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Predictors of treatment change and engagement in cognitive-behavioral group therapy for depression.

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Abstract

This study examined predictors of treatment response in 48 individuals who presented for participation in a 10-session cognitive-behavioural group therapy (CBGT) program for depression. The majority of participants carried a diagnosis of major depression and all were concurrently on a least one antidepressant medication. The therapeutic approach involved an integration of two empirically-supported therapies – Beck's cognitive therapy (Beck, Rush, Shaw, & Emery, 1979) and Lewinsohn's Coping with Depression course (Lewinsohn, Antonuccio, Brekenridge, & Teri, 1984). Participants completed the Burns Depression Checklist, the Dysfunctional Attitudes Scale (DAS), and the Burns Hopelessness Scale, a 5-item questionnaire which assesses the degree of optimism/pessimism an individual has regarding mood and symptom control. No significant differences were found on pre-treatment dysfunctional attitudes or depressive symptomatology between individuals who dropped out of treatment (n=9) and treatment completers (n=39). However, pre-treatment hopelessness scores were significantly higher in dropouts than in individuals who completed treatment. Increased pessimism about symptom control was also related to fewer reductions in DAS scores throughout treatment among completers and to poorer overall treatment response. These findings suggest that negative expectations about treatment outcome may be associated with reduced treatment benefit in CBGT, and may place individuals at significantly greater risk of premature treatment termination. The theoretical and clinical significance of these findings are discussed and suggestions for future research and practice are detailed.

Predictors of Treatment Change and Engagement in Cognitive-Behavioural Group

Therapy for Depression

Undoubtedly, Cognitive Behavioural Therapy (CBT) has emerged as a potent

therapy for depression, and is firmly represented as a treatment of choice among the

empirically supported therapies (Chambless et al., 1996; DeRubeis & Crits-Christoph,

1998; Hollon, DeRubeis, & Evans, 1996). Moreover, depressed patients treated with

CBT exhibit lower attrition rates and fewer relapses than patients in drug therapy (Nezu,

Nezu, Trunzo, & McClure, 1998; Roth & Fonagy, 1996).   Notwithstanding the benefits

of CBT for treating the acute phase of depression, and for exhibiting impressive

prophylactic effects, there remain a considerable number of patients who either fail to

complete treatment or who respond unsatisfactorily (Ilardi & Craighead, 1994). For

example, an attrition rate of 32% was reported for CBT in the National Institute of Health

Treatment of Depression Collaborative Research Program (Elkin et al., 1989; Elkin,

1994). Similarly, Hollon et al. (1992) found that 36% of patients involved in cognitive

therapy for depression terminated treatment prematurely.   Moreover, a high percentage

of patients continue to be symptomatic post-CBT. For example, Elkin et al. (1989)

reported a post-CBT remission rate of 51%; suggesting about one-half of the sample

remained symptomatic. This is consistent with reports from meta-analytic studies of

CBT for depression indicating that post-CBT depression scores continue to be in the

mildly depressed range (Cuijpers, 1998; Robinson, Berman, & Neimeyer, 1990).

Typically, attrition rates are mentioned in psychotherapy outcome studies as an

indicator of treatment efficacy, but researchers have rarely attempted to predict or

understand factors related to dropout in CBT. Among those studies that have reported

predictors of dropout, the typical design has involved the analysis of demographic variables (e.g. Oei & Kazmierczak, 1997; Organista, Munoz, & Gonzalez, 1994; Persons et al., 1988).   For example, Organista et al. (1994) were only able to correctly classify 59% of completers and dropouts with demographic variables and Beck Depression Inventory (BDI) scores serving as predictors. This is consistent with speculation by others (e.g. Wierzbicki and Pekarik, 1993) that there are likely other more complex psychological predictors of attrition such as patient expectations for change.

In contrast to research on therapy dropout, studies of predictors of CBT response in depression are broader in scope and have focused on demographic, disorder-relevant, cognitive (e.g., dysfunctional attitudes) and personality variables (e.g. Hoberman, Lewinsohn, and Tilson, 1988; Persons, Burns, & Perloff, 1988; Sotsky et al., 1991). With the exception of one variable, the search for predictors of treatment change in depression has generally yielded equivocal results. Across numerous studies, the most consistent and powerful predictor of treatment outcome for depression is one's baseline level of depression (Hoberman et al., 1988; Lewinsohn, Hoberman, & Clarke, 1989; Mynors-Wallace & Gath, 1997; Organista et al., 1994; Persons et al., 1988; Teri & Lewinsohn, 1986; Steinmetz, Lewinsohn, & Antonuccio, 1983).

