Transdiagnostic Cognitive Behavioural Treatment and the impact of comorbidity: An open trial in a cohort of primary care patients

Running title: Transdiagnostic CBT: Impact of comorbidity

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Background: The development of initiatives to improve access to psychological therapies has been driven by the realisation that untreated anxiety and depression are both very common and costly to individuals as well as society. Effective and efficient treatments, mostly in the form of cognitive behavioural therapies (CBT), can be used in ways which enhance their acceptability and accessibility. Up to date, numbers of group therapies have been developed to improve cost efficiency, but in spite of growing interest in transdiagnostic approaches, group therapies have so far mostly been diagnosis specific.

Aims: This study aimed at evaluating a brief transdiagnostic cognitive behavioural group therapy (TCBGT) designed to treat both anxiety and depression among patients in primary care.

Method: The participants were 287 adult patients in primary care with diagnoses of depression and/or anxiety disorders. They underwent a five week TCBGT. A mixed design ANOVA was used to evaluate differential effects of treatment according to diagnostic groups (anxiety vs. depression) and number of diagnoses (comorbidity).

Results: Pre-post differences were significant and the treatment was equally effective for both anxiety disorders and depression. Number of diagnoses did not affect the outcome.

Conclusions: The study indicates feasibility of the brief transdiagnostic group therapy for a wide range of mood- and anxiety disorders in primary care. The results indicate that low intensity, brief transdiagnostic group therapies may be a feasible way to improve access to psychological therapies for a large number of patients.

Key Words: depression, anxiety, cognitive behavioural therapy, transdiagnostic therapy

Background

The development of initiatives to improve access to psychological therapies has been driven by two main factors. Firstly, the realisation that untreated anxiety and depression are both very common and costly to individuals as well as society. Secondly, effective and efficient treatments, mostly in the form of cognitive behavioural therapies (CBT), can be used in ways which enhances their acceptability and accessibility (1–4). The systematic application of CBT to a range of common mental health problems has been found to be both clinically effective and cost-effective (2,5–8).

At lower intensities of treatment, there remain important unresolved issues on how best to deliver the range of programmes which constitute CBT for different diagnostic groups and services such as the Improving Access to Psychological Therapies (IAPT) in the United Kingdom (UK). The IAPT project is based on allocating diagnoses, then offering diagnosis-specific interventions in which the practitioners have been appropriately trained and for which they receive supervision (9). However, such an approach remains costly, and it has more recently been suggested that the development of purposeful transdiagnostic CBTs, (TCBT), which could be used across a range of anxiety disorders and depression, might further improve efficiency and accessibility of evidence-based treatments (10–12). However, there is as yet only limited evidence for the efficacy of such approaches.

Research has time and again demonstrated the efficacy of CBT in the treatment of both depression and anxiety disorders (5,8) and therefore clinical guidelines propose that the first treatment of choice should be CBT delivered in primary rather than secondary care (13–16). Efficiency in treatment can be achieved through the use of group therapies, particularly in the earlier stages of "stepped care". Such therapies have been found to be effective in the context of diagnostically homogenous samples (17). However, setting up such services in primary

care can be difficult and impractical because gathering people with the same kind of mental disorders, such as Obsessive Compulsive Disorder (OCD), into OCD groups, can take too long time (12,18). This can lead to an unacceptable time lag from referral or worse still, these specific groups may never even take off. Furthermore, many patients in primary care are diagnosed with more than one mental disorder at the same time, or on average 2.1 disorders per patient (19) and specific CBTs do not necessarily benefit patients with multiple diagnoses as much as those with one disorder (20). Even though there is evidence to suggest that if patients are treated for their main diagnosis, the rate of co-morbid diagnoses decreases following treatment (21,22).

