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•Original research article•

Effect of group cognitive-behavioral therapy on the quality of life and social functioning of patients with mild depression

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Background: Several studies of moderate-to-severe depression have shown that combined treatment with individual cognitive behavioral therapy (CBT) and antidepressant medication is better than either CBT or antidepressants alone. Less research has focused on the outcomes of group-CBT and antidepressants in persons with mild depression.

Aim: Evaluate the effects of group-CBT in combination with antidepressants on the quality of life and social functioning of outpatients with mild depression.

Methods: We randomized 62 outpatients with mild depression into a control group (n=30) that received antidepressant medication for 12 weeks and an intervention group (n=32) that received antidepressants and group-CBT for 12 weeks; both groups were then continued on antidepressants alone for one year. Blinded evaluators used Chinese versions of the Hamilton Depression Rating Scale, Hamilton Anxiety Rating Scale, Social Disability Screening Schedule, Life Satisfaction Rating, Multidimensional Scale of Perceived Social Support, and Short Form Health Survey to assess participants after 12 weeks of treatment and at the end of one year of follow-up.

Results: Repeated measures analysis of variance showed that the depressive and anxiety symptoms of both groups improved significantly during treatment and that the improvement was greater in the CBT+antidepressant experimental group. Almost all of the social functioning, social support, and quality of life measures also showed significantly greater improvement in the CBT+antidepressant group than in the antidepressant-only group. Moreover, even after adjusting for differences in baseline demographic and clinical characteristics and for changes in the severity of depression and anxiety over time using an analysis of covariance, the greater improvement in the CBT+antidepressant group remained statistically significant both after the 12 weeks of group-CBT treatment and one year after the group CBT had ended.

Conclusions: Antidepressants alone or combined treatment with antidepressants and group-CBT can effectively improve the social function, quality of life, and healthy functioning of individuals with mild depression. However, combined treatment with both antidepressants and group CBT is better than treatment with antidepressants alone, and these benefits persist for up to one year after the CBT sessions have ended.

Keywords: group therapy; cognitive-behavioral therapy; antidepressants; depression; quality of life; social function; China

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1. Introduction

Depression is a severe mental illness that seriously affects the psychological, social, and economic functioning of communities.[1] The primary treatment options are antidepressant medication and psychotherapy, or a combination of antidepressants and psychotherapy. Antidepressants can effectively alleviate depressive symptoms, but compliance with antidepressants treatment is generally poor and relapse rates are high, so psychotherapy – either alone or as an adjunctive treatment to antidepressants – has become an increasingly important treatment for depression.[2] Cognitive-behavioral therapy (CBT) is a psychotherapeutic method that is relevantly easy to implement and that has consistently been shown to have good treatment effects for mild or moderate depression. CBT alleviates depressive symptoms and the associated behavioral impairments by supporting the confrontation of irrational cognitions and providing the individual with the skills needed to change their irrational cognitions.[3] The use of psychotherapy in combination with antidepressants not only enhances the reduction of depressive symptoms, but it also significantly improves the quality of life and social and cognitive functioning of patients with depression, changes that increase medication compliance and, thus, lead to a greater reduction in depressive symptoms and lower relapse rates.[4] Previous studies of the effects of combined treatment for depression mainly focus on inpatient populations and use forms of individual psychotherapy that require highly trained clinicians.[5] There have been relatively few studies about combined anti-depressants and psychotherapy for outpatients with mild depression.[6] The present study aims to investigate the effects of group cognitive behavior therapy on the quality of life and social functioning of outpatients with mild depression who are receiving antidepressants.

2. Methods

2.1 Participants

As shown in Figure 1, participants in this study were identified from 126 community-based psychiatric outpatients at the Shanghai Kangping Hospital from January 2013 to January 2014. Seventy participants met the inclusion criteria: (a) based on administration of the World Health Organization Composite International Diagnostic Interview (CIDI),[7] the patient fulfilled the diagnostic criteria for unipolar depression of the International Statistical Classification of Diseases and Related Health Problems, 10th Revision (ICD-10)[8]; (b) between 18 to 65 years of age; (c) had at least nine years of formal education; (d) had Hamilton Depression Rating Scale (HAM-D)[9] scores ranging between 7 and 17 (i.e., mild depression); (e) no brain disease, other psychiatric disorders, substance abuse, personality disorders, or severe suicidal thoughts or behaviors; (f) no severe somatic illnesses; (g) not participating in other clinical studies; and (h) participant (or participant's guardian) agreed to sign a consent form at the beginning of the study.

