identifying feelings, 2) difficulty describing feelings, and 3) externally oriented thinking.

Some studies have reported a strong association between alexithymia and depression (10). This relationship has caused some debate as to whether alexithymia and depression represent distinct or overlapping constructs. Some studies support an overlapping association, suggesting that alexithymia is a coping or defense mechanism to painful affect (11). Other studies have supported the view that they are distinct constructs, indicating that alexithymia is a stable personality trait that predisposes people to suffer from depressive or other mental disorders (12). Recent reviews of the literature lend strong support to the view that alexithymia and depression are relatively distinct entities (8, 13).

There has been some suggestion that alexithymia increases one's susceptibility to residual symptoms of depression (14). Lumley (15) has argued that alexithymia predisposes one to a persistent, negative emotional state. Whereas non-alexithymic individuals have the capacity to regulate and resolve negative emotions stemming from stressful or conflicting events, alexithymic people do not. The negative affect remains unmodulated, yielding a persistent, yet undifferentiated dysphoria. Similarly, Larsen and colleagues (13) explain that alexithymic individuals are prone to experience persistent emotional problems. Due to the deficiency of cognitive processing in response to emotional arousal, these individuals have difficulty understanding the emotions they experience, leading to further affective turmoil. As Lane and Schwartz (16) explain, the undifferentiated nature of emotional experience is self-perpetuating to the extent that alexithymic individuals are unable to reflect on and generate symbolic representations of their experience. These hypotheses are supported by the work of Linville (17) who has shown that individuals who manifest less cognitive complexity in their descriptions of themselves are more likely to experience emotional disequilibrium than are those individuals who manifest higher levels of cognitive complexity.

Despite reasonable arguments and indirect evidence suggesting an association between alexithymia and residual symptoms, no study that we are aware of has directly examined this issue. The purpose of the present study was to determine whether alexithymia was associated with residual symptoms in depressed psychiatric outpatients who were positive responders to short-term psychotherapy.

METHOD

SUBJECTS

The present study used data from a randomized controlled trial of two manualized forms (interpretive, supportive) of short-term individual psychotherapy (18). Patients were referred from a large, psychiatric outpatient clinic of a university hospital. Written informed consent was obtained from all participants. Exclusion criteria for the trial included psychosis, substance abuse as a primary diagnosis, suicidal risk, organic mental disorder, and antisocial personality disorder. Patients who participated in the trial presented us with primary problems involving depression, anxiety, interpersonal conflict, and self-esteem. The sample for the present study included only those patients from the trial who suffered from non-bipolar major depression. Findings from the trial indicated that both forms of therapy resulted in improvements in depression that satisfied criteria for statistical significance, clinical significance, and reliable change. There were no statistically significant differences between the two forms of therapy with regard to outcome.

Thirty-three patients met inclusion criteria for the present study. Criteria included an initial DSM-III-R (19) diagnosis of a major depressive episode and a Beck Depression Inventory (BDI; 20) score of 15 or higher. In addition, only patients who were positive responders to treatment were included in the present study. A *positive response* to treatment was defined by two criteria: 1) a 50% reduction in BDI score, and 2) a post-treatment BDI score of eight or less. The first criterion is frequently used to define response. The second criterion corresponds with the definition of an "asymptomatic" state as suggested by Frank et al. (21) and is consistent with scores for a normal population (20). The sample of 33 positive responders represents 55% of those patients with major depression who were treated in the clinical trial. *Residual symptoms*, assessed at post-treatment, were defined as BDI scores of one to eight. A score of 0 indicated that the patient was asymptomatic. This is consistent with previous definitions of residual symptoms using the BDI (22).

ASSESSMENTS

After receiving an initial psychiatric evaluation, patients underwent a detailed baseline research assessment. The computer-assisted Structured Clinical Interview for DSM-III-R (23) was used to assess Axis I diagnoses, which were validated by independent clinical diagnoses assigned jointly by the intake assessor and a staff psychiatrist, both of whom saw the patient upon first presentation to the clinic. Axis II diagnoses were determined by

the computer-administered SCID-II Patient Questionnaire and AutoSCID II (24). Depressive symptomatology was assessed by the Beck Depression Inventory (20). The BDI was also used at post-therapy to assess depressive symptoms following treatment. Symptoms of anxiety were assessed by the State subscale of the Spielberger State-Trait Anxiety Inventory (STAI; 25).