Since 2005, patients with different common disorders in primary care in Iceland have been offered a brief cognitive behavioural group-therapy, i.e. transdiagnostic therapy. TCBT has been defined as CBT that applies similar, or the same, underlying treatment principles for different psychiatric disorders (23–25) since the same or similar underlying maintenance processes are assumed (24,26) Proposed maintenance processes targeted in the treatment studied are cognitive biases and interpretation errors, fuelled by negative core beliefs, dysfunctional attitudes and assumptions. McEvoy, Nathan and Norton (11) argue on *a priori* grounds that transdiagnostic treatment is the most cost effective form of treatment for primary care, although there is as yet little evidence for such a claim. The extent to which economies of scale are balanced by loss of definition in treatment is as yet unknown and needs to be researched.

The majority of published TCBT outcome studies have been carried out on transdiagnostic anxiety groups where patients with various anxiety disorders are treated with the same protocol (27–32). There have been five outcome studies where patients with anxiety

and/or depression were treated in transdiagnostic groups. Manning et al. and Hooke and Page (33) examined the outcome of an intensive two week-long transdiagnostic cognitive behavioural group therapy (TCBGT) for patients with what they refer to as "neurotic" or "affective" mental disorders, apparently corresponding to anxiety and depressive disorders, respectively. Statistically and clinically significant improvements were found on all measures and these were maintained for a year, with no statistically significant differences between "neurotic" and "affective" groups. McEvoy and Nathan (30) evaluated a 10 week TCBGT for patients with depression and/or anxiety disorders. Outcomes were good and comparable for all groups of patients, depressive, anxious, and those patients suffering from both depression and anxiety disorders. Wuthrich and Rapee (34) examined the effectiveness of a 12-week (24 hours) TCBGT for older adults. A significant difference was found on the mean improvement between participants who underwent TCBGT and participants on a wait list on self-report measures of anxiety and depressive symptoms. Finally Ejeby et al. (35) examined the effectiveness of a 12-week (24 hours) TCBGT for people with common mental health problems in primary care compared with Care As Usual (CAU) and Multi Modal Intervention (MMI). Participants in the MMI group improved significantly more than those in the TCBGT and CAU groups, but the TCBGT participants improved significantly more than CAU participants.

In transdiagnostic treatment, it is proposed that if patients are encouraged to apply general strategies, for example using thought charts, to rate their emotional experience, they will be more able to cope with the different problems they face. In that respect transdiagnostic treatment may be more efficient in treating co-morbid conditions than disorder-specific treatment (32,36,37). Questions have been raised though, regarding the possible limitations of TCBT in treating highly comorbid patients. Ericson, Janeck and Tallman (38) for instance

believe that the approach is not suitable for people with more than two comorbid disorders, but no evidence supports their claims.

Aims

In the present study the outcome of a brief (five week) TGCBT was examined for a range of anxiety disorders and depression. The aim of this open trial was to test the following three hypotheses regarding treatment feasibility and effectiveness in a routine clinical setting in primary care: 1) patients are responsive to the brief TGCBT relative to their own baseline, 2) the treatment is effective for patients with a wide range of common mental disorders, 3) types of symptoms (depressive vs. anxiety symptoms) are differently affected by the treatment and 4) the treatment is more effective for those who have diagnoses of one or two disorders than more than two disorders.

Material and Methods

Settings and participants

This study is based on data from the first two years of a project were the main aim was to increase access to psychological therapies in primary care in Iceland. TCBGT was offered in six primary health care centres based on referrals from General Practitioners (GPs). Criteria for referral were signs of emotional problems based on GP's clinical evaluation and being over 18 years of age. Exclusion criteria for treatment were: 1) presence of symptoms suggesting current psychotic condition as evaluated by a GP or a clinical psychologist

administering the MINI-International Neuropsychiatric Interview (M.I.N.I.) (see below), 2) current self-reported substance abuse or substance dependence, as evaluated by a GP or a clinical psychologist administering the M.I.N.I., and 3) obvious signs of dementia or another generalized cognitive impairment. A control group was also recruited including patients who received treatment as usual, but the attrition rate was very high so the data was not used in this analysis.

In total 441 participants attended the treatment during these two years, 77 men (17.5%) and 364 women (82.5%). The mean age was 39.7 years (SD 13.1, range 18 – 88 years).