Expectation for change has also frequently been cited as a notable indicator of outcome (Ilardi & Craighead, 1994; Lewinsohn et al., 1989; Oei & Sullivan, 1999; McCranie & Riley, 1992; Snyder, Ilardi, Michael & Cheavans, 2000; Whisman, Miller, Norman, & Keitner, 1995). Stewart and colleagues (1993) found that a patient's beliefs that he/she will be ineffectual in exerting positive change over his/her life (based on a composite of items from the BDI, the Beck Hopelessness Scale and the Dysfunctional

Attitude Scale) was significantly related to poor response to CBT. A similar relationship between expectancies for treatment outcome and CBT outcome has been suggested in the anxiety disorders (Borkovec & Costello, 1993; Chambless, Tran & Glass, 1997).

Clearly, a better understanding of the factors related to attrition and therapeutic success is necessary. Recently, Prochaska and his colleagues have advanced a model based on a continuum of change-readiness to explain differential response rates in various self-help programs (Prochaska, 2000). This model has been tested largely in the area of health behaviours, where stage of readiness has been found to predict treatment outcome from smoking cessation programs (DiClemente et al., 1991), pain management therapies (Kerns & Rosenburg, 2000), and weight loss treatments (Ingledew, Markland, & Medley, 1998), among others. Recently, some preliminary evidence suggesting the utility of this conceptualization within mental health has been accumulated. For example, Waites, Yudcovitch, Ellis and Truax (2000) reported a significant association between scores on a measure of readiness for change, based on Prochaska's conceptualization, and treatment response in a CBT group program for coping with depression. Similar results have been reported using CBT in a heterogeneous group of anxiety disorders (McDonald & Warren, 2001).

Negative treatment expectations may be conceptualized as a component of poor treatment readiness within the stages of change model. Briefly, the stages of change model hypothesizes that a continuum of change-readiness exists from precontemplation (not considering change), to contemplation (thinking about change), to preparation (deciding to change) and action (taking action to change). Prochaska, Norcross and DiClemente (1994) have speculated that a common error in the change process is using

action-based change strategies prematurely, prior to a firm decision and commitment to change (i.e. using action in precontemplation and contemplation stages of change-readiness). This in turn is hypothesized to explain failure to respond to action-based treatments such as CBT (Prochaska, 2000). This tendency toward premature action may engender pessimism regarding treatment success through repeated failure to sustain change. Fennell and Teasdale's (1987) observations that nonresponders in CBT for depression had a greater number of failed previous treatment attempts than CBT responders, would seem to support this reasoning.

Existing studies of negative expectancies for change have considered this variable in the context of the hopelessness theory of depression and not as it differentially pertains to attrition and treatment outcome (e.g., Whisman et al., 1995). Thus, the main objective of this present study was a further evaluation of the relationships among treatment outcome expectancies and a variety of specific treatment efficacy indicators (i.e., therapy attrition, cognitive change, and symptom change). It was expected that higher degrees of pessimism about symptom control would be associated with higher attrition rates and also with less symptom change over the course of CBT among treatment completers.

Method

Participants.

All patients were first evaluated by a psychiatrist and were referred for treatment of depression from the outpatient mental health clinic at the Queen Elizabeth II Health Sciences Centre in Halifax, Nova Scotia. Participants were assessed for group inclusion by the two principal therapists (H.W. & C.B.). Principal inclusion criteria for the group were diagnosis of a mood disorder and recognition of psychosocial factors either

