

Effectiveness of brief group transdiagnostic therapy for emotional disorders in primary care: A randomized controlled trial identifying predictors of outcome

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Abstract

Brief transdiagnostic psychotherapy is a possible approach for emotional disorders in primary care. The objective of the present randomized controlled trial was to determine its effectiveness compared with the treatment as usual based on pharmacological interventions in patients with mild/moderate symptoms. In addition, emotional regulation strategies and cognitive factors were studied as potential predictors. Participants ($N = 105$) were assigned to brief group therapy based on the Unified Protocol ($n = 53$) or treatment as usual ($n = 52$). They were assessed before and after the interventions. Mean differences and stepwise regression analyses were performed. Brief group transdiagnostic psychotherapy was more effective than medication in reducing all clinical symptoms ($p = .007$ for generalized anxiety; $p = .000$ for somatization; $p = .000$ for panic disorder; and $p = .041$ for depression) and in modifying emotional regulation strategies and cognitive processes ($p = .000$ for cognitive reappraisal, expressive suppression, worry, rumination, and metacognition) with moderate/high effect sizes. Besides, it was found that these variables acted as predictors of the therapeutic change. It is concluded that brief therapies could be an accurate treatment for mild/moderate emotional disorders in primary care due to their cost-effective characteristics.

Keywords: Anxiety; Depression; Brief psychotherapy; Cognitive behavior therapy; Primary Care; Randomized Controlled Trial

Clinical or methodological significance: This study demonstrates the superiority of brief transdiagnostic psychotherapies for emotional disorders compared with medication in primary care, which is usually the only available intervention in that setting. Not only they are more effective in decreasing clinical symptoms, but also in modifying the underlying mechanisms that might explain the development and maintenance of emotional disorders. Therefore, these types of psychological treatments could be disseminated in primary care with the objective to reach more patients in less time with a considerable cost reduction.

1. Introduction

Emotional disorders (EDs) are characterized by the experience of intense and frequent negative emotions and an aversive reaction along with any kind of effort to escape or avoid them (Bullis et al., 2019). They mainly include DSM-5 (APA, 2013) diagnoses of depression, anxiety and somatoform disorders, although other potential diagnoses

might also be considered. There is a global concern about EDs since they are the most frequent mental disorders worldwide (WHO, 2017). In fact, health systems face an alarmingly increase of them (Chisholm et al., 2016). Scientific research indicates psychological therapies as the treatment of choice for EDs (NICE, 2011; Watts et al., 2015). Although medication is recommended for severe cases, its use in patients with mild/moderate symptoms is usually unnecessary (Moreno & Moriana, 2012). However, most of the patients with non-severe EDs are treated exclusively with pharmacological interventions in primary care (PC), which might yield in risks for their health (NICE, 2011). Despite the need of applying scientific knowledge in clinical practice (Gálvez-Lara et al., 2018; Moriana et al., 2017), there is a gap between science and real therapeutic contexts (Gálvez-Lara et al., 2019a).

With the objective of being able to provide evidence-based therapies within health systems, the adaptation of psychological treatments to an abbreviated format is an emerging possibility (Shepardson et al., 2016). They have proven to reduce anxiety and depressive symptoms (Cape et al., 2010) and to obtain similar results to manualized and longer psychological treatments (Nieuwsma et al., 2012). Moreover, the meta-analysis of Öst & Ollendick (2017) suggests the potential benefits of shifting from traditional therapies to brief ones. In this line, the review of Wakefield et al. (2020) shows the success of brief therapies within the National Health System (NHS) in the United Kingdom. Following Cape et al. (2010), brief therapies should have more than two and less than ten sessions. Furthermore, due to the high comorbidity among EDs (González-Robles et al., 2018), the transdiagnostic approach defends a dimensional conceptualization of EDs and aims to treat simultaneously their underlying characteristics (Barlow et al., 2016). The transdiagnostic treatment is especially relevant for EDs since anxiety and depressive symptoms share several psychopathological factors that can be treated effectively without a specific-disorder intervention (Sakiris & Berle, 2019). In this sense, the Unified Protocol (UP) of Barlow et al. (2014) is one of the most recognized transdiagnostic treatments for EDs and it has been successfully applied in group format (Bullis et al., 2015). Due to the cost-effective ratios and the possible reduction of wait-lists and costs, the group format might be the best option in PC (Morrison, 2001). Combining these two lines of action, the recent study of Cassiello-Robbins et al. (2020) claims the need to disseminate brief transdiagnostic interventions within health systems. In this vein, the recent trial of Corpas et al. (2021a) shows how brief group transdiagnostic

psychotherapies could be efficiently applied in PC. The main results of that study postulate the clinical equivalence of individual and group brief transdiagnostic psychotherapy for mild to moderate EDs and that both formats are superior to medication alone.

