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2 Title: Randomized Controlled Trial of Group Cognitive Behavioral Therapy Compared to a

3 Discussion Group for Comorbid Anxiety and Depression in Older Adults.

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**Abstract**

*Background:* Comorbid anxiety and depression in older adults is associated with worse physical and mental health outcomes and poorer response to psychological and pharmacological treatments in older adults. However, there is a paucity of research focused on testing the efficacy of the comorbid treatment of anxiety and depression in older adults using psychological interventions. Accordingly, the primary objective of the current study was to test the effects of a group cognitive behavior therapy (CBT) program in treating comorbid anxiety and depression in a sample of older age adults. *Method:* A total of 133 community-dwelling participants aged over 60 years (mean age = 67.35, SD = 5.44, 59 = male) with *both* an anxiety disorder and unipolar mood disorder, as assessed on the Anxiety Disorder Interview Schedule (ADIS), were randomly allocated to an 11 week CBT group or discussion group. Participants with Mini-Mental State Examination scores below 26 were excluded. Participants were assessed pre-treatment, post-treatment and at 6 months follow-up on the ADIS, a brief measure of well-being, Geriatric Anxiety Inventory and Geriatric Depression Scale. *Results:* Both conditions resulted in significant improvements over time on all diagnostic, symptom and wellbeing measures. Significant group by time interaction effects emerged at post-treatment only for diagnostic severity of the primary disorder, mean severity of all anxiety disorders, mood disorders, and all disorders, and recovery rates on primary disorder. *Conclusion:* Group CBT produced faster and sustained improvements in anxiety and depression on diagnostic severity and recovery rates compared to an active control in older adults.

Key Words: anxiety, depression, transdiagnostic, cognitive behavioral therapy, geriatric, late-life, comorbid, randomized controlled trial

1 Anxiety and depression are common disorders that frequently co-occur (Kessler et  
2 al., 1996, Kvaal et al., 2008), overlap in terms of risk factors (Vink et al., 2008, Blanco et al.,  
3 2014), phenomenology (Watson et al., 1995), and genetic factors (Kendler et al., 2007,  
4 Craske, 2012). In older adults, the co-occurrence of anxiety and depression is associated  
5 with worse outcomes than either disorder alone, including increased risk of cognitive  
6 decline and dementia (DeLuca et al., 2005), more severe depression, chronic course,  
7 disability and increased suicide rates (Lenze et al., 2000, Cohen et al., 2009, Almeida et al.,  
8 2012, Prina et al., 2011), and extensively higher health care costs than for anxiety or mood  
9 disorders alone (Vasiliadis, 2012).

10 Comorbidity is widely associated with poorer treatment outcomes. In older  
11 populations comorbid anxiety has been shown to delay and reduce treatment response for  
12 depression using various interventions including antidepressants (Cohen et al., 2009),  
13 stepped care approaches that combine psychological and pharmacological therapies (Hegel  
14 et al., 2005), clinical case management, group CBT, and clinical case management plus group  
15 CBT (Gum et al., 2007). Importantly, these treatments for primary depression do not  
16 produce significant reductions in comorbid anxiety symptomatology at post treatment (Gum  
17 et al., 2007, Serfaty et al., 2009). In contrast, trials focused on treating geriatric anxiety  
18 typically report reductions in post treatment depression symptom severity, although  
19 changes in the diagnostic severity of comorbid mood disorders have not been reported.  
20 (Barrowclough et al., 2001, Gorenstein et al., 2005, Stanley et al., 2003b, Stanley et al.,  
21 2003a, Wetherell et al., 2003). Hence, the impact of therapy for anxiety disorders on mood  
22 disorder recovery has yet to be fully determined. Given that comorbidity reduces the  
23 effectiveness of treatments targeting the primary disorder and is associated with worse long  
24 term health and wellbeing, a program that addresses the core features of both disorders

1 might be more efficacious. In line with this, recent research in younger adults suggests that  
2 targeting comorbidity using transdiagnostic approaches might improve treatment outcomes  
3 for anxiety disorders (Norton et al., 2013).

4 Despite the clear need to target comorbidity, most research has targeted the  
5 treatment of single disorders, with more trials of transdiagnostic treatments needed.