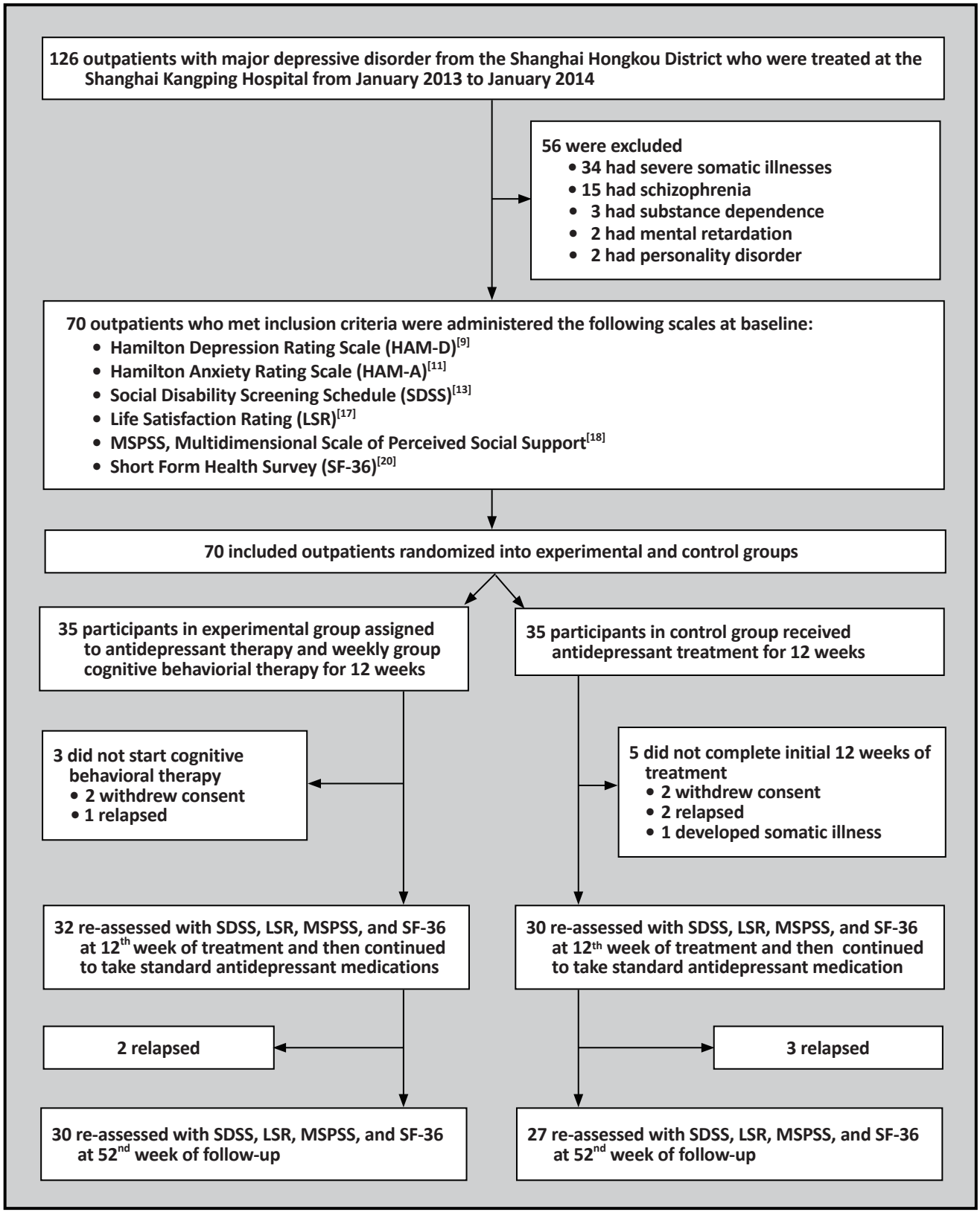
The 70 enrolled patients with mild depression were randomized using a computerized randomization protocol to an experimental group that received 12 weeks of combined treatment with standard antidepressants and group-CBT and a control group that only received 12 weeks of antidepressant medications. After enrollment, but prior to starting the trial, 3 patients dropped out from the experimental group and 5 from the control group, leaving 32 experimental-group patients and 30 control-group patients. All patients who completed the initial 12 weeks of treatment continued to take antidepressant medications and were subsequently followed-up for an additional 52 weeks; during this follow-up period 2 experimental-group patients and 3 control-group patients relapsed (i.e., HAM-D total scores >17).