It is known that emotion regulation is a critical component in depressive and anxiety disorders (Barlow et al., 2016). The principal emotional regulation strategies are cognitive reappraisal and expressive suppression (Cutuli, 2014). It has been pointed that they should be considered during psychotherapeutic processes since patients with EDs present issues with both of them (Etkin & Schatzberg, 2011). Other important factors for the development of EDs are related to some maladaptive cognitive processes such as excessive worry, rumination and metacognitive beliefs (McEvoy et al., 2013). Indeed, research has pointed a causal relationship between cognitive processing biases and the vulnerability to both anxiety and depressive symptoms (Alloy & Rissind, 2006). In this sense, it has been argued that targeting these cognitive processes through transdiagnostic psychological treatments could help to reduce the severity of a wide range of EDs (Corpas et al., 2021b).

Considering the above, the aim of this study is to determine the differential effects on EDs of brief group transdiagnostic psychotherapy compared with pharmacological interventions. It was hypothesized that patients receiving brief psychotherapy would obtain greater clinical outcomes than patients being treated with psychotropic drugs since they would reduce more their EDs symptoms and would also remove more their diagnostic status for the different diagnoses. It was also expected that those patients treated with brief psychotherapy would change more their emotional regulation strategies and their cognitive processes. Furthermore, we aimed to explore the impact of the emotional regulation strategies and the cognitive processes as predictors of the therapeutic effect of the interventions. It was hypothesized that these variables would be related to the clinical improvement.

2. Methods

2.1. Participants

Patients were recruited between May 2020 and August 2020 via their general practitioner when they consulted for the first time in PC. Inclusion criteria included

patients aged 18-65 with mild/moderate clinical symptoms of somatoform, anxiety and/or depression disorders. Predefined cutoff points of at least one of the following self-reported measures must be met: GAD-7 \geq 5; PHQ-15 \geq 5; PHQ-PD \geq 8; PHQ-9 \geq 10 (Muñoz-Navarro et al., 2017a,b). Exclusion criteria included the presence of severe mental disorders, severe depression (PHQ-9 \geq 20), severe anxiety (GAD-7 \geq 15), recent suicide attempts, substance use disorders, and intellectual disability. Patients previously taking psychotropic drugs or receiving psychological treatments were also excluded. They were assigned randomly by an independent researcher to one of the possible interventions according to a computer-generated allocation sequence (ratio 1:1) using the OxMaR software.

2.2. Interventions

Brief Group Transdiagnostic Psychotherapy - Experimental treatment that consisted in one session of one hour per week for eight weeks delivered by clinical psychologists in Primary Care centers of Cordoba (Spain). The groups were formed of 8-12 patients per group (10 on average) that were randomly assigned and statistically homogeneous (Levene test) in variables of sociodemographic characteristics. This intervention was designed according to a brief adaptation of the UP for the transdiagnostic approach of EDs, in which every session corresponds to a different module of the UP (Gálvez-Lara et al., 2019b). We compressed and selected the more relevant aspects of those modules that originally had more than one session. The UP was developed with the intention that it could be delivered in both individual and group formats, but most of the research conducted to date is focused in an individual format (Sakiris & Berle, 2019). However, we followed the instructions of previous studies to design our intervention in a group format (Bullis et al. 2015; Cano-Vindel et al., 2021; Corpas et al. 2021a).

S1. Motivation for change. Decisional balance techniques in which the advantages and disadvantages of a change in the patient's lives through psychotherapy were discussed in order to concrete the therapeutic goals and increase commitment to treatment.

S2. *Emotional psychoeducation*. The adaptive function of emotions was explained and the patients learned to differentiate between thoughts, physical sensations and the behaviors related to those emotions. Afterwards, the concept of "emotion driven behaviors" was introduced.