precipitating or perpetuating mood problems (i.e. those viewing their mood problems as exclusively the product of biological factors were excluded). Exclusion criteria consisted of a current or previous diagnosis of a psychotic spectrum disorder, acute substance abuse, and acute manic symptoms. Forty-eight participants were enrolled in successive groups from 1997 to 1999. The majority of participants were female (37 female, 11 male) and this ratio is consistent with the female-to-male ratio for depression reported in the general population (Blazer, Kessler, McGonagle, & Schwartz, 1994). The average age was 40.71 years ($\underline{SD}$ = 10.93). In terms of chronicity, the average number of months from time of initial mental health system contact to enrollment in the group was 24.96 ($\underline{SD}$ = 27.09), while the average number of psychiatric admissions was 0.65 ($\underline{SD}$ = 0.89). Nine participants dropped out of the group after attending between one and three sessions and 39 participants completed the group. The referring psychiatrist determined individual diagnoses. The clear majority of participants had a primary diagnosis of Major Depressive Disorder (73%, $\underline{n}$ = 35). Seventeen percent ($\underline{n}$ = 8) had a primary diagnosis of Dysthymia, 8% ($\underline{n}$ = 4) had a primary diagnosis of Bipolar Disorder, and one individual had a primary diagnosis of Adjustment Disorder with depressed mood. Thirty-five percent of the sample had comorbid diagnoses, including Axis I conditions of Dysthymia ($\underline{n}$ = 3), Panic Disorder ($\underline{n}$ = 2), Social Phobia ($\underline{n}$ = 2), Bulimia nervosa ($\underline{n}$ = 1), and Adjustment Disorder with depressed mood ($\underline{n}$ = 2), and Axis II conditions of Dependent Personality Disorder ($\underline{n}$ = 5) and Borderline Personality Disorder ($\underline{n}$ = 2).

All participants were taking at least one antidepressant medication at the time of group participation, sixteen participants were on two psychoactive medications, and three participants were on three psychoactive medications. Virtually all participants were on

either a selective serotonin reuptake inhibitor (SSRI; 54%, $\underline{n}$ = 26) and/or a newer

antidepressant compound (e.g. venlafaxine, buproprion; 50%, $\underline{n}$ = 24). Additionally, 5%

($\underline{n}$ = 2) were on a tricyclic antidepressant and 5% ($\underline{n}$ = 2) were on a monoamine oxidase

inhibitor. One participant was on a mood stabilizer alone, and 23% ($\underline{n}$ = 11) of the

sample was on a benzodiazepine.

<u>Measures</u>

    <u>Burns Depression Checklist (BDC)</u>**.** The BDC (Burns, 1989) consists of 15 items

assessing 15 different dimensions of depression. Clients are asked to indicate how much

each of the 15 symptoms have bothered them in "the last several days". A 4-point rating

scale for each item indicates the severity of each symptom from 0 (not at all) to 3 (a lot).

The BDC yields an overall depression score ranging from 0 to 45, which is obtained by

summing the ratings across all items. The concurrent validity of the BDC has been

demonstrated through highly significant correlations with the Beck Depression

Inventory-II ($\underline{r}$ = .82) and Multiple Affect Adjective Checklist-Revised - Depression scale

($\underline{r}$ = .55) in an undergraduate sample (Beal, Rabenhorst, & Skritskaia, 2000), and with the

Beck Depression Inventory ($\underline{r}$ = .89) and Zung Self-Rating Depression Scale ($\underline{r}$ = .87) in

clinical samples (Sekirnjak & Beal, 1999). These comparison scales are well-established

and valid instruments for assessing self-reported depressive symptoms. Moreover, the

BDC has been found to discriminate between depressed and nondepressed samples

(Sekirnjak, 1998). We evaluated the reliability of the BDC with the current sample of

depressed individuals and found that the scale possessed excellent reliability (alpha

coefficient = .92). This coefficient is consistent with the internal consistency estimate for

the BDC reported by Burns (1994) in a sample of clinically depressed individuals (i.e.,

.90).

Dysfunctional Attitudes Scale (DAS). The DAS (Weissman & Beck, 1978) was

designed to measure the silent assumptions and maladaptive beliefs that depressed

individuals tend to exhibit. This instrument consists of 40 items that are scored using a 1

(totally disagree) to 7 (totally agree) Likert scale. Some items are reversed scored.

Scores range from 40 to 280, with higher scores indicative of greater maladaptive belief

endorsement. Coefficient alphas range from .88 to .97 (Nelson, Stern, & Cicchetti, 1992)

and a 6-week test-retest reliability coefficient of .73 has been reported (Oliver &

Baumgart, 1985). The DAS has been found to correlate moderately with the Beck

Depression Inventory and reliably differentiates between depressed and nondepressed

groups (Nelson et al., 1992). The DAS also appears to be sensitive to changes in

depressed mood via psychotherapy (e.g., Zuroff, Blatt, Sanislow, Bondi, & Pilkonis,

1999).