2.2 Intervention

For 12 weeks the participants with mild depression in the experimental group received treatment with typical antidepressant medications in combination with group CBT, while those in the control group received only typical antidepressant medications. Both groups received normal outpatient follow-up for depression (i.e., biweekly clinic visits for drug monitoring) during the 12-week treatment period and the 52-week follow-up period provided by two senior psychiatrists. None of the patients received any form of professional psychotherapy during the 52-week follow-up period. The patients were taking standard doses of the antidepressants commonly used at our clinic: paroxetine (20 mg/d), sertraline (50 mg/d), escitalopram (10 mg/d), citalopram (20 mg/d), fluoxetine (20 mg/d), and venlafaxine (75-150 mg/d). All patients in both groups stayed on the same antidepressant medication throughout the initial 12 weeks of treatment and the subsequent 52-week follow-up; dosages remained unchanged during the initial 12 weeks, but were altered for some patients during the 52-week follow-up. Two attending psychiatrists who were blind to the group allocation of participants used the various measures (described below) to evaluate depressive symptoms and psychosocial factors at entry, after 12 weeks of treatment, and after 52 weeks of follow-up.

Group CBT was offered weekly for 12 weeks with each session lasting two hours. The 32 experimental-group patients who started CBT were subdivided into two groups of 16 individuals each. The groups were led by two experienced psychotherapists who based their treatment on the three-part model described in *A Group Cognitive Behavior Therapy Manual for Depression* written by Tian Po Oei.[10]

Figure 1. Flowchart of the study



1. Sessions 1 to 4 focused on developing group cohesion and introducing CBT. Group members and the psychotherapist agreed upon communal group rules and treatment goals. Patients assisted one another in understanding their own unique cognitive and behavioral characteristics and how these characteristics were related to their depressive emotions.
2. In sessions 5 to 10 the psychotherapist helped group members examine their moods, encouraged them to listen to one another's problems and challenges, and helped them identify the causes of their own anxious and depressive emotions. The therapist clarified specific things group members could do and taught them how to detect their own negative automatic cognitions. Group activities included assigning and practicing homework, doing relaxation exercises, completing a mood log, learning how to become aware of and record automatic negative cognitions, and re-assessing their current perceptions of self-worth.
3. In sessions 11 and 12 group members learned how to self-regulate anxious and depressive emotions and make new plans for their lives. They also discussed their feelings about concluding the group. Group members shared their emotions and thoughts relating to self-growth, gains, regrets, worries, concerns, and so forth.

Attendance in the CBT sessions was good. Among the 32 patients enrolled in the CBT+ antidepressant arm of the study who actually started CBT, 25 attended all 12 sessions, 4 attended 11 sessions, and 3 attended 10 sessions.

2.3 Measures

Clinicians administered the HAM-D,[9] the Hamilton Anxiety Rating Scale (HAM-A),[11] and the Clinical Global Impressions (CGI) Scale[12] to evaluate the severity of clinical symptoms at baseline, at the end of the initial 12 weeks of treatment, and at the end of the 52-week follow-up.

The Social Disability Screening Schedule (SDSS)[13] is a 10-item interviewer-administered scale that assesses the degree of functional impairment in different areas; each item is scored on a 3-point Likert scale (0=no or only minor impairment; 1=definite impairment; 2=marked impairment). The total score ranges from 0 to 20 (if some items are not applicable for particular patients they are not included in the summary score); studies in China have considered individuals with a total score of 2 or greater 'disabled'.[14,15]

The Life Satisfaction scale [16,17] includes three self-report subscales: the first subscale, the Life Satisfaction Rating (LSR) scale includes five items rated on 5-point Likert scales; the second subscale, the Life Satisfaction Index A (LSIA), includes 20 dichotomous (agree/disagree) items; and the third subscale, the Life Satisfaction Index B (LSIB), includes 12 items rated on 3-point Likert scales. The total score for the three subscales ranges from 25 to 89 with higher scores representing greater life satisfaction.

The Multidimensional Scale of Perceived Social Support (MSPSS) is a self-report scale developed by Zimet and colleagues[18] with 12 items rated on 7-point Likert scales that assess an individual's perception of the degree of social support received from family (4 items), friends (4 items), and significant others (4 items). The total score ranges from 12 to 84, with higher scores representing greater perceived social support. We use the Chinese version of the MSPSS[19] and report the total score, the score for the family support subscale (range in scores from 4 to 28), and the combined score for the 'friends' and 'significant others' subscales (range in scores from 8 to 56).