Alexithymia was assessed by the 20-item Toronto Alexithymia Scale (TAS-20; 26). The TAS-20 provides scores for three factors that reflect distinct facets of alexithymia that have been empirically validated: F1 = difficulty identifying feelings, F2 = difficulty describing feelings, and F3 = externally oriented thinking. Each item on the TAS-20 is rated on a 5-point Likert scale.

TREATMENT

After the baseline assessment, patients were randomly assigned to individual psychotherapy with either interpretive therapy or supportive therapy. Psychotherapy was scheduled for 20, weekly 50-minute sessions at a regular prearranged time. In interpretive therapy, the primary objective is to enhance the patient's insight about repetitive conflicts (intrapsychic and interpersonal) and trauma that serve to underlie and sustain the patient's problems. The therapist makes use of the here-and-now relationship, and attends to linkages with past significant relationships. Relative to supportive therapy, the interpretive therapy situation is more demanding, depriving, and anxiety arousing. Overall, the therapist is moderately active, interpretive, and transference-focused.

In supportive therapy, the primary objective is to improve the patient's immediate adaptation to his or her life situation. Relative to interpretive therapy, the supportive therapy climate is more relaxing, gratifying, and comforting. The therapist attempts to minimize anxiety and regression in the session, focuses on external circumstances related to the patient's difficulties, and provides praise and immediate gratification. Overall, the therapist is active, non-interpretive, and other-focused, i.e., addresses current external relationships.

Therapists followed a two-part technical manual that described, illustrated, and compared the technical emphases associated with the two forms of therapy. Therapist compliance with the manual guidelines was monitored by external observers. The therapies were well differentiated, as intended.

Management of medication was conducted by an independent project psychiatrist who met with each patient before, during, and after psychotherapy. Seventeen (52%) of the 33 patients in the present study received

a therapeutic dosage of antidepressant medication (tricyclic or selective serotonin reuptake inhibitor) during their course of psychotherapy. A therapeutic dosage was defined as equivalent to 150 mg/day of imipramine for a minimum of six weeks. Medication use was balanced between the two forms of psychotherapy ($N = 8$, interpretive; $N = 9$, supportive).

STATISTICAL ANALYSES

Descriptive statistics for the sample are presented as means and standard deviations for continuous variables, and as proportions for categorical variables. First, comparisons between patients with residual symptoms to those without on demographic, diagnostic, and symptom severity variables were performed with independent samples (*t*-tests) for continuous variables and chi-square tests (likelihood ratio) for categorical variables. Second, Pearson correlations were used to examine the relationship between baseline depressive symptom severity (BDI score) and alexithymia (TAS-20 subscale scores). Third, a hierarchical regression analysis determined whether alexithymia (treated as a dimensional variable) was predictive of residual symptoms at post-therapy. The regression analysis involved two steps. In the first step, form of psychotherapy (interpretive v. supportive), antidepressant medication use (yes v. no), and baseline scores for depression and anxiety were entered. The two latter variables were included in the model because previous research (7) has suggested that initial levels of depression and anxiety may be associated with residual symptoms following treatment. We were interested in the effect of alexithymia on residual symptoms over and above the effects of form of psychotherapy, use of antidepressant medication, and initial levels of depression and anxiety. In the second step of the regression analysis, the three subscales of the TAS-20 were entered. A forward stepwise method of variable selection was used at this step. The dependent variable for the regression analysis was the post-therapy BDI score. All statistical tests were 2-tailed with an alpha level of .05.

RESULTS

SAMPLE

A total of 33 patients were positive responders to short-term psychotherapy. The average post-therapy BDI score for responders was 4.3 ($SD = 3.0$). Fifteen patients were from the interpretive therapy condition and 18 were from the supportive therapy condition. Their mean age was 35.0 ($SD = 9.9$) years. Fifty-two percent of the patients were female. All but one patient were Caucasian. Seventy-three percent of the patients were

educated beyond high school and 67% were employed. Thirty-nine percent of the patients were single, 36% were living with a partner, and 24% were separated or divorced. Eight patients (24%) were given a diagnosis of a comorbid Axis I disorder. Four patients (12%) were diagnosed with a secondary substance abuse disorder, two (6%) with dysthymia, one (3%) with panic disorder, and one (3%) with bulimia. Twenty-four patients (73%) were also given a diagnosis of at least one comorbid Axis II disorder. The most frequently diagnosed disorders were: avoidant, 14 (42%); obsessive-compulsive, 12 (36%); paranoid, 9 (27%); and borderline, 7 (21%). The mean baseline depression score on the BDI was 21.9 (7.3). The mean baseline anxiety score on the State subscale of the STAI was 57.6 (6.7).