- S3. *Training in emotional awareness.* Emotional awareness centered in the present without judging was taught and practiced. This consisted in being able to recognize the own emotional reactions and not automatically classify them as good or bad ones.
- S4. *Cognitive restructuring.* Typical cognitive biases and irrational beliefs related to anxiety and depressive symptoms were thought and different techniques were used to detect and modify the maladaptive ways of thinking.
- S5. *Correct avoidant behaviors.* The role of avoidant behaviors for the development and maintenance of EDs symptoms were explained. Afterward, alternative and more functional behaviors were discussed.
- S6. *Increase tolerance to physical sensations.* Several exercises, such as breathing through a straw, were performed and discussed. The aim for the patient was to get used to the typical physical sensations the emotional reactions cause.
- S7. *Emotional exposure.* Emotional habituation was developed by encouraging patients to face external and internal symptom's triggers once they were explored. This session also aimed to decrease avoidance behaviors.
- S8. *Relapse prevention.* Learned skills were reviewed and instructions to face future situations are offered. In addition, it was pointed to the patients those skills that needed more practice.

Treatment as usual (TAU) - Active comparator group where patients only received pharmacotherapy (mainly anxiolytics and antidepressants) according to the criteria of their general practitioner in PC. Consultations consisted in 5-7 minutes during two months in which symptoms were evaluated and drugs were prescribed. Adherence to the treatment was controlled by the general practitioners, who also informed about the patients that dropped out the treatment so they could be removed from the study.

2.3. Measures

Primary outcome measures

Generalized Anxiety Disorder Scale (GAD-7) (Spitzer et al., 2006). This is a widely used instrument to assess generalized anxiety in which patients rate the frequency of their symptoms during the past 15 days within a 4-point Likert scale with 7 items. Scores vary from 0 to 21 points and higher scores indicate higher anxiety. The scale has good internal consistency ($\alpha = .93$) (García-Campayo et al., 2010). It has been validated

to be used in Spanish PC with high sensitivity (.80) and specificity (.78) (Muñoz-Navarro et al., 2017b).

Patient Health Questionnaire-15 (PHQ-15) (Kroenke et al., 2002). This instrument assesses somatoform disorder. Patients rate the frequency of their somatic symptoms through 15 items with a 3-points Likert scale. Scores vary from 0-30 points and higher scores indicate higher severity.. This instrument has shown an acceptable internal consistency ($\alpha = .78$) (Montalban et al., 2010). It has been validated to be used in psychiatric outpatients (Han et al., 2000) and it has an acceptable sensitivity (.78) and specificity (.71) (Kroenke et al. 2010).

Patient Health Questionnaire-Panic Disorder (PHQ-PD) (Spitzer et al., 1999). The scale has 15 items in which patients respond affirmatively or negatively to the different panic disorder symptoms. Scores could vary between 0-15 points and higher scores indicate higher severity. This instrument has shown an acceptable internal consistency ($\alpha = .79$) (AlHadi et al., 2017). It has been validated to be used in Spanish PC with good sensitivity (.77) and specificity (.72) (Muñoz-Navarro et al., 2016).

Patient Health Questionnaire-9 (PHQ-9) (Kroenke et al., 2001). This instrument is used as a screening tool for major depression. It has 9 items and patients rate the frequency of their depressive symptoms within a 4-point Likert scale during the last 15 days. Scores vary between 0-27 and higher scores indicate higher depression severity. It has good internal consistency ($\alpha = .86$) (Kroenke et al., 2001). It has been validated to be used in Spanish PC with high sensitivity (.95) and acceptable specificity (.67) (Muñoz-Navarro et al., 2017a).

Structured Clinical Interview for DSM-5 (SCID) (First et al., 2015). It is a widely used clinical interview to diagnose mental disorders according to DSM-5 criteria. We focused on the studied disorders: generalized anxiety disorder, panic disorder, somatoform disorder and major depressive disorder.

Secondary outcome measures

Emotional Regulation Questionnaire-Cognitive Reappraisal (ERQ-CR) (Cabello et al., 2013). The instrument assesses the ability to reinterpret the situations in order to change negative emotions. It has six items that have to be answered according to a 7-point Likert scale. Scores vary from 6 to 42 points and higher scores indicate better emotional regulation. It has been recently validated and presents a good internal consistency ($\alpha = .83$) (Pérez-Sánchez et al., 2020).

Emotional Regulation Questionnaire-Expressive Suppression (ERQ-ES) (Cabello et al., 2013). The instrument assesses the tendency to repress and hide negative emotions. It has four items that have to be answered according to a 7-point Likert scale. Scores vary from 4 to 28 and higher scores indicate worse emotional regulation. The questionnaire has been recently validated and presents a good internal consistency ($\alpha = .76$) (Pérez-Sánchez et al., 2020).