The self-report Short Form Health Survey (SF-36)[20] has 36 items that assess 9 dimensions of health: physical functioning (10 items), assesses extent to which health status impairs normal physical activities; role limitations due to physical problems (4 items), assesses extent to which physical problems effect functioning in normal daily roles; bodily pain (2 items), assesses perceived severity of pain and its impact on daily activities; general health perceptions (5 items), is a subjective assessment of one's own health status; vitality (4 items), assesses subjective feelings about vitality and the degree of stress; social functioning (2 items), assesses impact of physical and psychological problems on the number and quality of social activities; role limitations due to emotional problems (3 items), assesses role limitations caused by emotional problems (3 items); general mental health (5 items), assesses subjective feelings of encouragement, depression, loss of behavioral or emotional control, and other psychological problems; and health transition (1 item), is a subjective report of changes in overall health status. For all dimensions, higher scores represent better functioning. The first set of four dimensions are combined into a summary 'physical component' score and the second set of four dimensions (i.e., excluding the health transition dimension) are combined into a summary 'mental component' score.

2.4 Statistical analysis

SPSS software version 11.0 was used for analyses. We used an adjusted intention-to treat (ITT) method to analyze results of the included outpatients (excluding the 7 individuals who were enrolled but dropped out or relapsed prior to treatment, but including data on the 5 individuals who relapsed during the 52-week follow-up

period) by using the last observed value carried forward (LOCF) method. Thus the main analysis was based on the 32 individuals in the experimental group and the 30 individuals in the control group who completed the first 12 weeks of treatment. Continuous variables were assessed using t-tests and repeated measures analyses of variance (ANOVA). Categorical variables were compared using Chi-square tests. Comparisons between the CBT+antidepressant experimental group and the antidepressant-only control group at baseline, after 12 weeks of treatment, and after 52 weeks of post-treatment follow-up were adjusted for gender, age, age of onset, duration of current episode, total score on the Hamilton Depression Rating Scale, total score on the Hamilton Anxiety Rating Scale, and (for 12th week of treatment and 52nd week of follow-up) baseline values of the measures using analysis of covariance (ANCOVA). All tests were two-tailed and the level of significance was set at 0.05.

The study was approved by the institutional review board of the Shanghai Kangping Hospital.

3. Results

As shown in Table 1, despite the random group assignment, individuals in the control group were significantly older at the time of the first onset of depression and had significantly longer current episodes of illness than individuals in the experimental group. However, there were no statistically significant differences in other demographic characteristics.

The main results are shown in Tables 2 and 3. The HAM-D and HAM-A scores dropped significantly over the first 12 weeks of treatment and over the subsequent one-year follow-up. The decrease in depressive and anxiety symptoms was significantly greater in the CBT group than in the control group (based on the repeated measures ANOVA), but after adjustment for differences in the demographic and clinical characteristics of the two groups of patients, only the greater improvement in depressive symptoms at the end of the 12 weeks of treatment remained significantly different between the CBT and control groups (based on the ANCOVA).

Repeated measures ANOVA showed that all the other measures assessed also showed significant improvement over the course of treatment and follow-up, and in most cases the amount of improvement was significantly greater in the CBT group than in the control group, even after adjusting for the baseline values of the measures. The exceptions – which had significant improvements in both groups but no differences in the magnitude of the improvement between groups — were for SDSS, LSR, 3 of the 9 dimensions of the SF-36 (physical functioning, role limitations due to physical problems, and vitality), and the mental component total score of the SF-36. Due to a recording error, the two items on the bodily pain dimension from the SF-36 were not assessed after 52 weeks of follow-up, so this dimensional score was excluded from the analysis.

After adjustment for demographic characteristics, the severity of depressive and anxiety symptoms, and baseline values of the corresponding measures using ANCOVA, the differences between the CBT+antidepressant experimental group and the antidepressant-only control group at the end of 12 weeks treatment and at the end of 52 weeks of post-treatment follow-up remained statistically significant for almost all of the assessed measures. Exceptions included SDSS, the family support subscale of the MSPSS, and the 52-week follow-up assessment of the role limitations due to the physical problems dimension of the SF-36.

4. Discussion

4.1 Main findings

The present study found that middle-aged psychiatric outpatients with mild depression who are initially treated with group CBT and antidepressant medication for 12

Table 1. Demographics and clinical characteristics of participants

characteristic	experimental group (n=32)	control group (n=30)	statistic	p-value
male, n (%)	11 (34.4%)	7 (23.3%)	X^2=0.92	0.340
mean (sd) age	48.3 (17.5)	55.4 (15.3)	t=1.71	0.090
mean (sd) age at first onset of depression (years)	39.2 (15.6)	49.0 (15.7)	t=2.46	**0.020**
mean (sd) duration of current episode (months)	9.6 (11.5)	19.3 (18.2)	t=2.51	**0.021**
Education, n (%)				
middle school	9 (28.1%)	12 (40.0%)		
high school	11 (34.4%)	8 (26.7%)	X^2=1.02	0.603
university	12 (37.5%)	10 (33.3%)		
Type of antidepressant, n (%)				
selective serotonin reuptake inhibitor (SSRI)	24 (75.0%)	23 (76.7%)		
other types of antidepressant	8 (25.0%)	7 (23.3%)	X^2=0.03	0.884