6 Reviews of psychological treatments for depression in older adults indicate that cognitive  
7 behavioral therapy (CBT) is as effective as in younger adults and is superior to waitlist, care-  
8 as-usual, placebo and other control groups, with moderate to large effect sizes (mean  
9  $d=0.72$ )(Mackin et al., 2005, Cuijpers et al., 2006, Serfaty et al., 2009), although a recent  
10 meta-analysis of depressed older adults found CBT was superior to non-active, but not  
11 active treatments (Gould et al., 2012a). Meta-analyses of psychological treatments for  
12 anxiety disorders in older adults have been mixed. One found CBT was superior to waitlist  
13 and active control conditions for anxiety with comorbid depression symptoms, but was  
14 equivalent to active control for reducing worry severity (Hendriks et al., 2008). More  
15 recently, CBT was found to be only marginally more effective than active controls. and the  
16 authors suggested that targeting comorbidity might increase therapeutic outcomes (Gould  
17 et al., 2012b).

18 In one of the few transdiagnostic studies in older adults, Wuthrich and Rapee (2013)  
19 recently found in a randomized controlled trial (RCT) that group CBT was efficacious  
20 compared to a wait list condition for older adults with both anxiety and depression, and that  
21 the improvements were maintained at 3 month follow up. However, as this study compared  
22 group CBT to a waitlist condition, it is unclear whether the improvements were due to CBT  
23 skills training or to non-specific therapy effects such as sharing with others, companionship,  
24 support from a caring therapist or intellectual stimulation. Given existing research that

1 demonstrates that CBT for anxiety and depression may not be superior to supportive  
2 therapy or discussion groups (Gould et al., 2012b, Wetherell et al., 2003, Gould et al.,  
3 2012a) it is important to test if CBT is superior to non-specific treatments for comorbid  
4 anxiety and depression.

5         Large differences exist in the literature between the types of non-specific or active  
6 therapies used in RCTs. An optimal test of CBT would be to compare its efficacy against a  
7 non-directive therapy that maximizes the utilization of generic psychotherapy skills (such as  
8 warm, positive regard; reflective listening and empathy), as well as a control for group  
9 processes, notably, supportive peer interactions, intellectual and social stimulation.

10 Recently, in an RCT for older adults with depression, Serfaty et al.(2009) compared CBT to  
11 treatment as usual and to a non-specific talking therapy condition, and found that CBT was  
12 superior relative to the other conditions. However, in the talking control condition,  
13 therapists were instructed to talk about neutral topics only and not emotional topics.  
14 Therefore it is unclear whether discussion and support of emotional issues would be  
15 equivalent to CBT. In an earlier RCT, Wetherell et al. (2003) compared group CBT to a  
16 discussion group and wait list control in older adults with Generalized Anxiety Disorder and  
17 found that both CBT and the discussion group were superior to wait list; although there  
18 were no differences between CBT and the discussion group. In this study, the discussion  
19 group focused on discussion of worry topics, and included journaling worries for homework,  
20 suggesting that discussing emotional topics in a group setting may be beneficial for anxious  
21 older adults. Therefore a comparison of a transdiagnostic CBT program to a discussion  
22 group, which encouraged discussion of both emotional issues and stimulating neutral topics,  
23 in older adults with comorbid anxiety and depression that examines changes in both anxiety  
24 and depressive disorders is needed.

1           The specific aim of the current study was to conduct an RCT to evaluate the efficacy  
2 of group CBT compared to an active control (non-directive discussion group), to treat  
3 comorbid anxiety and depression in older adults. On the basis of the existent literature, it  
4 was expected that both treatment conditions would result in significant improvements on  
5 diagnostic severity and symptom measures over time but that group CBT would result in  
6 greater reductions in both anxiety and depression diagnostic severity compared to the  
7 discussion group condition over time. A further prediction was that the improvements from  
8 group CBT would be maintained over a six month follow up period.