Of the 33 responders, 27 (82%) had residual depressive symptoms. Patients with residual symptoms did not differ from patients who did not have residual symptoms on any of the variables described above.

ALEXITHYMIA AND BASELINE DEPRESSION

Correlations between baseline depression and each of the alexithymia factors were small and not statistically significant: Factor 1, $r(32) = .22$, $p < .23$; Factor 2, $r(32) = .28$, $p < .13$; and Factor 3, $r(32) = -.05$, $p < .77$. The findings suggested that there is little association between level of alexithymia and severity of baseline depressive symptoms.

ALEXITHYMIA AND RESIDUAL SYMPTOMS

The covariates that were included in the first step of the regression analysis accounted for a significant amount of variation in the post-therapy residual symptom scores, $R^2 = .35$, $F(4,27) = 3.6$, $p < .02$. Among the covariates entered in the first step of the analysis, only form of psychotherapy was significantly associated with residual symptoms, $t(31) = 2.99$, $p < .01$. Patients who received supportive therapy had significantly lower residual symptom scores ($M = 3.1$, $SD = 3.1$) than those who received interpretive therapy ($M = 5.7$, $SD = 2.1$).

In the second step of the analysis, only alexithymia Factor 1 (difficulty identifying feelings) was found to be significantly associated with residual symptom severity [$F(1,26) = 6.33$, $p < .02$], over and above the effects of form of psychotherapy, use of antidepressant medication, and initial depression and anxiety. It accounted for an additional 13% of the variance in residual symptoms. The finding indicated that patients who had greater difficulty identifying feelings were likely to have more severe residual symptoms at post-therapy. Neither alexithymia Factor 2 nor alexithymia

Factor 3 significantly contributed to the prediction of residual symptom severity.

DISCUSSION

Findings from the current study suggest that alexithymia may play an important role in the persistence of residual symptoms. Difficulty identifying feelings (a key feature of alexithymia) was predictive of residual symptom severity, over and above the effect of initial depression and anxiety, antidepressant medication use, and form of psychotherapy received.

Our findings also provide evidence supporting the argument that alexithymia and depression are distinct constructs. Correlations between baseline depression symptom scores and alexithymia factor scores were small and not statistically significant. Further, we found that even after accounting for the effects of initial levels of depression and anxiety, form of psychotherapy received, and use of antidepressant medication, alexithymia (namely, difficulty identifying feelings) still made a significant contribution to the prediction of residual symptom scores. These findings are thus consistent with the notion that alexithymia is a personality trait that may predispose a patient to experience residual symptoms (14).

The emergence of Factor 1 (difficulty identifying feelings) as having the strongest association with residual symptoms is consistent with suggestions in the literature that this factor best characterizes the alexithymia construct (13). In fact, some have argued that the other factors may even hinder the accurate measurement of alexithymia (27). These authors have emphasized that alexithymia is not simply a problem in the use of words denoting emotion. Instead, alexithymia is characterized by a more fundamental impairment in the capacity for encoding and transforming emotional information (28). It is believed that this impairment is best represented by the factor assessing difficulty identifying feelings. This is supported by the findings of Lane and colleagues (29) who found that difficulty identifying feelings was associated with considerable impairment in verbal and non-verbal recognition of emotion stimuli.

One possible explanation for the association between difficulty identifying feelings and residual symptoms in the current study is that an inability to identify affective experiences would impair the alexithymic patient's capacity to effectively communicate problems to the therapist (30). An alexithymic patient is aware of emotional distress but cannot clearly define the nature of the distress. The therapist would be confronted with vague and ever shifting complaints and would often be at a loss for

developing an appropriate treatment plan. Furthermore, just as the inability to identify feelings impairs the patient's capacity to process internal emotional information, it also impairs the patient's understanding of the therapist's interventions regarding emotions.

Considering the importance of working with emotional experiences in psychotherapy and the difficulty that alexithymic patients have processing emotional information, treatment would likely be only partially successful. The core difficulty underlying the patient's depression may not be adequately addressed or resolved and would likely continue to burden the patient long after treatment has ended. Residual symptoms may thus reflect the persistence of the depressive illness in a milder form (7).

The therapist's repeated labeling of individual emotions may help the patient become aware of a greater range of emotional experiences, and subsequently bring about more effective communication (30). The therapist can facilitate this process by offering verbal representations that correspond to the patient's current experience as well as by providing new labels for past experiences and identifying previously unrecognized triggers of emotion. It is believed that the expansion of the patient's cognitive schema through symbolic representation reduces the patient's vulnerability to future distress and disorganization because future experiences will be more differentiated, attenuated, and familiar (31). By maintaining a focus on the identification and differentiation of feelings early in treatment, the therapist may then be able to devise a clearer treatment plan to address the patient's specific problems, thus minimizing the likelihood of experiencing residual symptoms. Follow-up sessions will also be important to schedule for patients with residual symptoms considering their strong association with relapse (3). Psychotherapeutic treatments that have been designed specifically for treating residual symptoms have been found to be more effective than continued medication management (32).