To be included in the study, patients had to meet the diagnostic criteria for one or more mood and/or anxiety disorder according to the M.I.N.I. and to have scores above cut-off on at least one of the following instruments, the Beck Depression Inventory, the Beck Anxiety Inventories (BDI-II and BAI) and the Clinical Outcomes in Routine Evaluation – Outcome Measure (CORE-OM) (see description of all measures below). This gave a total of 287 participants of whom 281 attended at least one treatment session. All subsequent intention-to-treat analyses were based on this number.

********** Figure 1 about here**********

As Figure 1 shows, 281 patients were included in the data analysis, 41 men (14.6%) and 240 women (85.4%). The mean age was 38.5 years (SD=12.89, range 18 – 88 years). Only 6.4% had some prior experience of CBT, but forty-six per cent were receiving psychotropic drugs whilst in treatment. While stabilisation with medication was not an inclusion criteria, GPs were instructed not to increase the medication prior to or during treatment to control as best as possible for potential gains of medication. The average number of diagnoses per participant was 2.0

disorders (SD=1.0, range: 1-6 disorders). Of the 283 participants, 92 had one diagnosis, 92 had two diagnoses, 54 had three diagnoses, 25 had four diagnoses and 20 had more than four diagnoses.

Measures

The primary outcome measure, CORE-OM, was pre-defined to test for changes in general psychopathology. The scale is divided into four subscales, well-being (*I have felt O.K. about myself*), function (*I have felt terribly alone and isolated*), problems (*I have felt tense, anxious or nervous*) and risk (*I have been physically violent to others*). The CORE-OM gives two total scores. The mean of all items indicates general distress and the mean of all items except the risk items (non-risk items) is also a measure of general distress, but less polluted by the risk items and thus considered to be a clearer indication of distress on a group basis, since patients can suffer a lot without being suicidal. The items are scored on a Likert scale ranging from 0 – 4 and for easy comparison between scales and total scores the means of the total scale, non-risk items and all subscales are computed. Each outcome reported is therefore on a scale from 0 – 4. Benchmark for "improvement in CORE-OM is reduction of 0.5 points or more (39) The non-risk items were used as the primary outcome measure for this study. The reliability and validity of the Icelandic translation of the CORE-OM is good and it seems to be feasible for trials of transdiagnostic treatments (40). The CORE-OM was administered in the intake interview, the last therapy session, and at three months follow-up.

Secondary outcome measures, pre-defined to test changes in general psychopathology, included the BDI-II (41) and the BAI (42) The reliability and validity of the Icelandic translations of the BDI-II and the BAI are good (43,44). The BAI and the BDI-II were administered in the intake interview, the first, third and the last therapy session, and at three month follow up.

The M.I.N.I. (45), which is a short structured diagnostic interview of mental disorders, was administered in the intake interview. The Icelandic version of the M.I.N.I. has not yet been extensively studied although one preliminary study gives support to its validity (46). The English version of the M.I.N.I. has shown excellent reliability (47). Table 1 lists the M.I.N.I. diagnostic categories and frequencies for each category.

**********Table 1 about here**********

Procedure

If a GP believed, after a clinical evaluation, that a patient had mild to moderate depression and/or anxiety and did not meet the exclusion criteria, the patient could be referred to the brief transdiagnostic cognitive behavioural group therapy.

All the patients referred to the therapy were thoroughly assessed, by a clinical psychologist that delivered the treatment, in an intake interview with the M.I.N.I. and the psychological scales. If the patient did not meet the exclusion criteria he or she was offered the opportunity to participate. All the psychologist that ran the treatment were working at the psychiatry ward at Landspitali – The National University Hospital of Iceland and were trained CBT therapists. Their work experience as clinical psychologist ranged between one and 20 years. The psychologist were supervised byan experienced psychologist who was also one of the authors of the treatment manual. The supervisor assesed the treatment fidelity through the psychologist‘s self report.

Permission for the study was obtained from the National Bioethics Committee in Iceland (VSNb2005090003/03-15) and the study was approved by the Icelandic Data Protection Authority (S2602/2005).