9

10

## Methods

### 11 Participants

12           One hundred and seventy five community dwelling participants attended a  
13 University Centre Clinic for assessment and a total of one-hundred and thirty-three  
14 ultimately participated in the trial. Eligible participants were aged 60 years or older (age  
15 range 60-88, mean = 67.35, SD = 5.44, male = 59) and were recruited via advertisements in  
16 local newspapers (2011-2013). Eligible participants met Diagnostic and Statistical Manual of  
17 Mental Disorders – IV (DSM-IV) criteria for *both* an anxiety and a unipolar mood disorder,  
18 with either anxiety or mood being the primary (most interfering) problem, and stabilized on  
19 psychotropic medication for 4 weeks. Exclusion criteria were: Mini-Mental State  
20 Examination Score <26, unable to read an English language newspaper, current self-harm,  
21 active suicidal intent, psychosis, or bipolar disorder. All participants were asked to refrain  
22 from engaging in additional treatment from a therapist or making changes to their  
23 medication status during the course of the trial, and this was monitored at post-treatment  
24 and follow-up. The flow of participants through the study is presented in Figure 1.

1 **Measures**

2 **Diagnostic Clinical Interview.** Participants completed the Anxiety Disorders  
3 Interview Schedule for DSM-IV (ADIS:Di Nardo et al., 1994), a semi-structured interview for  
4 diagnosing anxiety and related disorders including mood disorders according to Diagnostic  
5 and Statistical Manual of Mental Disorders-IV edition (DSM-IV) criteria on a 0-8 severity  
6 rating scale where ratings of four and above are considered of clinical severity and meet  
7 diagnostic status. This interview was administered by graduate students in clinical  
8 psychology formally trained on the ADIS and given regular supervision to discuss diagnostic  
9 decisions. The primary disorder was defined as the most interfering disorder. Participants  
10 with clinical severity ratings of four or above for an anxiety disorder *and* a mood disorder  
11 were included in the study. The most common primary disorder was Generalized Anxiety  
12 Disorder (33.1%) followed by Major Depressive Disorder (27.8%). The interviews were  
13 videotaped for reliability purposes and 25% were recoded after the study's completion for  
14 the purpose of reliability coding. Inter-rater reliability ( $k$ ) for agreement on the presence of  
15 a disorder in the diagnostic profile was  $k=0.82$ (90.5% agreement) for major depressive  
16 disorder,  $k=0.88$ (97.5% agreement) for dysthymia,  $k=0.72$  (94% agreement) for generalized  
17 anxiety disorder and  $k=1.00$  (100% agreement) for social phobia.

18 **Cognitive Assessment.** Mini Mental State Examination Revised (MMSE) (Folstein et  
19 al., 1975), is a widely used brief cognitive screener for identifying dementia. The cut off  
20 score of 26 has been recommended for identifying cognitive ability in the normal range  
21 (sensitivity = 0.80, specificity = 0.87) (Kukull et al., 1994). Participants scoring below 26 were  
22 excluded from this study ( $n=3$ ).

23 **Self-Report Measures.**



1           *Geriatric Depression Scale* (GDS: Yesavage et al., 1983), is a 30 item self-report  
2 measure of depression symptoms developed for older adults. It has high internal  
3 consistency, reliability, sensitivity and specificity in older adults with zero to moderate  
4 cognitive impairment (Yesavage et al., 1983, Keiffer et al., 2002, Jongenelis et al., 2005).  
5 Internal consistency in the current sample was  $\alpha=.78$ .

6           *Geriatric Anxiety Inventory* (GAI: Pachana et al., 2007), is a 20 item measure of  
7 anxiety symptoms developed for older adults. It has been shown to have adequate internal  
8 consistency, test-retest reliability and concurrent validity (Pachana et al., 2007). Internal  
9 consistency in the current sample was  $\alpha=.83$ .

10           *World Health Organization Quality of Life Measure Brief* (WHOQOL-BRE)(WHOQOL  
11 Group, 1995), is a multidimensional measure of quality of life which assesses the following  
12 domains: physical health, psychological, social relationships, and environment. The scales  
13 had adequate internal consistency in this sample, physical  $\alpha=.72$ , psychological  $\alpha =$   
14  $.67$ , environmental  $\alpha = .71$ , with the internal consistency of the social relationships  
15 subscale marginally adequate ( $\alpha = .55$ ).

16           **Group programs.** Both programs consisted of 11 x 2 hour sessions conducted over  
17 12 weeks (with a break between sessions 10 and 11). The sessions were conducted by  
18 graduate students in clinical psychology with 6-8 group members. Therapists ran both types  
19 of treatment programs so that treatment type was not confounded with the skills of an  
20 individual therapist.