Penn State Worry Questionnaire-Abbreviated (PSWQ-A) (Meyer et al., 1990; Sandín et al., 2009). It assesses the tendency to experience worry. It has eight items that have to be answered according to a 5-point Likert scale. Scores can vary from 8 to 40 and higher scores indicate higher levels of worry. It has excellent internal consistency ($\alpha = .90$) (Sandín et al., 2009). The instrument has been validated to be used in PC settings for individuals with EDs (Muñoz-Navarro et al., 2021).

Ruminative Response Scale-B (RRS-B) (Hervás, 2008). The RRS is a widely used measure for rumination and the subscale called “brooding rumination” was used here to assess the tendency to judge thoughts about one's mood. It has five items that patients have to respond according to a 4-point Likert scale. Scores can vary from 5 to 20 points and higher scores indicate higher rumination. It presents excellent internal consistency ($\alpha = .93$) (Nolen-Hoeksema, 1991). The instrument has been validated to be used in PC settings for individuals with EDs (Muñoz-Navarro et al., 2021).

Metacognition Questionnaire-NB (MCQ-NB) (Ramos-Cejudo et al., 2013; Wells & Cartwright-Hatton, 2004). The MCQ is used to assess metacognition and the subscale called “negative beliefs about uncontrollability and danger” was used in this study to evaluate the tendency to interpret one's own thoughts as dangerous. It has six items that are responded on a 4-point Likert-type scale. Scores vary from 6 to 24 and higher scores indicate higher negative beliefs. It has good ($\alpha = .78$) internal consistency (Ramos-Cejudo et al., 2013). The instrument has been validated to be used in PC settings for individuals with EDs (Muñoz-Navarro et al., 2021).

2.4. Procedure

This was a randomized controlled trial conducted in PC centers of Cordoba (Spain). It was registered in ClinicalTrials.gov with identifier NCT04489641. The study was authorized by the Ethics and Clinical Research Committee of the Ministry of Health of the Andalusian Government (Spain) with the code PSI2014-56368-R. All processes

were implemented following SPIRIT guidelines (Chan et al., 2013a,b) and the CONSORT statement (Schulz et al., 2010). Participants provided written informed consent before their inclusion in the study. Participants were evaluated by a clinical independent researcher according to DSM-5 criteria and with the different instruments before randomization and after the interventions. Therapists were trained in the brief version of the UP for the transdiagnostic treatment of EDs and they were systematically supervised by an independent clinical researcher during the trial in order to check they were delivering the correct and same intervention. With the objective of ensuring the adherence to the psychological treatment, participants were only allowed to absent themselves to one of the therapeutic sessions to be finally included in the study. Post-treatment assessments were developed between July 2020 and November 2020. A single-blinded process was applied where only the researcher involved in the assessments was blinded to the intervention condition. We used the G*Power program to calculate the sample size. Based on previous studies with a similar design (Cape et al., 2010; Corpas et al., 2021a; Newby et al., 2015; Cuijpers et al., 2014), we assumed an effect size of 0.6 (Cohen's d). With a statistical power of 0.80 and $\alpha = .05$, we determined the need of 36 subjects per group. In order to control the lack of participants through the process and based in the previous trial of Corpas et al. (2021a), we assumed a dropout rate of 12%. Therefore, we required, at least, a total sample size of 80 participants (40 per group).

2.5. Statistical analyses

Data was analyzed following both intention-to-treat (ITT) and per protocol (PP) approaches. Missing data in the ITT sample was completed using the maximum likelihood estimation method. Initially, Student's t or Chi-squared tests were performed to compare the sociodemographic, clinical, emotional regulation and cognitive processes variables of the different groups at baseline. Subsequently, Student's t tests were performed to determine intra and inter-group longitudinal changes in the different variables. The effect sizes were calculated by Cohen's d (bias corrected) (Hedges, 1981) as a measure of the differences between standardized mean changes (pre-post) of the respective groups (Becker, 1988). According to (Cohen, 1988), d values close to 0.20 indicate low effect, values close to 0.50 indicate moderate effect and those close to 0.80 indicate high effect. The 95% confidence intervals for every effect size were also calculated. In addition, intra and inter-group chi-squared tests were performed to determine the pre-post differences in the number of participants fulfilling DSM-5 criteria

for the different diagnoses. Afterwards, linear regression analyses were performed to explore how pre-post standardized differences in the cognitive processes and the emotional regulation strategies acted as predictive variables for pre-post standardized changes in the clinical symptoms. Regression coefficients with 95% interval confidence were calculated and standardized regression coefficients were also provided. Finally, determination coefficients for each model were analyzed. Following Cohen (1988), an R^2 around 0.02 indicates a small effect, an R^2 value around 0.15 indicates a medium effect, and an R^2 around 0.35 or larger indicates a high effect.