Table 2. Comparison of the mean (sd) scores of the various outcome measures between the experimental group (n=32) and the control group (n=30) at baseline, after 12 weeks of treatment, and after 52 weeks of post-treatment follow-up

outcome measure	group	baseline	end of 12th week of treatment	end of 52nd week of follow-up	main effect of time F-value (*p*)	time X group interaction F-value (*p*)
HAM-D[a]	experimental group	10.00 (3.82)	5.19 (2.78)	1.78 (1.21)	**131.67 (<0.001)**	**17.46 (<0.001)**
	control group	9.60 (2.27)	7.90 (1.79)	5.67 (1.37)		
	t-value, F-value (*p*)[j]	0.51 (0.625)	**5.58 (0.027)**	0.32 (0.573)		
HAM-A[b]	experimental group	8.44 (4.41)	4.47 (2.42)	1.44 (1.13)	**106.92 (<0.001)**	**8.99 (0.001)**
	control group	9.57 (2.45)	7.70 (2.29)	5.67 (1.65)		
	t-value, F-value (*p*)[j]	1.26 (0.226)	1.55 (0.221)	0.10 (0.754)		
SDSS[c]	experimental group	5.59 (3.64）	3.91 (2.88)	2.16 (2.11)	**96.20 (<0.001)**	0.88 (0.393)
	control group	6.70 (2.09)	5.13 (1.83)	3.83 (1.37)		
	t-value, F-value (*p*)[j]	1.48 (0.151)	1.58 (0.215)	0.08 (0.778)		
	adjusted F-value (*p*)[k]	1.08 (0.389)	1.24 (0.300)	2.07 (0.063)		
LSR[d]	experimental group	14.78 (3.46)	16.59 (2.66)	18.41 (2.63)	**58.49 (<0.001)**	2.40 (0.112)
	control group	9.90 (3.33)	11.33 (3.06)	12.33 (3.46)		
	t-value, F-value (*p*)[j]	**5.66 (<0.001**)	0.21 (0.656)	0.23 (0.643)		
	adjusted F-value (*p*)[k]	**6.53(<0.001)**	**9.79 (<0.001)**	**9.04 (<0.001)**		
LSRA[e]	experimental group	8.72 (3.75)	10.81 (3.19)	13.53 (3.43)	**36.08 (<0.001)**	**16.24 (<0.001)**
	control group	5.80 (3.33)	6.70 (3.23)	6.80 (3.28)		
	t-value, F-value (*p*)[j]	**3.23 (0.002)**	0.30 (0.598)	0.26 (0.621)		
	adjusted F-value (*p*)[k]	**2.61 (0.022)**	**3.62 (0.003)**	**8.72 (<0.001)**		
LSRB[f]	experimental group	11.31 (4.00)	13.59 (3.00)	15.25 (2.17)	**49.20 (<0.001))**	**5.90 (0.007)**
	control group	9.40 (2.65)	10.70 (1.60)	11.30 (2.23)		
	t-value, F-value (*p*)[j]	**2.24 (0.030)**	17.11 (<0.001)	1.18 (0.288)		
	adjusted F-value (*p*)[k]	1.90 (0.088)	**5.65 (<0.001)**	**9.04 (<0.001)**		
MSPSS[g]	experimental group	57.66 (16.72)	60.13 (12.65)	65.19 (10.24)	**14.00 (<0.001)**	**5.08 (0.013)**
	control group	56.33 (14.46)	57.10 (13.33)	58.23 (12.66)		
	t-value, F-value (*p*)[j]	0.33 (0.741)	**4.26 (0.040)**	0.01 (0.925)		
	adjusted F-value (*p*)[k]	2.09 (0.060)	**2.34 (0.036)**	**3.04 (0.009)**		
MSPSS-FAM[h]	experimental group	20.50 (6.45)	21.63 (4.45)	22.72 (3.51)	**6.96 (0.005)**	**3.57 (0.050)**
	control group	20.27 (4.88)	20.53 (4.19)	20.63 (4.03)		
	t-value, F-value (*p*)[j]	0.16 (0.877)	**4.18 (0.050)**	1.04 (0.316)		
	adjusted F-value (*p*)[k]	1.56 (0.168)	1.25 (0.294)	1.94 (0.082)		
MSPSS-OTH[i]	experimental group	37.16 (12.21)	38.50 (9.81)	42.47 (7.81)	**13.86 (<0.001)**	**4.35 (0.021)**
	control group	36.07 (10.29)	36.5 (9.75)	37.60 (9.35)		
	t-value, F-value (*p*)[j]	0.38 (0.711)	**6.65 (0.016)**	0.03 (0.858)		
	adjusted F-value (*p*)[k]	2.13 (0.055)	**2.58 (0.023)**	**3.12 (0.008)**		