21           The *Ageing Wisely CBT* manualized group program was based on cognitive  
22 behavioral skills for depression and anxiety. Participants were taught the following skills:  
23 psycho-education, activity scheduling, problem-solving, cognitive restructuring and coping  
24 statements, graded exposure, assertiveness training, and sleep hygiene. Specific application

1 of these skills were applied to topics associated with anxiety and depression in older adults  
2 such as dealing with loss and bereavement, social isolation, dementia and low motivation.  
3 The program included a structured participant workbook. Skills were taught with a mixture  
4 of didactic teaching, group discussions and role play, and there was a large emphasis on  
5 home practice of the skills taught in sessions.

6       The *Discussion Group* program was focused on increasing peer support, socialization  
7 and mental stimulation by encouraging group discussion about personal issues over the  
8 week (for the first half of each session), followed by discussion of stimulating set neutral  
9 topics such as hobbies, life experiences, and current affairs. Therapists followed a  
10 therapeutic manual which provided a direction on the non-specific therapy skills to be used  
11 (and directive skills not to be used) as well as the stimulating topics to be discussed.

12       **Treatment Adherence and Integrity.** To ensure adherence to treatment protocols,  
13 therapists attended group supervision with the study authors (who are all clinical  
14 psychologists) once a fortnight for an hour. All group therapy sessions were video recorded.  
15 To check for treatment integrity a random 25% of sessions were rated by an expert  
16 independent of the research team and unaware of the study hypotheses, using a checklist  
17 based on recommendations by Waltz, Addis, Koerner, and Jacobson (1993). There was one  
18 minor breach of protocol in an early discussion group session (that was not confounded  
19 with CBT skills). This breach was clarified and discussed in supervision, and training was  
20 provided to assist the therapist to apply the treatment protocol more rigorously in future  
21 sessions. All clinicians administered both types of intervention.

22       **Treatment Credibility.** In order to check that the treatments (CBT and discussion  
23 groups) were equally credible, a 3 item measure based on the one developed by Devilly and  
24 Borkovec (Devilly et al., 2000) was adapted for this study. Items asked about individuals

1 confidence that the program would be beneficial and were rated on a 10 point scale (1 =  
2 Not at all, 10+ Extremely), [e.g. *How confident are you that this overall treatment program*  
3 *will be successful in reducing your anxiety and low mood?*]. The items were summed for pre  
4 and post treatment analysis between groups, and had good internal consistency (pre alpha  
5 = .82, post alpha = .87).

6 **Group Cohesion Measure.** The Group Cohesion Questionnaire- Revised (Treadwell et  
7 al., 2001) is a 25 item measure that asked whether participants thought the group worked  
8 well together and that they felt like part of the group. Items were rated on a Likert scale (1=  
9 *strongly disagree* to 4 = *strongly agree*). The total score had good internal consistency in this  
10 sample (alpha = .83).

11 **Therapist Alliance Measure.** The Helping Alliance Questionnaire - II (Luborsky et al.,  
12 1996)patient version, was administered at the beginning of session 10. It is a 19 item  
13 questionnaire that measures therapeutic alliance from the patient's perspective, and items  
14 are rated on a 6 point Likert scale (1= *strongly disagree* to 6 = *strongly agree*). The total  
15 score had adequate internal consistency in this sample (alpha = .85).

16

## 17 **Procedure**

18 Ethics approval from the University Human Ethics Committee was obtained.  
19 Participants were recruited via advertisements, local General Practitioners and social clubs.  
20 Following written consent, participants completed the face-to-face ADIS interview, cognitive  
21 examination, and self-report measures including demographics. Computerized random  
22 numbers were used to allocate participants to 1 of 2 treatment groups (CBT or Discussion).  
23 The randomization sequence was created at the beginning of the study by the first author  
24 using a computer generated randomizer. Participants were randomly assigned in blocks of

1 6-8 participants by the research assistant, blind to the randomization sequence. At the  
2 beginning of session 2 of group treatment, all participants completed the treatment  
3 credibility questionnaire, and at the beginning of session 10 all participants completed the  
4 therapist alliance, group cohesion and also the treatment credibility measure for a second  
5 time. At the end of the 12 week program and again at 6-months follow-up, participants  
6 completed the self-report questionnaires, ADIS and cognitive assessments (rated by  
7 clinicians unaware of condition allocation). Participants who had not demonstrated  
8 significant improvement and were in need of further help at the six month follow up were  
9 either offered CBT group treatment or referral for further assistance.