3. Results

3.1. Characteristics of the sample

From the 127 participants recruited, 105 (82.7%) met inclusion criteria. They were randomized to brief group transdiagnostic psychotherapy ($n = 53$) and TAU ($n = 52$). Sixteen (15.3%) participants dropped out their correspondent intervention. Reasons participants gave for leaving the treatments were related to unexpected events, such as city changes or family issues. Figure 1 shows the flow of participants through the trial. The sample had a mean age of 39.6 years ($SD = 11.2$) and the 68.6% were women. The majority of the participants were married, with secondary studies and presented multiple EDs. The randomization process was successful in that there were no significant differences between the groups on any baseline characteristics. Further sample details can be found on Table 1.

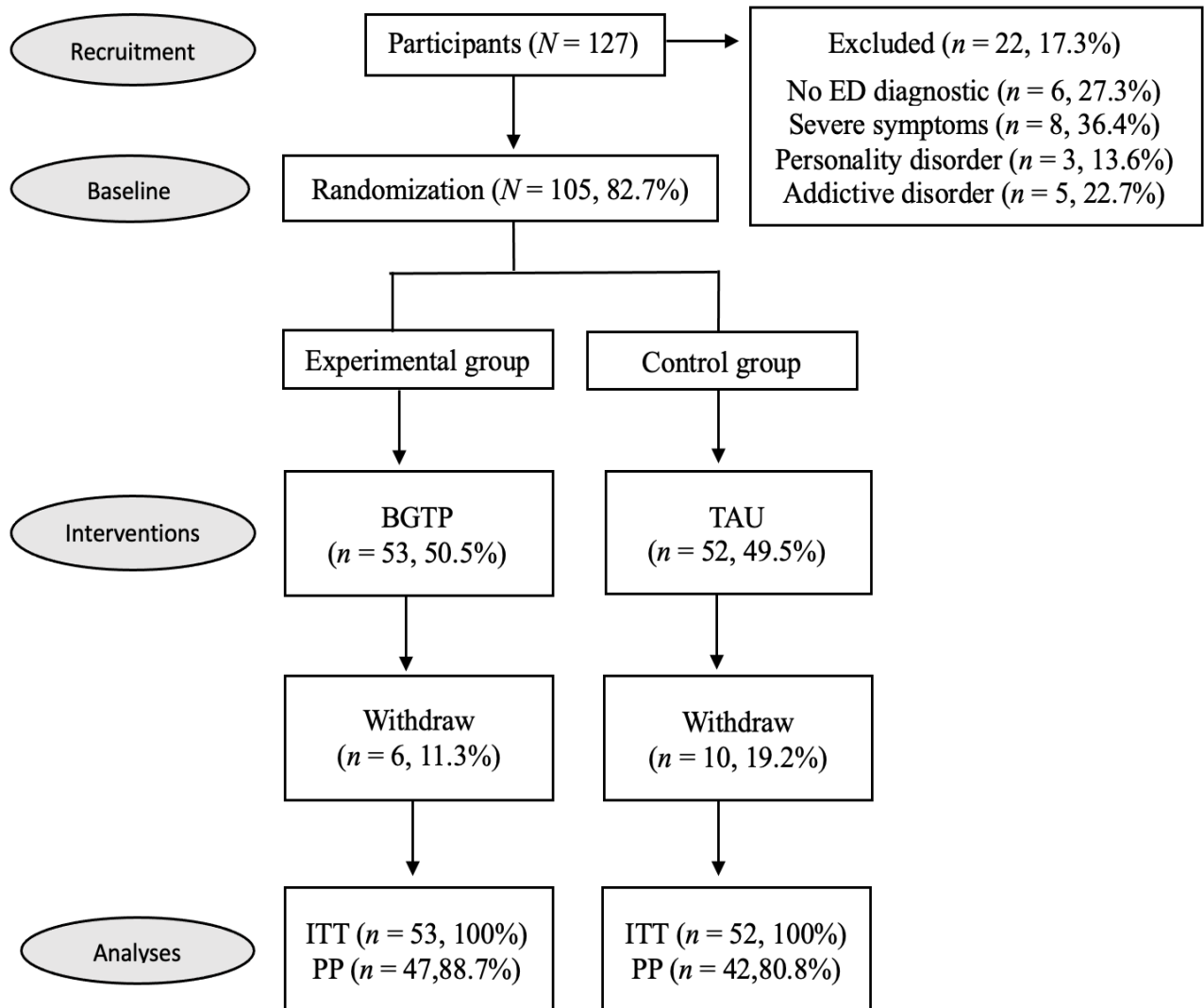


Figure 1. Consolidated Standards of Reporting Trials (CONSORT) diagram showing the flow of participants through the trial.

Notes: BGTP = Brief Group Transdiagnostic Psychotherapy; ED = Emotional Disorder; ITT = Intention to Treat; PP = Per Protocol; TAU = Treatment as Usual

Table 1. Characteristics of the groups at baseline ($N = 105$)

Variable	BGTP ($n = 53$)	TAU ($n = 52$)	χ^2/t	p
Sociodemographic data				
Age in years, M (SD)	41.15 (12.13)	37.96 (10.31)	1.45	.150
Gender: n (%) women	35 (66)	37 (71.2)	0.32	.572
Civil status, n (%)			2.92	.404
Never married	14 (26.4)	19 (36.5)		
Married	28 (52.8)	24 (46.2)		
Separated	7 (13.2)	8 (15.4)		
Widowed	4 (7.5)	1 (1.9)		
Educational level, n (%)			2.59	.273
Elementary education	16 (30.2)	9 (17.3)		
Secondary education	25 (47.2)	31 (59.6)		