Intervention

The brief transdiagnostic cognitive behavioural group treatment offered in the study had been in development for a few years at the outpatient unit at the Mental Health Services at Landspitali – The National University Hospital of Iceland. The goal of the treatment strategy developed was to include components that disorder specific treatment protocols had in common.

The treatment was delivered by two qualified clinical psychologists at each primary care setting weekly for two hours for five weeks. The psychologists were all working at the Mental Health Services at Landspítali – The National University Hospital of Iceland. They were all thoroughly familiarised with the treatment manual and the psychoeducational material at Landspítali were they delivered the treatment at least once with another therapist already experienced with the manual, before delivering it in Primary Care. In addition, all therapists involved in the study were supervised on a peer group basis once a week in order to monitor treatment fidelity. Mean group size was 14.86 patients (range 7 – 25). In the effort to increase public access to CBT in primary care it was deemed important to reach a large number of patients. To that end the treatment was mainly structured around psychoeducation to manage larger groups. The upper group size limit could therefore be as high as 25 although in some centres it was limited by the size of the facilities. The main components of the treatment are shown in Table 2.

*********Table 2 about here********

Statistical analysis

Four analyses using a mixed model ANOVA were carried out, all of them testing the first hypothesis (that patients respond positively to the TCBGT relative to their own baseline). The first analysis was a 4x2 repeated measures intention-to-treat (ITT) ANOVA, to assess changes in distress following treatment as measured by the CORE-OM non-risk items in the different diagnostic groups grouped in the following way; 1) Major Depressive Disorder (depression), 2) any anxiety disorders covered in the M.I.N.I. (anxiety), 3) Major Depressive Disorder with any comorbid anxiety disorder covered in the M.I.N.I. (depression plus anxiety) and 4) any two or more co-occurring anxiety disorders covered in the M.I.N.I. (anxiety plus anxiety). Diagnostic group (anxiety, anxiety plus anxiety, depression and depression plus anxiety) was the grouping variable and the pre-post comparison was the within-subjects factor. This model tested the first and the second hypotheses with the primary outcome measure. The second model was a 4x2x2 repeated measures ITT ANOVA, to assess changes in depression and anxiety symptoms as measured by the BDI-II and the BAI following treatment. The diagnostic group (anxiety, anxiety plus anxiety, depression and depression plus anxiety) was the grouping variable, depression and anxiety symptoms (i.e. scores on the BDI-II and the BAI) was the first within-subjects' factor (where the participants depression scores were compared to their anxiety scores in order to find if patients respond differently on the two scales) and the pre-post comparison the second within-subjects factor. This model tested the first, second and third hypothesis with the secondary outcome measures.

To test the fourth hypothesis, that the treatment is more effective for patients with one or two disorders than patients with more than two disorders, these two analyses were modified by grouping the participants by number of diagnoses rather than diagnostic categories. Two groups were compared, one consisting of participants with one or two diagnoses, the other one with patients with three or more diagnoses. The resulting analyses

were a 2x2 and a 2x2x2 repeated measures ANOVAs both testing the first and fourth hypothesis with the primary and the secondary outcome measures respectively and the 2x2x2 repeated measures ANOVA assessing the third hypothesis again in relation to comorbidity instead of type of diagnosis.

Effect sizes were calculated with the formula: $d = (M_{pre} - M_{post})/ \sigma_{pooled}$ (48)

Results

Descriptive statistics

Table 3 shows descriptive statistics, 95% CI and effect sizes, for the total sample and by both grouping variables used in the study. Participants who were diagnosed with both depression and anxiety scored higher on all the pre-treatment measures (BDI-II: 28.74, BAI: 23.46, CORE-OM: 2.16) than those who were diagnosed with anxiety alone, depression alone and those with two or more anxiety disorders (anxiety + anxiety) (>0.001), except for those with two or more anxiety disorders on BAI ($p>0.05$). Participants diagnosed with anxiety scored lowest on the BDI-II (17.32) and the CORE-OM non-risk items (1.47) at baseline and those diagnosed with depression only scored lowest on the BAI (16.40). Those diagnosed with three or more disorders scored higher on all outcome measures than those diagnosed with fewer disorders, both before ($p<0.001$) and after treatment ($p<0.001$). After the treatment 28% of participants had improved according to the CORE-OM criteria for improvement.