10

## 11 **Data Analysis**

12 All analyses were conducted as intent-to-treat and as such all participants were  
13 analyzed in the group to which they were randomized. Differences in diagnostic severity was  
14 the primary outcome measure. Differences between groups on continuous measures (pre,  
15 post, follow up) were examined using hierarchical mixed models containing random  
16 intercept and random slope terms as well as fixed effects for treatment received controlling  
17 for baseline cognitive ability, WHOQOL psychological domain and group therapist.  
18 Differences between groups on diagnostic status were examined using the chi-squared  
19 statistic to report recovery rates from pre to post to follow up assessment.

20

## 21 **Power**

22 Power calculations were based on chi-square tests using diagnostic status as the  
23 primary outcome measure. It was calculated that a sample size of 135 participants would  
24 provide power of .88 to detect a small effect size of 0.3, at an alpha of .05.

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## Results

### Demographic Measures

The groups did not differ significantly on baseline demographic features (i.e. age, gender, marital status, income, education, employment, country of birth, anxiolytic or antidepressant medication status) or number or type of chronic illnesses, or number of medications ( $p > .05$ ). There were no significant differences on pre-assessment ADIS severity of the primary problem, MMSE or self-report questionnaire measures apart from the CBT group scoring significantly higher on the WHOQOL Psychological domain,  $F(1, 132) = 4.73$ ,  $p = .031$  (mean = 11.41 vs 10.67). See Table 1 for more details. Although there was no statistical difference between the means of the total MMSE scores for the two treatment groups,  $F(1,132) = 0.812$ ,  $p = .371$ , because pre-treatment cognition may be important for the ability to learn and implement CBT (Johnco et al., 2014), pre-assessment cognition was statistically controlled in all further analyses. There were no significant differences between groups in terms of changes in medications, or consulting with an external psychologist at post or follow up assessment ( $p > .05$ ).

### Drop Outs, Treatment Credibility, Group Cohesion, and Therapist Alliance

The two groups did not differ significantly on the number of drop outs,  $\chi^2(1, N = 133) = 1.471$ ,  $p = .246$ , mean number of sessions attended,  $\chi^2(10, N = 133) = 6.870$ ,  $p = .689$ , treatment credibility assessed in session 2,  $\chi^2(20, N = 117) = 23.235$ ,  $p = .277$ , or session 10,  $\chi^2(21, N = 108) = 30.090$ ,  $p = .090$ , group cohesion,  $\chi^2(29, N = 106) = 37.266$ ,  $p = .140$ , or therapist alliance,  $\chi^2(37, N = 104) = 51.671$ ,  $p = .055$ .

## 1 **Diagnostic Severity across Time and Condition**

2 Mixed model analyses were conducted to examine changes in severity of the  
3 primary disorder, mean of all disorders, and the mean of anxiety and mood disorders  
4 separately based on the ADIS scores. In all analyses MMSE scores (pre-treatment cognitive  
5 ability), WHOQOL psychological domain scores and group therapist were included as  
6 covariates. For the primary disorder, there was a significant effect of time (pre, post, 6  
7 month follow up),  $F(2, 243.030) = 90.737$ ,  $p < .001$ , as well as a significant time (pre, post, 6  
8 month follow up) by group (CBT, discussion group) interaction,  $F(2, 243.030) = 5.584$ ,  $p$   
9  $= .004$ . Post hoc follow up tests indicated that this was due to a significant improvement for  
10 CBT compared to the discussion group,  $t(118) = -3.549$ ,  $p < .001$ , but no group differences  
11 emerged at the 6 month follow up,  $t(108) = -1.151$ ,  $p = .252$ . The same pattern was found  
12 for the mean severity of all disorders, with a significant effect for time,  $F(2, 242.864) =$   
13  $106.819$ ,  $p < .001$ , and significant group by time interaction,  $F(2, 242.864) = 5.140$ ,  $p = .007$ ,  
14 with CBT being superior at post treatment,  $t(120) = -3.686$ ,  $p < .001$ , but not follow up,  
15 although there was a trend for CBT to be superior,  $t(108) = -1.871$ ,  $p = .064$ . Estimated  
16 marginal means, standard errors and within group effect sizes for all mixed model analyses  
17 are presented in Table 2.