Hopelessness Scale (HS). The HS (Burns, 1994) is a 5-item scale that assesses the

degree of optimism/pessimism regarding treatment and symptom control. Sample items

include " I feel pessimistic that things could ever change for the better", "There's very

little anyone could do to help me solve my problems". Scores range from 0 to 20, with

higher scores representing greater pessimism regarding symptom control and a more

negativistic orientation toward the possibility of treatment benefit. The test-retest

correlation of the HS pre- and post-group treatment in this particular sample was high (r

= .80), indicating that hopelessness may be fairly stable over time. Moreover, the alpha

coefficient of .86 in this sample reflects good reliability of this scale.

<u>Procedure</u>

Participants participated in a 10-session psychotherapy group for depression. Sessions were 2 hours in duration and held weekly. Between 6 and 10 participants were enrolled in each group. The treatment was based on empirically supported treatments for depression including Cognitive Behavioural Therapy (Beck, Rush, Shaw & Emery, 1979; Burns, 1980) and the Coping With Depression Course (Cuijpers, 1998; Lewinsohn, Antonuccio, Breckenridge & Teri, 1984), which draws heavily on social learning theory and behavioural treatment for depression. Treatment techniques used during the program included self-monitoring, behavioural activation (i.e., the integration of pleasure scheduling and graded activity scheduling), psychoeducation (e.g. sleep, nutrition hygiene), and cognitive restructuring. All participants received a manual accompanying the group Sessions followed a manualized protocol for treatment delivery and were conducted by a registered Ph.D. level psychologist (H.W.) with 7 years experience, and a registered occupational therapist (C.B.) with 20 years experience. Participants completed the self-report measures before and after participation in the group.

Results

<u>Pre-treatment Correlations</u>

At time 1, the symptom measures were significantly intercorrelated. Depression (BDC) was significantly correlated with maladaptive beliefs (DAS), $\underline{r} = .29$, $\underline{p} < .05$, and hopelessness (HS), $\underline{r} = .32$, $\underline{p} < .05$. The correlation between dysfunctional attitudes (DAS) and hopelessness (HS) was not significant, $\underline{r} = .25$, $\underline{p} =$ ns.

Treatment Dropout

An equivalent proportion of males and females completed the group, $\chi^2(1) = 0.68$, $p > .05$. The groups also did not differ significantly in terms of primary diagnosis, $\chi^2(3)$ $= 4.68$, $p > .05$, frequency of SSRI use, $\chi^2(1) = 1.23$, $p > .05$, frequency of newer antidepressant compound use$\chi^2(1) = .01$, $p > .05$, or frequency of benzodiazepine use, $\chi^2(1) = 2.91$, $p > .05$. Completers and dropouts were not significantly different in terms of chronicity of mental health system contact, $t (46) = 0.99$, $p > .05$, but dropouts had a significantly greater number of previous psychiatric admissions (dropout: $M = 1.22$, $SD = 1.09$; completers: $M = 0.51$, $SD = 0.79$), t (46) = 2.26, p < .05.

To investigate predictors of dropout, we examined pre-treatment scores between dropouts and completers using a multivariate analysis of variance (MANOVA), with treatment completion as the criterion variable and pre-treatment symptom scores as predictor variables. This analysis revealed an overall significant multivariate effect, $F (3, 44) = 9.60$, $p < .05$. The only significant univariate effect was for hopelessness, $F (1, 46) = 26.50$, $p < .05$. Table 1 presents the mean pre-treatment scores for dropouts and completers.

As illustrated in Table 1, treatment dropouts and completers had similar elevations of maladaptive beliefs (DAS) and depression (BDC) scores at pre-treatment. There were no significant group differences in these scores. However, dropouts reported significantly higher scores on hopelessness (HS) than completers. In fact, the hopelessness scores of dropouts were more than double that reported by treatment completers and this difference was statistically significant. Moreover, the low standard deviation of hopelessness scores for dropouts suggests that these individuals were

consistently high in hopelessness. Given the significantly greater number of previous

psychiatric admissions among dropouts relative to completers, the analyses were

calculated with this variable as a covariate. In these analyses, the significance and pattern

of the results were unchanged.