*****Table 3 here******

Diagnostic groups

CORE-OM non-risk items

The ITT 4x2 repeated measures ANOVA for the CORE-OM non-risk items detected significant main effects of time ($F[1,277]=34.3$, $p<0.001$) and group ($F[3,277]=18.25$, $p<0.0001$), but no interaction between group and time ($F[3,277]=0.98$, $p=0.4$). This suggests that the treatment leads to significant reduction of distress, that comorbidity groups differed in overall level of distress both before and after treatment, but did not respond differentially to treatment. The results therefore support hypotheses 1 and 2.

BDI-II and BAI

The ITT 4x2x2 ANOVA detected significant main effects of depression and anxiety symptoms, as measured by the BDI-II and the BAI ($F[1,277]=20.93$, $p<0.001$), and time ($F[1,277]=69.53$ $p<0.001$), but no interaction between diagnostic groups and time ($F[3,277]=0.89$, $p=0.44$) or depression and anxiety symptoms and time ($F[1,277]=1.76$, $p=0.19$). This suggests that depression and anxiety symptoms changed following treatment and the different diagnostic groups were similarly responsive to treatment. Participants responded similarly on both depression (BDI-II) and anxiety (BAI) symptoms. These findings suggest that the patients were responsive to the treatment (supporting hypothesis 1), and that the treatment was effective for patients with a wide range of common mental disorders (supporting hypothesis 2) and finally that the different types of symptoms as measured with BDI-II and BAI responded similarly to the treatment (rejecting hypothesis 3)

Effect sizes

Effect sizes for all group differences and all measures were calculated (Table 3). Effect sizes ranged from 0.29 to 0.85, smallest for the participants with anxiety on the CORE–OM non-risk items and the largest for the participants with depression on the BDI-II.

Number of diagnoses

CORE-OM non-risk items

In order to test whether the treatment was more effective for patients with two or fewer diagnoses than patients with more than two comorbid diagnoses (hypothesis 4) an ITT 2x2 ANOVA was carried out. The results showed significant main effects of time ($F[1,279]=54.64$, $p<0.001$), but no interaction between group and time ($F[1, 279]=1.14$, $p=0.29$). The results support of hypothesis 1 but reject hypothesis 4. This suggests that distress changed during the treatment and that participants diagnosed with three or more disorders were similarly responsive to treatment as participants with one or two disorders.

BDI-II and BAI

The ITT 2x2x2 ANOVA detected significant main effects of depression and anxiety symptoms ($F[1,279]=31.86$, $p<0.001$) and time ($F[1,279]=97.69$ $p<0.001$), but no interaction between number of diagnoses and time ($F[3,279]=0.33$, $p=0.57$) or depression and anxiety symptoms and time ($F[1,279]=2.54$, $p=0.112$). This suggests that depression and anxiety symptoms changed following treatment and that participants with three or more disorders were similarly responsive to treatment as participants with one to two disorders. Participants responded similarly on both depression (BDI-II) and anxiety (BAI) symptoms. These findings suggest that the patients were responsive to the treatment (supporting hypothesis 1) and that the treatment was equally effective for patients with more than two disorders as it

was for patients with two disorders or fewer (not supporting hypothesis 4) and that the participants responded similarly to types of symptoms measured (not supporting hypothesis 3).

Discussion

The patients receiving the brief TGCBT improved on all measures following treatment, relative to their own baseline and regardless of their main diagnoses. There was no evidence that participants with more than two diagnoses benefitted less than those with two or fewer diagnoses.

These results are comparable to the findings of McEvoy and Nathan (49) in terms of responses across diagnoses. At least for the depressive patients the effect sizes were large (0.85) as in the McEvoy and Nathan study (1.20). However, in the present study the treatment groups were larger and the treatment was briefer.