18 We further compared the efficacy of the two programs by comparing the mean  
19 severity for all anxiety disorders and mood disorders separately. For the mean severity of  
20 the anxiety disorders, analysis indicated a significant effect of time,  $F(2, 242.769) = 105.777$ ,  
21  $p < .001$ , and a significant time by group interaction,  $F(2, 242.769) = 4.722$ ,  $p = .010$ , with CBT  
22 being superior at post-treatment,  $t(120) = -3.622$ ,  $p < .001$ . The same pattern was found for  
23 the mean severity of the mood disorders with a significant effect of time,  $F(2, 241.570)$   
24  $= 93.347$ ,  $p < .001$ , and a significant time by group interaction,  $F(2, 241.570) = 3.412$ ,  $p = .035$ ,

1 again with a significant benefit for CBT at post-treatment,  $t(120) = -3.601, p < .001$ . See  
2 Figure 2.

3

#### 4 **Recovery Rates**

5 Recovery rate analyses were determined based on the presence or absence of an  
6 anxiety or mood disorder (reflected by a severity score of 4 or greater on the ADIS) at post  
7 and follow up assessments. CBT resulted in a significantly higher recovery rate of primary  
8 disorder diagnosis at post-treatment,  $\chi^2(1, N=122) = 11.038, p = .001$ , with 54% of  
9 participants in the CBT group no longer meeting criteria for their primary disorder compared  
10 to 24% of participants in the discussion group. At 6 month follow up the recovery rate for  
11 CBT was maintained (46% recovered), whilst the recovery rate for the discussion group  
12 improved (36% recovered) such that the difference between conditions was no longer  
13 significant,  $\chi^2(1, N=110) = 1.228, p = .327$ .

14 Secondly, we compared changes in the total number of disorders present at post and  
15 follow up assessments. CBT resulted in significantly higher recovery for all disorders at post-  
16 treatment,  $\chi^2(5, N=122) = 12.559, p = .028$ , with 38% participants from the CBT group no  
17 longer meeting criteria for any disorder compared to 12% of participants in the discussion  
18 group. At 6 month follow up this rate of recovery was maintained for the CBT group (35%  
19 recovered), whilst the rate of recovery increased for the discussion group (27% recovered)  
20 to result in a non-significant difference between the groups at 6 month follow up,  $\chi^2(5,$   
21  $N=110) = 5.469, p = .361$ .

22

#### 23 **Reliable change**

1           The extent to which change on the primary disorder severity was statistically reliable  
2 and clinically relevant was examined by calculating the Reliable Change Index according to  
3 Evans, Margison and Barkham (1998) using the following formula where SD1 is the standard  
4 deviation of the baseline observation and  $r$  is the reliability of the measure,  $SE_{diff} = SD1\sqrt{2}\sqrt{1-r}$ .  
5 For this purpose, the standard deviation and reliability score were taken from the current  
6 sample. Reliable change was seen for 63% of CBT participants from baseline to post-  
7 treatment, and for 59% from baseline to 6 month follow up. Reliable change for the  
8 discussion group condition from baseline to post-treatment was 41%, and 51% at 6 month  
9 follow up. The difference between groups from pre to post-treatment was significant,  $\chi^2(1,$   
10  $N = 122) = 5.893, p < .05$ , but not from pre to follow up,  $\chi^2(1, N = 110) = 0.582, p = 0.559$ .  
11 There was however one participant from the discussion group, whose symptoms  
12 substantially deteriorated from baseline to the 6-month follow-up assessment.