[a] HAM-D, Hamilton Depression Rating Scale[9]
[b] HAM-A, Hamilton Anxiety Rating Scale[11]
[c] SDSS, Social Disability Screening Schedule[13]
[d] LSR, Life Satisfaction Rating scale[17]
[e] LSRA, Life Satisfaction Rating-Index A[17]
[f] LSRB, Life Satisfaction Rating-Index B[17]
[g] MSPSS, Multidimensional Scale of Perceived Social Support Scale[18]
[h] MSPSS-FAM, family support subscale of Multidimensional Scale of Perceived Social Support Scale[18]
[i] MSPSS-OTH, other (non-family) support subscale of Multidimensional Scale of Perceived Social Support Scale[18]
[j] Comparisons at end of 12th of treatment and at end of 52nd week of follow-up are controlled for the baseline values
[k] Adjusted for gender, age, age of onset, duration of current episode, total score on Hamilton Depression Rating Scale,[9] total score on Hamilton Anxiety Rating Scale,[11] and (for 12th week of treatment and 52nd week of follow-up) baseline values of the variable

Table 3. Between group comparisons of mean (sd) scores for 9 dimensions and 2 summary measures of the Short Form Health Survey (SF-36) between the experimental group (n=32) and the control group (n=30) at baseline, after 12 weeks of treatment, and after 52 weeks of post-treatment follow-up

SF-36 subscale	group	baseline	end of 12th week of treatment	end of 52nd week of follow-up	main effect of time F-value (*p*)	time X group interaction F-value (*p*)
physical functioning	experimental group	28.13 (2.59)	28.78 (1.77)	29.16 (1.37)	**6.32 (0.006)**	0.25 (0.715)
	control group	27.13 (3.17)	27.43 (3.13)	27.93 (2.68)		
	t-value, F-value (*p*)[a]	1.35 (0.181)	0.72 (0.406)	1.18 (0.280)		
	adjusted F-value (*p*)[b]	**2.69 (0.018)**	**3.36 (0.005)**	**4.73 (<0.001)**		
role limitations due to physical problems	experimental group	6.66 (1.58)	7.06 (1.13)	7.81 (0.47)	**19.04 (<0.001)**	1.79 (0.179)
	control group	6.70 (1.62)	7.00 (1.49)	7.33 (1.24)		
	t-value, F-value (*p*)[a]	0.11 (0.922)	0.00 (0.961)	2.29 (0.145)		
	adjusted F-value (*p*)[b]	1.52 (0.181)	**2.25 (0.044)**	1.48 (0.195)		
bodily pain[c]	experimental group	9.91 (1.38)	10.38 (1.16)	----	----	----
	control group	8.70 (1.58)	9.13 (1.74)	----		
	t-value, F-value (*p*)[a]	**3.21 (0.002)**	1.06 (0.311)	----		
	adjusted F-value (*p*)[b]	**6.20 (<0.001)**	**3.76 (0.002)**	----		
general health perceptions	experimental group	14.44 (3.93)	16.06 (2.95)	18.16 (2.73)	**40.22 (<0.001)**	**9.78 (0.001)**
	control group	13.10 (2.55)	13.70 (2.44)	14.37 (2.82)		
	t-value, F-value (*p*)[a]	1.60 (0.122)	**4.72 (0.034)**	0.45 (0.517)		
	adjusted F-value (*p*)[b]	**3.01 (0.010)**	**3.82 (0.002)**	**5.05 (<0.001)**		
vitality	experimental group	15.41 (3.88)	17.03 (3.49)	18.72 (2.49)	**46.05 (<0.001)**	1.09 (0.329)
	control group	12.47 (2.24)	13.57 (1.98)	14.90 (1.84)		
	t-value, F-value (*p*)[a]	**3.68 (0.001)**	1.44 (0.237)	0.05 (0.838)		
	adjusted F-value (*p*)[b]	**4.68 (<0.001)**	**6.45 (<0.001)**	**10.15 (<0.001)**		
social functioning	experimental group	8.94 (1.61)	9.25 (1.37)	10.03 (1.03)	**37.69 (<0.001)**	1.67 (0.193)
	control group	8.07 (1.17)	8.73 (1.20)	9.10 (1.03)		
	t-value, F-value (*p*)[a]	**2.45 (0.025)**	0.02 (0.908)	1.35 (0.251)		
	adjusted F-value (*p*)[b]	**3.36 (0.005)**	**2.87 (0.013)**	**3.64 (0.003)**		
role limitations due to emotional problems	experimental group	4.81 (1.15)	5.31 (0.90)	5.88 (0.34)	**74.07 (<0.001)**	**6.05 (<0.001)**
	control group	3.33 (0.61)	4.13 (1.01)	5.23 (0.68)		
	t-value, F-value (*p*)[a]	**6.40 (0.001)**	**5.01 (0.037)**	**10.37 (<0.001)**		
	adjusted F-value (*p*)[b]	**5.47 (<0.001)**	**5.24 (<0.001)**	**4.51 (0.001)**		
general mental health	experimental group	19.38 (4.30)	21.53(3.57)	24.19 (2.71)	**77.41 (<0.001)**	**3.65 (0.037)**
	control group	15.87 (2.47)	17.67(1.83)	19.03 (2.14)		
	t-value, F-value (*p*)[a]	**3.97 (0.003)**	**7.85 (0.015)**	1.14 (0.298)		
	adjusted F-value (*p*)[b]	**6.79 (<0.001)**	**9.01 (<0.001)**	**12.92 (<0.001)**		
reported health transition	experimental group	3.00 (1.22)	3.56 (1.01)	4.19 (0.86)	**34.43 (<0.001)**	**3.26 (0.042)**
	control group	2.43 (0.63)	2.63 (0.67)	3.07 (0.45)		
	t-value, F-value (*p*)[a]	**2.32 (0.027)**	**7.81 (0.016)**	**5.88 (0.023)**		
	adjusted F-value (*p*)[b]	**1.22 (0.308)**	**3.13 (0.008)**	**6.53 (<0.001)**		
physical component total score	experimental group	59.13 (6.74)	62.28 (4.75)	65.50 (4.05)	**41.05 (<0.001)**	**4.78 (0.020)**
	control group	55.63 (6.04)	57.27 (5.76)	58.77 (5.59)		
	t-value, F-value (*p*)[a]	**2.14 (0.042)**	0.20 (0.667)	0.07 (0.805)		
	adjusted F-value (*p*)[b]	**6.61 (<0.001)**	**8.99 (<0.001)**	**8.70 (<0.001)**		
mental component total score	experimental group	48.53 (9.19)	53.13 (7.91)	58.81 (5.53)	**106.49 (<0.001)**	1.09 (0.329)
	control group	39.73 (4.58)	44.10 (4.11)	48.27 (4.19)		
	t-value, F-value (*p*)[a]	**4.82 (0.002)**	**5.53 (0.025)**	0.48 (0.497)		
	adjusted F-value (*p*)[b]	**6.98 (<0.001)**	**9.55 (<0.001)**	**14.74 (<0.001)**		