Treatment Response

Table 2 shows the average pre- and post-treatment scores on symptom measures

among treatment completers. Scores on depressive severity, maladaptive beliefs, and

hopelessness were significantly reduced over the course of treatment. At the time of

treatment initiation, the average depression score was in the moderate range of severity.

At post-treatment, this score had fallen into the borderline to mild depression range.

Eighty-two percent of participants reported some reduction in depressive symptoms, with

the average depression score reduced by 61%. These results compare well to other

cognitive behavioural treatment outcome studies for depression, which also indicate

improvement in depression scores and average post-treatment scores in the mildly

depressed range (Cuijpers, 1998; Persons et al., 1988; Peterson & Halstead, 1998). In

addition, pre-treatment scores on maladaptive beliefs were clearly in the clinical range

(more than one standard deviation above the mean for nonclinicals of 108, $\underline{SD} = 20$;

Hollon, Kendall & Lumry, 1986) whereas post-treatment scores were in the normal

range. Hopelessness scores showed the least change among symptom scores from pre- to

post-treatment but were also significantly reduced.

Predicting Treatment Change

Symptom Change. Two stepwise regressions were conducted with pre-treatment

scores on depression (BDC), hopelessness (HS) and maladaptive beliefs (DAS) serving

as predictor variables for each regression. In the first regression, cognitive change was investigated, using the DAS as the dependent variable. Only hopelessness scores significantly predicted DAS change, $\underline{F}$ (1,37) = 6.52, $\underline{p}$ < .05. Increased HS was related to fewer reductions in DAS throughout treatment and accounted for 15% of the variance in DAS change. In the second regression equation, change in depression (BDC) scores was tested. Consistent with previous research (e.g., Niemeyer & Weiss, 1990), only pre-treatment BDC scores predicted BDC change, $\underline{F}$ (1,37) = 10.28, $\underline{p}$ < .05, accounting for 22% of the variance.

Responder Analyses. To investigate the possibility of pre-treatment differences in relation to overall treatment response, participants were classified into responders and nonresponders on the basis of change in both maladaptive belief scores (DAS change) and depression scores (BDC change). Participants were classified as responders if their depression score dropped a level from pre to post treatment (based on the four levels of depression severity on the BDC) and if their DAS score dropped from the clinical range at pre-treatment to the normal range at post-treatment. Clinical levels of DAS were defined as scoring more than one standard deviation above the mean for normals (i.e. DAS normals: $\underline{M}$ = 108, $\underline{SD}$ = 20; Hollon et al., 1986). In short, to be classified as a responder for the CBGT program, participants had to demonstrate significant change in both depression and maladaptive beliefs. Using these criteria, 22 participants were classified as responders and 17 were considered nonresponders.

A MANOVA was conducted to examine pre-treatment differences between responders and nonresponders. In this analysis, treatment response status was the criterion variable and pre-treatment symptom scores served as the predictor variables.

Although there was no significant multivariate effect, $F(3, 35) = 1.91$, $p > .05$, hopelessness was significantly related to treatment response in the univariate analyses, F $(1, 37) = 4.87$, $p < .05$. Table 3 displays the mean scores for each group on pre-treatment symptom measures.

An inspection of the means revealed that there were no significant differences between responders and nonresponders on pre-treatment scores for either depression (BDC) or maladaptive beliefs (DAS). However, a marginally significant effect was obtained for hopelessness (HS), with responders reporting lower pre-treatment HS scores than nonresponders.

Discussion

This study investigated the relationship between negative expectations for symptom control, dropout rates and symptom change in CBGT for depression. The results support the efficacy of CBGT for the treatment of a range of mood disorders, including major depression. Participants showed significant reductions in depression, maladaptive belief endorsement, and hopelessness from pre- to post-treatment.