The present study differed from the previous studies in statistical analyses, because we used Intention-to-treat analysis (ITT), with the last observation carried forward, in contrast to per protocol analysis in the previous studies. ITT is a more conservative method used specifically in order to minimize the risk of over-interpreting treatment effects. Recent evidence from studies, where both weekly and pre-post measures were used, indicates that non-availability of post-treatment measures does not occur at random, with the effect size for participants who complete both pre- and post-treatment data being almost double that of those who did not provide end of treatment data (9). This underscores the importance of ITT in estimating treatment effects.

Erickson, Janeck and Tallman (18) argued, from the perspective of clinical experience, that transdiagnostic treatment would not be feasible for patients diagnosed with more than two distinct disorders and should therefore not be administered to such patients. However, the results from the present study suggest that participants diagnosed with three or more disorders were similarly responsive to the treatment as participants with one or two disorders. The scores on the psychological scales, however, were somewhat higher in the group diagnosed with more than two disorders, both before and after treatment. The post treatment scores were in the moderate range of depression so the patients were not entirely symptom free. It could therefore be argued that such patients may still need additional booster sessions or longer and perhaps more specific treatment.

Clark and Taylor (38) have suggested that transdiagnostic therapy may be a good choice to start with and that such an approach is consistent with the IAPT "low intensity" strategy. It is the nature of transdiagnostic treatments to teach generic skills, and those skills may prove helpful when patients are referred to more disorder-specific treatments. This however is an empirical question that needs to be evaluated further.

A final point is worth noting. When the treatment effects in the present study are compared with regard to types of symptoms, there are signs of the treatment having a greater impact on depressive symptoms than symptoms of anxiety. This may not come as surprise when the protocol is examined in detail (see Table 2). The protocol is rather focused on automatic thoughts and re-evaluations, partly in the context of cognitive biases, although behavioural activation is also encouraged in the psychoeducation. There is not, however, a prominent part dealing with behavioural experiments and testing these thoughts and evaluations, which is assumed to be an important ingredient in order to deal with threat appraisals and avoidance and other behavioural characteristics of anxiety. It is therefore of interest to modify the protocol to ensure that anxiety symptoms will be better targeted.

Clearly the study was an open trial with patients selected for referral by their GPs in the simplest way possible. Caution is therefore needed in terms of sampling (for example unequal gender balance affecting the generalizability), absence of a control group (limiting the internal validity) and unequal group sizes (reducing the power of the statistical analyses conducted). In particular the insignificant interaction effects should be interpreted with caution. Also, it is worth mentioning that the patients' comorbid symptoms were quite severe and therefore they are likely to demonstrate to some degree of regression towards the mean. The results should be interpreted with that in mind. However, it is also in the nature of the services involved that retention in the study was particularly high and the evidence indicates that almost all patients showed good response to rather low doses of treatment. It is in the nature of the way the treatment was embedded in the primary care that participants are likely to be representative of the population as a whole. Furthermore, attrition rate may have been so low because it was being offered in the context of the main healthcare provider and almost all alternatives were less accessible.

As the measures used to evaluate the transdiagnostic treatment were themselves general measures (i.e. non-specific to diagnosis), we do not know what impact the treatment had on disorder specific symptoms beyond depressive symptoms. It is possible that general distress changed as a result of the therapeutic interventions, but symptoms and behaviours, very specific to individual diagnoses, such as rituals in OCD, avoidance in Posttraumatic Stress Disorder (PTSD) or worries in GAD, may or may not have changed. Future research on transdiagnostic approaches must examine these factors to ensure that treatment properly meets the needs of all diagnoses.

Conclusion

It can be tentatively conclude that the brief 5 week TCBGT is effetive, there is evidence that the treatment is effective for both anxiety disorders and depression and that number of diagnoses does not affect outcome. However, it is not clear whether the treatment has effect on disorder specific symtoms because these were not measured.

Disclosure Statement: The authors declare that they have no competing interests.

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Table 1. The M.I.N.I. diagnostic categories and frequencies in pooled clinical sample.