The study also found a significant treatment difference regarding severity of residual symptoms. Residual symptoms were less severe among patients treated with supportive therapy compared to those treated with interpretive therapy. An explanation for this difference is not immediately clear. It is possible that, given its emphasis on problem solving and guidance regarding current difficulties, supportive therapy was more suitable for attending to the specific symptomatic concerns of patients. Interpretive therapy, in contrast, focuses not on specific problems or symptoms, but on pervasive intrapsychic and interpersonal conflicts that affect many facets of the patient's life. Resolution of depressive symptoms may occur more gradually in patients who receive interpretive therapy.

Several limitations of the present study should be acknowledged. Primary among these was the size of the sample, particularly the number of patients without residual symptoms. Although the effect for alexithymia was large enough to be detected in this sample, accounting for 13% of the variance in residual symptoms, it may represent a spurious finding. Replication in a larger sample is required before firm conclusions regarding the relationship between alexithymia and residual symptoms can be made. Generalization is limited by the fact that the majority of the patients and therapists were Caucasian. As well, it is not known whether these findings apply to responders to any treatment for depression or only to those who respond to short-term psychotherapy. Post-treatment diagnostic information was not available and thus not considered in our definition of positive response to treatment. Although it is unlikely that patients scoring eight or less on the BDI would still meet DSM criteria for major depression, the possibility cannot be ruled out. Finally, the retrospective nature of this study limits interpretations of causality. It is possible that a third, yet undefined, variable may predispose some depressed individuals to both high levels of alexithymia and residual symptoms after treatment. A carefully designed prospective study would be necessary to more appropriately address the issue of causality.

Residual symptoms are common phenomena among patients treated for major depression. Clarity regarding predisposing factors is necessary in order to improve treatment and minimize residual symptoms. We believe that our findings, if replicated, may have considerable clinical utility. Alexithymia is a transtheoretical characterization of emotional awareness that is potentially applicable to many different approaches to the treatment of depression. We hope that our preliminary work to identify predictors of residual symptoms will stimulate further research along similar lines by others.

Acknowledgments: Supported by Grant 6609-1765-60A from the National Health Research and Development Program, Health and Welfare Canada, Ottawa, Canada.

REFERENCES

1. Fava, G. A. (1999). Subclinical symptoms in mood disorders: pathophysiological and therapeutic implications. *Psychological Medicine*, 29, 47–61.
2. Nierenberg, A. A., Keefe, B. R., Leslie, V. C., et al. (1999). Residual symptoms in depressed patients who respond acutely to Fluoxetine. *Journal of Clinical Psychiatry*, 60, 221–225.
3. Judd, L. J., Akiskal, H. S., Maser, J. D., et al. (1998). Major depressive disorder: a prospective study of residual subthreshold depressive symptoms as predictor of rapid relapse. *Journal of Affective Disorders*, 50, 97–108.
4. Judd, L. J., Schettler, P. J., Akiskal, H. S. (2002). The prevalence, clinical relevance, and public