Consistent with previous research (e.g., Lewinsohn et al., 1989; Stewart et al., 1993), the present findings suggest that negative expectancies regarding symptom control may be a significant factor associated with poor treatment engagement in CBT. Compared to individuals who completed the program, persons who dropped out of CBGT reported substantially greater pessimism about the possibility of symptom control and endorsed beliefs that their problems were unsolvable. This finding is particularly noteworthy given that there were no significant pre-treatment differences between these groups on either depression severity or the degree of dysfunctional attitudes. As such,

pessimism about symptom control may place an individual at significantly greater risk for the premature termination of CBGT. Thus, it may be important for clinicians to routinely evaluate a patient's expectations of treatment at initial assessment and relate this to concerns regarding the individual's ability to engage with treatment.

Rather than viewing attrition as error variance in psychotherapy outcome research or perceiving negative treatment outcome expectancies as an exclusionary criterion for therapy, it may be possible for clinicians to modify their approach to treatment. Congruent with the stages of change model (Prochaska, 2000; Prochaska & DiClemente, 1983), clinicians may wish to step back from their traditional action-oriented treatment regimen, and help those at pre-action stages of change-readiness work through some of their doubts about therapy and pessimism about change. Such an alternative approach may be particularly important in that Prochaska (2000) has noted that only about 20% of people presenting to behavioural life-style change programs are ready for action-oriented therapy. Of the remainder of patients, approximately 40% are believed to be actively considering change but not yet resolved to pursuing change and another 40% report not even considering the possibility of change. This relatively low percentage of individuals at the action stage is consistent with figures from Waites et al. (2000) who found that 85% of a sample of candidates for a CBT depression group were at a pre-action stage of treatment readiness. Some initial support for this possibility of alternative treatment approaches for those pessimistic about treatment comes from Irving et al. (1997, as cited in Snyder et al., 2000) who found that clients in a community mental health clinic who were low in hopefulness benefited significantly more from having pre-therapy orientation sessions (e.g. goal-setting, setting strategies for attaining goals) than those already high in

hopefulness. Moreover, a modified treatment approach for those pessimistic about treatment outcome may be particularly important in view of the findings of the present study that these individuals also had a higher number of previous psychiatric admissions and consequently presumably had a number of previous unsuccessful treatment experiences.

Another important finding from this study is that even when participants with high negative treatment expectancies persisted with treatment, a pessimistic orientation toward symptom control was associated with reduced CBGT benefit. That is, negative treatment expectancies was a significant predictor of fewer reductions in maladaptive belief scores in the present study. Moreover, treatment expectancies predicted less depressogenic belief change even beyond the prediction attainable on the basis of maladaptive belief scores at treatment initiation. Although symptom control expectancies was not predictive of change in depression scores, those individuals classified as responding to treatment overall (in terms of both reductions in depression and maladaptive beliefs) showed a trend toward being significantly more optimistic regarding treatment outcome than treatment nonresponders. This marginally significant result is particularly telling, given that the patients highest in pessimism toward symptom control had already dropped out of treatment.

Reduced CBT benefit associated with negative expectations of symptom control resonates intuitively. In other words, individuals who indicated that symptom control would be impossible or highly unlikely would not be ideal candidates for a treatment that is based on the use of action-oriented strategies for gaining personal control or mastery over symptoms. The mechanisms through which negative outcome expectancies

contribute to reduced CBT benefit are, however, unknown. One possibility is that it may lead to less compliance with the homework necessary for CBT benefit (Burns & Nolen-Hoeksma, 1991; Burns & Spangler, 2000). Alternatively, Snyder et al. (2000) have also demonstrated that individuals low in hope generate fewer problem-solving alternatives when confronted with impediments to goal attainment and think more negatively about goal pursuits than their high hope counterparts.

If the findings from this study are reliably replicated, early identification of individuals with negative expectancies regarding symptom control may allow for additional interventions facilitating ultimate treatment engagement such as enlisting the support of significant others, motivational interventions, or challenging pessimism and hopelessness directly early in the course of treatment. Moreover, Petry, Tennen and Affleck (2000) have argued that in part, the investigation of motivation as an important predictor of treatment response has been impeded by the lack of consistent operationalization and standardization of this variable. As such, the development of sound measures assessing treatment readiness represents an important advancement for future research. Future research could also incorporate other indices of expectancies to ascertain whether it is demoralization more broadly (such as hopelessness depression) or pessimism about symptom change in particular that is an important predictor of dropout, symptom amelioration, and response to treatment. Development of a reliable measure of treatment readiness would also facilitate future research into the impact of this variable on treatment processes and outcome by using cutoff scores to randomize individuals at varying levels of motivation to alternative or standard treatment.