Disorder	Time frame	Frequencies (%)
Major depressive episode	Current (2 weeks), Recurrent	45
		30
MDE with melancholic features	Current (2 weeks)	19
Dysthymia	Current (2 years)	18
Suicidality	Current (past month)	44
Manic episode	Current, Past	2
Hypomanic episode	Current, Past	2
Panic	Current (past month), Lifetime	8
Agoraphobia	Current	3
Social phobia	Current (past month)	31
OCD	Current (past month)	7
PTSD	Current (past month)	7
Alcohol dependence	Past 12 months	8
Alcohol abuse	Past 12 months	1
Substance dependence (Non alcohol)	Past 12 months	2
Substance abuse (Non alcohol)	Past 12 months	0
Psychotic	Current	0
	Lifetime	
Mood disorder with psychotic features	Current	1
Anorexia nervosa	Current (past 3 months)	0
Bulimia nervosa	Current (past 3 months)	2
GAD	Current (past 6 months)	44
Antisocial personality disorder	Lifetime	3

Table 2. The treatment‘s main objectives and homework assignments.

Session	Main objectives	Homework
1.	Introduction to group rules. Psychoeducation about depression, anxiety and basic principles of CBT	Personal treatment goals.
2.	Review of samples of homework. Introduction to the relationship between thoughts, emotions and behaviour and negative automatic thoughts.	Three levels thought chart and daily activity chart Aim: To identify distorted and negative automatic thoughts.
3.	Review of samples of homework. Introduction to cognitive distortions and the concept of alternative thoughts.	Thought chart. Aim: To identify distorted thoughts and generate alternative thoughts.
4.	Review of samples of homework. Work with alternative thoughts as well as introduction of underlying assumptions and core beliefs.	Thought chart. Aim: To identify distorted thoughts and generate alternative thoughts.
5.	Review of samples of homework. Review the techniques that have been introduced. Address barriers to the application of the techniques. Relapse prevention.	
Follow up booster session. 3 months post treatment.	Open discussion.	

Table 3. Descriptive statistics, confidence intervals, and effect sizes on all the outcome measures by diagnostic groups and number of diagnoses.

Group	BDI-II				BAI				CORE-non risk items			
		95%CI				95% CI				95% CI		
	Mean (SD)	Lower	Upper	Cohen's d	Mean (SD)	Lower	Upper	Cohen's d	Mean (SD)	Lower	Upper	Cohen's d
By diagnostic group												
Anxiety[1] (N=52)												
Pre	17.32 (7.07)	14.96	19.67	0.42	17.52 (9.05)	14.45	20.59	0.56	1.47 (0.49)	1.31	1.63	0.29
Post	14.06 (8.56)	11.12	17.00		12.53(8.88)	9.57	15.5		1.31 (0.63)	1.12	1.5	
Anxiety+ anxiety[2] (N=25)												
Pre	18.60 (6.62)	15.2	22.00	0.68	17.56 (10.95)	13.13	21.99	0.39	1.64 (0.61)	1.41	1.87	0.42
Post	13.88 (7.28)	9.64	18.12		13.58(9.63)	9.29	17.85		1.39 (0.59)	1.12	1.7	
Depression[3] (N=59)												
Pre	24.70 (9.25)	22.49	26.91	0.85	16.40 (10.46)	13.51	19.28	0.48	1.84 (0.62)	1.58	1.93	0.63
Post	16.39 (10.25)	13.63	19.15		11.61 (9.69)	8.82	14.39		1.49 (0.49)	1.22	1.62	
Depression+ anxiety[4] (N=145)												
Pre	28.74 (9.16)	27.39	30.15	0.59	23.46 (12.27)	21.7	25.3	0.41	2.16 (0.65)	2.06	2.25	0.45
Post	22.46 (12.01)	20.7	24.22		18.51 (12.08)	16.74	20.29		1.85 (0.73)	1.74	1.97	

By number of diagnoses

1 - 2 diagnoses (N=197)