13

#### 14 **Symptom and Quality of Life Measures across Time and Condition**

15           Mixed model analyses indicated that there was a significant main effect of time on  
16 all symptom and quality of life measures showing that both treatments resulted in  
17 improvements over time controlling for baseline cognitive ability, WHOQOL psychological  
18 domain scores and group therapist: GDS  $F(2,233.125) = 80.881, p < .001$ ; GAI  $F(2,$   
19  $236.762) = 66.945, p < .001$ , WHOQOL Physical Health  $F(2,233.341) = 28.365, p < .001$ ; WHOQOL  
20 Psychological domain  $F(2,235.833) = 52.314, p < .001$ , WHOQOL Social Relationships domain  
21  $F(2,232.331) = 19.292, p < .001$ , and WHOQOL Environment domain  $F(2, 233.996) = 14.085,$   
22  $p < .001$ . However, there were no-significant group by time interactions on any of the self-  
23 report measures. See Table 2.

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## Discussion

This study compared the efficacy of transdiagnostic group CBT to an active control for older adults with comorbid anxiety and unipolar mood disorder. Both conditions resulted in significant improvements in diagnostic severity, self-reported anxiety and depressive symptoms and quality of life over time, pointing to the value of general group therapeutic processes in this population. However, participants who received CBT experienced significantly greater improvements in the diagnostic severity of their primary disorder, mean severity of all disorders, and anxiety and depressive disorders separately immediately following completion of treatment compared to participants in the discussion group. In the CBT condition 54% demonstrated recovery from their primary disorder; whilst 38% had recovered from all anxiety and mood disorders at post-treatment (compared to 24% and 12% in the discussion group respectively). These results are consistent with previous research among separately depressed and anxious older adults (Cuijpers et al., 2006, Gould et al., 2012b, Gould et al., 2012a), and suggests that CBT confers some specific benefits over general, non-specific aspects of therapy. Significant differences between groups over time was limited to changes in clinician ratings for both mood and anxiety disorders, rather than for self-report measures which may be less sensitive to diagnostic criteria, mirroring previous findings for treatments for depression (Gould et al., 2012a, Cuijpers et al., 2010).

Although these improvements were maintained for the CBT group at 6 month follow up, the superiority of CBT over the discussion group was no longer significant at this final assessment. Interestingly, this was not due to a significant worsening in the CBT group, nor a significant improvement in the discussion group from post to follow up. This finding is perhaps similar to the findings for geriatric anxiety in which CBT has been found to be only

1 marginally superior to active control treatments (Gould et al., 2012b). The pattern of results  
2 for changes in mean severity of all disorders, and recovery from primary and all anxiety and  
3 mood disorders, although non-significant, favored CBT at the 6 month follow up, so perhaps  
4 more power is needed to detect differences between groups 6 months after treatment.

5         These results also emphasize the therapeutic value for older adults of nonspecific  
6 therapeutic components such as social connection, sharing experiences with others, and  
7 engaging in stimulating discussion. Participants in this group rated similar treatment  
8 expectancies, therapeutic alliance and group cohesion to the CBT participants, although  
9 reasons for drop outs included “personality clashes” which appeared more problematic in  
10 this condition. Although group discussion reduced anxiety and depression, clinically  
11 significant gains took longer to achieve than among those receiving CBT. Without direction  
12 from therapists training in concrete skills, participants may have required longer to  
13 implement changes in their life. As we did not track changes in anxiety and depression  
14 symptoms throughout the 6 month follow up period we do not know whether changes were  
15 slow and linear or if this group rapidly made gains shortly after treatment was terminated.  
16 Understanding the trajectory of improvements and evaluation of cost-effectiveness of CBT  
17 compared to a discussion group are potentially fruitful future research directions.

18         Limitations of this study were that longer term maintenance of benefits was not  
19 assessed. Previous research has shown maintenance of treatment gains for specific  
20 disorders among older adults up to 12 months (Stanley et al., 2003a) so it is unlikely that the  
21 effects reported here would dissipate with time, but demonstration of this maintenance  
22 within a comorbid population would be valuable. Also the mean age of the sample was  
23 relatively young, and group differences in executive functioning were not controlled for.

- 1            In summary, this research indicates the efficacy and superior efficiency of group CBT
- 2            compared to non-specific discussion at producing improvements in anxiety and depression
- 3            among older adults immediately following treatment and builds on previous studies
- 4            validating the usefulness of transdiagnostic CBT for older adults.

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