The importance of assessing and addressing negative expectations and hopelessness is further underscored by the significance of demoralization in depression research, particularly the prediction of suicide (Canon et al., 1999). Moreover, remoralization has been theoretically identified to be linked to the rapid early response often seen in CBT (Fennell & Teasdale, 1987) and sustained momentum and improvement through psychotherapy (Grencavage and Norcross, 1990).

It is important to point out the limitations of this study, which include the heterogeneity of the sample, the unknown reliability of the presenting diagnoses, the lack of control over participants' additional treatment, and the post hoc nature of these analyses. The sample in this study included not only individuals with major depressive disorder, but also those with other mood disorder diagnoses. Although such heterogeneity limits the internal validity of the study, it may also be seen as an advantage. Persons et al. (1988) have argued that research on the treatment of depressed persons is often limited in generalizability because the samples are overly homogeneous. The current sample represented a typical presenting population for CBT in outpatient mental health clinics (i.e., people with varying diagnoses, a range of presenting symptoms, and unique concurrent and previous treatment histories). As such, the present study has good external validity, as each of these factors is common in many treatment settings (Speer & Newman, 1996).

A second criticism of the present study is that diagnoses were not based on structured clinical interviews making the reliability of diagnoses unclear. As a consequence, the generalizability to a specific diagnostic group or groups is not possible. Other important treatment parameters were also not controlled in this study including

type or dosage of medications, or concurrent and previous psychotherapy. As such, it cannot be firmly stated that it was the CBGT program per se that produced symptom improvement. However, the results of this study, in supporting the efficacy of CBT for treatment of mood disorders, are consistent with well-controlled evaluations of CBT in the treatment of depression (see Hollon et al., 1996).

A further limitation of the present study involves the post-hoc nature of the analyses. In order to address this concern, we imposed a stringent Bonferroni alpha adjustment for our univariate significance tests. Finally, the use of a less well-established measure of depression may be a concern. However, existing psychometric data supports the reliability and validity of the BDC and the reliability of the HS scale. Future investigations of the constructs examined in the present study using alternative and varied measures would represent an important advancement.

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Table 1.

<u>Mean Pre-treatment Scores among Treatment Dropouts and Completers.</u>

Pre-treatment Variables	Dropouts	Completers	Significance
	(N=9)	(N=39)	
DAS	168.33 (26.32)	158.00 (27.45)	t(46)=1.03
BDC	25.78 (9.41)	24.90 (10.07)	t(46)=0.24
HS	14.11 (1.54)	6.82 (4.15)	t(46)=5.15[*]

[*]$\underline{p} < .017$

<u>Note.</u> DAS = Dysfunctional Attitudes Scale; BDC = Burns Depression Checklist; HS = Hopelessness; alpha adjusted using Bonferroni correction for multiple tests.

Table 2.

Mean Pre- and Post-Treatment Scores in the Completer Group.

Variable	Pre-treatment score	Post-treatment score	Significance
DAS	158.00 (27.45)	119.56 (35.04)	$t(38) = 8.95^*$
BDC	24.90 (10.07)	15.18 (9.59)	$t(38) = 7.37^*$
HS	6.82 (4.15)	5.36 (4.15)	$t(38) = 3.48^*$

$^*\underline{p} < .017$

Note. DAS = Dysfunctional Attitudes Scale; BDC = Burns Depression Checklist; HS =

Hopelessness; alpha adjusted using Bonferroni correction for multiple tests.

Table 3.

Mean Pre-treatment Scores among Treatment Responders and Nonresponders.

Pre-treatment Score	Responders (N=22)	Nonresponders (N=17)	Significance
DAS	159.14 (21.55)	156.53 (34.30)	t(37)=0.29
BDC	24.77 (9.80)	25.06 (10.71)	t(37)=0.09
HS	5.59 (4.19)	8.41 (3.62)	t(37)=2.21[*]

[*]p = .034

Note. DAS = Dysfunctional Attitudes Scale; BDC = Burns Depression Checklist; HS = Hopelessness; alpha adjusted using Bonferroni correction for multiple tests.