Pre	23.05 (9.50)	21.74	24.37	0.54	17.91 (10.47)	16.36	19.45	0.44	1.78 (0.61)	1.69	1.86	0.39
Post	17.16 (12.41)	15.61	18.71		13.34(10.25)	11.84	14.85		1.52 (0.72)	1.42	1.63	

3 plus diagnoses (N=84)

Pre	29.22 (9.06)	27.19	31.25	0.58	26.19 (12.30)	23.80	28.58	0.45	2.24 (0.59)	2.12	2.38	0.52
Post	22.95 (12.41)	20.56	25.35		20.71(11.90)	18.39	23.04		1.90 (0.74)	1.75	2.06	

Total (281)

pre	24.88 (9.78)	23.73	26.03	0.57	20.35 (11.65)	18.98	21.72	0.42	1.92 (0.64)	1.84	2.00	0.42
post	18.87 (11.37)	17.53	20.21		15.52 (11.26)	14.20	16.84		1.64 (0.75)	1.55	1.73	

1. Only one anxiety disorder according to the M.I.N.I. 2. Two or more anxiety disorders according to the M.I.N.I. and no mood disorder. 3. Only one depression disorder according to the M.I.N.I. 4. Depression and anxiety disorder according to the M.I.N.I.

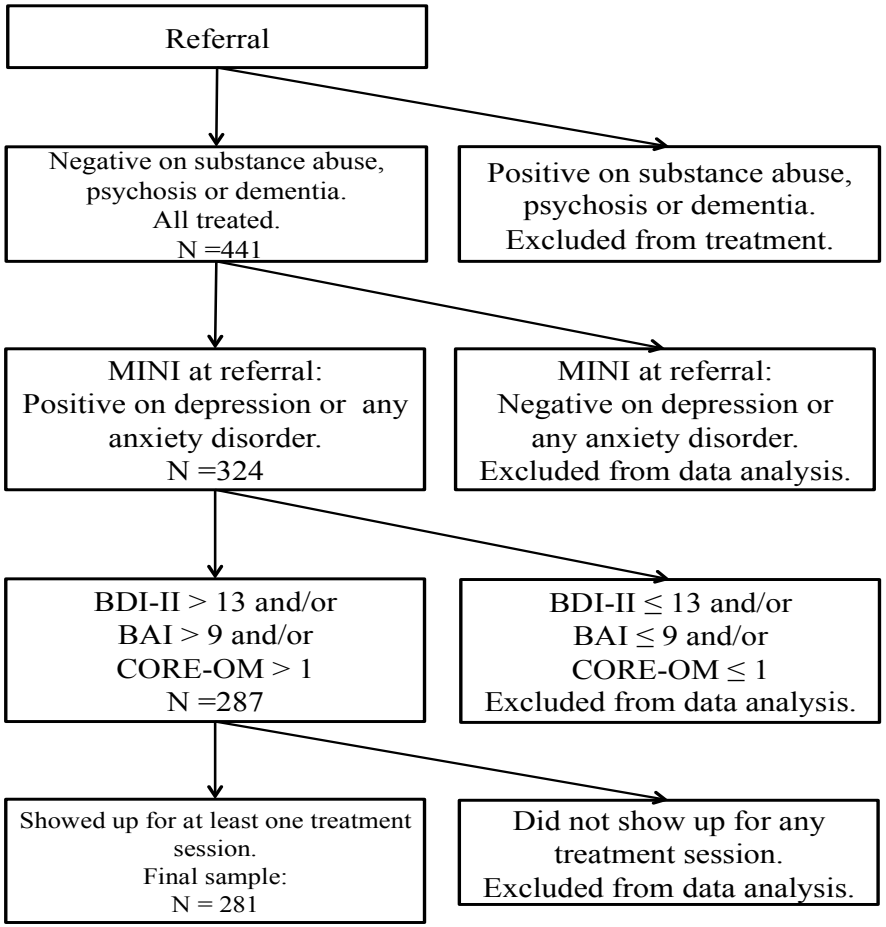

Figure 1. Flow chart of the referral process.