- health significance of subthreshold depressions. *Psychiatric Clinics of North America*, 25, 685–698.
5. Judd, L. J., Akiskal, H. S., Paulus, M. P. (1997). The role and clinical significance of subsyndromal depressive symptoms (SSD) in unipolar major depressive disorder. *Journal of Affective Disorders*, 45, 5–18.
 6. Tranter, R., O'Donovan, C., Chandarana, P., Kennedy, S. (2002). Prevalence and outcome of partial remission in depression. *Journal of Psychiatry and Neuroscience*, 27, 241–247.
 7. Paykel, E. S. (1998). Remission and residual symptomatology in major depression. *Psychopathology*, 31, 5–14.
 8. Taylor, G. J. (2000). Recent developments in alexithymia theory and research. *Canadian Journal of Psychiatry*, 45, 134–142.
 9. Taylor, G. J., Bagby, R. M., Parker, J. D. A. (1997). *Disorders of affect regulation*. Cambridge: Cambridge University Press.
 10. Hintikka, J., Honkalampi, K., Lehtonen, J., Viinamäki, H. (2001). Are alexithymia and depression distinct or overlapping constructs?: a study in a general population. *Comprehensive Psychiatry*, 42, 234–239.
 11. Honkalampi, K., Hintikka, J., Tanskanen, A., Lehtonen, J., Viinamäki, H. (2000). Depression is strongly associated with alexithymia in the general population. *Journal of Psychosomatic Research*, 48, 99–104.
 12. Luminet, O., Bagby, R. M., Taylor, G. J. (2001). An evaluation of the absolute and relative stability of alexithymia in patients with major depression. *Psychotherapy and Psychosomatics*, 70, 254–260.
 13. Larsen, J. K., Brand, N., Bermond, B., Hijam, R. (2003). Cognitive and emotional characteristics of alexithymia: a review of neurobiological studies. *Journal of Psychosomatic Research*, 54, 533–541.
 14. Tannock, C., Katona, C. (1995). Minor depression in the aged: concepts, prevalence and optimal management. *Drugs & Aging*, 6, 278–292.
 15. Lumley, M. A. (2000). Alexithymia and negative emotional conditions. *Journal of Psychosomatic Research*, 49, 51–54.
 16. Lane, R. D., Schwartz, G. E. (1987). Levels of emotional awareness: a cognitive-developmental theory and its application to psychopathology. *American Journal of Psychiatry*, 144, 133–143.
 17. Linville, P. (1985). Self-complexity and affective extremity: don't put all your eggs in one cognitive basket. *Social Cognition*, 3, 94–120.
 18. Piper, W. E., Joyce, A. S., McCallum, M., Azim, H. F. (1998). Interpretive and supportive forms of psychotherapy and patient personality variables. *Journal of Consulting and Clinical Psychology*, 66, 558–567.
 19. American Psychiatric Association (1987). *Diagnostic and Statistical Manual of Mental Disorders*, (3rd ed., Revised). Washington, DC: American Psychiatric Association.
 20. Beck, A. T., Steer, R. A. (1987). *Beck Depression Inventory manual*. New York: Harcourt Brace Jovanovich.
 21. Frank, E., Prien, R. F., Jarrett, R. B., et al. (1991). Conceptualization and rationale for consensus definitions of terms in major depressive disorder: Remission, recovery, relapse, and recurrence. *Archives of General Psychiatry*, 48, 851–855.
 22. Teasdale, J. D., Scott, J., Moore, R. G., et al. (2001). How does cognitive therapy prevent relapse in residual depression? Evidence from a controlled trial. *Journal of Consulting and Clinical Psychology*, 69, 347–357.
 23. First, M. B., Gibbon, M., Williams, J. B. W., Spitzer, R. L. (1990). *Mini-SCID*. Toronto, Ontario, Canada: Multi-Health Systems.
 24. First, M. B., Gibbon, M., Williams, J. B. W., Spitzer, R. L. (1991). *SCID-II PQ and AutoSCID II*. Toronto, Ontario, Canada: Multi-Health Systems.
 25. Spielberger, C. D. (1983). *Manual for the State-Trait Anxiety Inventory*. Palo Alto, CA: Consulting Psychologists Press.
 26. Bagby, R. M., Parker, J. D. A., Taylor, G. J. (1994). The twenty-item Toronto Alexithymia Scale: I. Item selection and cross validation of the factor structure. *Journal of Psychosomatic Research*, 38, 23–32.
 27. Haviland, M. G., Shaw, D. G., Cummings, M. A., MacMurray, J. P. (1988). Alexithymia: subscales and relationship to depression. *Psychotherapy and Psychosomatics*, 50, 164–170.

28. Lane, R. D., Ahern, G. L., Schwartz, G. E., Kaszniak, A. W. (1997). Is alexithymia the emotional equivalent of blindsight? *Biological Psychiatry*, 42, 834–844.
29. Lane, R. D., Lee, S., Reidel, R., et al. (1996). Impaired verbal and nonverbal emotion recognition in alexithymia. *Psychosomatic Medicine*, 58, 203–210.
30. Swiller, H. I. (1988). Alexithymia: treatment utilizing combined individual and group psychotherapy. *International Journal of Group Psychotherapy*, 38, 47–61.
31. Lane, R. D., Schwartz, G. E. (1992). Levels of emotional awareness: implications for psychotherapeutic integration. *Journal of Psychotherapy Integration*, 2, 1–18.
32. Fava, G. A., Rafanelli, C., Grandi, S., Canestrari, R., Morphy, M. A. (1998). Six-year outcome for cognitive behavioral treatment of residual symptoms in major depression. *American Journal of Psychiatry*, 155, 1443–1445.