[a] Comparisons at end of 12th week of treatment and at end of 52nd week of follow-up are controlled for the baseline values
[b] Adjusted for gender, age, age of onset, duration of current episode, total score on Hamilton Depression Rating Scale,[9] total score on Hamilton Anxiety Rating Scale,[11] and (for 12th week of treatment and 52nd week of follow-up) baseline values of the variable
[c] Due to a recording error, the two items on bodily pain were not assessed at the time of the 52nd week of follow-up

weeks and then followed-up while using antidepressants without psychotherapy for one year have much better outcomes on a wide range of psychosocial and quality of life measures than patients who are only treated with antidepressants. After adjustment for differences in the demographic and clinician variables between groups at baseline, the greater clinical improvement in depressive symptoms in the CBT+antidepressant group was only significantly better than that in the antidepressant-only group at the end of the 12-weeks of CBT treatment. However, the greater improvement in the CBT+antidepressant experimental group versus that in the antidepressant-only control group for most of the psychosocial and quality of life measures at both the end of 12 weeks of treatment and after 52 weeks of follow-up remained statistically significant after adjusting for differences in baseline characteristics and for differences in the severity of depressive and anxiety symptoms between groups.

We randomly assigned patients to the experimental or control group, employed a wide range of measures to assess outcomes, used evaluators who were blind to the group assignment of participants, had few dropouts during the year-long study, and employed an adjusted intention-to-treat analysis. Moreover, the added benefit of providing 12 weekly sessions of group-CBT to depressed outpatients receiving regular antidepressant therapy was evident throughout the study, even one year after the CBT sessions had finished. Based on the methodological strength of the study, we conclude that our results are robust.

These findings support the results of several meta-analyses[21,22] and other clinical studies[23,24] which conclude that combined treatment of depression with antidepressants and psychotherapy is superior to treatment with antidepressants without psychotherapy. The mechanism via which psychotherapy has this adjunctive effect when combined with antidepressant medications is unknown. Some researchers[25] suggest that psychotherapy can influence the hypothalamic-pituitary-adrenal-axis (HPA-axis) and, thus, improve the diurnal rhythm of depressed individuals and enhance their susceptibility to antidepressants. More research on the biological effects of psychotherapy is needed to clarify these relationships.

4.2 Limitations

The study has several limitations. The sample size is relatively small, so some of the negative results may be due to Type II errors. The sample was purposely limited to individuals with mild depression, the mean age of participants was relatively high (52 years), and all participants came from the outpatient department of a single hospital in Shanghai, so it is unclear how representative the results are for persons with more severe depression and for younger individuals with depression. Despite using a computerized random number generator to randomize eligible subjects, patients assigned to the control group had a later age of first onset and a longer duration of the current episode of depression than patients assigned to the experimental group, so we had to used statistical methods (ANCOVA) to adjust for these unexpected differences. Moreover, we did not rigorously control the antidepressant medication used by the patients in the study, so this is one potential confounder of the results that was not considered in the analyses. Future studies should include larger samples, include cost-benefit analyses, and assess the underlying biological mechanisms of the prolonged effect of psychotherapy on the social function and quality of life of persons with depression who are being treated with antidepressant medications.

4.3 Importance

We found that 12 sessions of group cognitive behavioral therapy had a prolonged beneficial effect on the quality of life and social functioning of persons with mild depression who were being treated with antidepressant medications. In settings where depression is common and psychotherapists are few, the addition of group psychotherapy is an economical way to maximize the treatment effects of antidepressant medications.

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Conflict of interest statement

The authors report no conflict of interest.

Informed consent

Every patient who participated in this study signed a consent form at the beginning of the study.

Ethical review

The study has been approved by the Shanghai Kangping Hospital Institutional Review Board (number: 2013001).

Authors' contributions

BZ developed and implemented the research plan, and wrote up the manuscript; XD supervised the data collection; JZ , QL, and ZY assisted in the data analysis; and all authors reviewed and approved the final manuscript.

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团体认知行为治疗对轻度抑郁症患者生活质量及社会功能的作用

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背景：有关中度至重度抑郁症的一些研究表明，联合使用认知行为治疗 (cognitive behavioral therapy, CBT) 与抗抑郁药物的效果优于单独使用 CBT 或抗抑郁药物。很少研究关注团体 CBT 治疗和药物治疗对轻度抑郁症患者的效果。

目标：评估联合使用团体 CBT 治疗与抗抑郁药物对轻度抑郁患者生活质量及社会功能的影响。

方法：我们将 62 例轻度抑郁症患者随机分为对照组 (n=30) 与干预组 (n=32)，对照组予以抗抑郁药物治疗 12 周，干预组予以抗抑郁药物合并团体 CBT 治疗 12 周；此后，两组均持续药物治疗 1 年。在治疗后 12 周和一年随访结束时，对所有被试采用盲法进行汉密顿抑郁量表中文版 (Chinese versions of the Hamilton Depression Rating Scale)、汉密顿焦虑量表 (Hamilton Anxiety Rating Scale)、社会功能缺陷筛选量表 (Social Disability Screening Schedule)、生活满意度评定量表 (Life Satisfaction Rating)、多维社会支持感知 (Multidimensional Scale of Perceived Social Support) 和简明健康调查量表 (Short Form Health Survey) 的评估。

结果：重复测量的方差分析显示，治疗期间两组的抑郁和焦虑症状均明显改善，联合 CBT 与抗抑郁药物治疗的干预组的改善更大。几乎所有的社会功能、社会支持和生活质量评估同时表明 CBT 合并抗抑郁药物组比单用抗抑郁药物组的改善显著更多。此外，即使采用的协方差分析调整了基线时的人口学差异和临床特征以及随时间推移的抑郁和焦虑严重程度的变化差异，CBT 合并抗抑郁药物组在团体治疗后 12 周和团体治疗结束后的一年后都比单用抗抑郁药物组的改善更为明显，且有统计学差异。

结论：单用抗抑郁药物或联合抗抑郁药治疗和团体 CBT 治疗都可以有效地改善轻度抑郁症患者的社会功能、生活质量和健康功能。然而，合并药物治疗和团体 CBT 治疗优于单用抗抑郁药物治疗，而且这些效益可以在 CBT 疗程结束后持续至少长达 1 年。

关键词: 团体治疗; 认知行为治疗; 抑郁症; 生活质量; 社会功能; 中国

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