University education	12 (22.6)	12 (23.1)		
Employment status, n (%)			0.15	.927
Employed	22 (41.5)	20 (38.5)		
Unemployed	24 (45.3)	24 (46.2)		
Sick leave	7 (13.2)	8 (15.4)		
Annual income, n (%)			3.80	.284
< 12000€	12 (22.6)	6 (11.5)		
12000 ≤ 24000€	25 (47.2)	26 (50)		
24000 ≤ 36000€	11 (20.8)	17 (32.7)		
> 36000€	5 (9.4)	3 (5.8)		
Primary outcomes:				
Clinical data				
Symptoms, M (SD)				
GAD-7	10.91 (4.59)	11.60 (4.12)	-0.81	.420
PHQ-15	14.08 (5.30)	13.00 (6.62)	0.92	.360
PHQ-PD	7.81 (4.71)	7.92 (4.48)	-0.13	.901
PHQ-9	12.79 (3.85)	13.44 (3.53)	-0.90	.369
Diagnoses, n (%)				
Generalized anxiety	33 (62.3)	34 (65.4)	0.11	.739
Major depression	44 (83)	42 (80.8)	0.90	.765
Panic disorder	33 (62.3)	34 (65.4)	0.11	.739
Somatization disorder	51 (96.2)	45 (86.5)	3.14	.076
Secondary outcomes:				
Emotional regulation strategies and cognitive processes				
ERQ-CR, M (SD)	16.70 (5.39)	16.19 (5.08)	0.50	.622
ERQ-ES, M (SD)	12.43 (4.68)	12.08 (3.91)	0.42	.673
PSWQ-A, M (SD)	24.15 (7.44)	23.33 (7.81)	0.55	.581
RRS-B, M (SD)	12.87 (3.82)	12.96 (3.79)	-0.13	.900
MCQ-NB, M (SD)	14.79 (4.60)	14.12 (4.91)	0.73	.468

Notes: BGTP = Brief Group Transdiagnostic Psychotherapy; ERQ-CR/ES = Emotional Regulation Questionnaire-Cognitive Reappraisal/Expressive Suppression; GAD = Generalized Anxiety Disorder; MCQ-NB = Metacognition Questionnaire-Negative Beliefs; PHQ-PD = Patient Health Questionnaire-Panic Disorder; PSWQ = Penn State Worry Questionnaire-Abbreviated; RRS-B = Rumination Response Scale-Brooding; TAU = Treatment as Usual

3.2. Primary outcomes: clinical effect of the interventions

Both treatments showed lower means at post-treatment than at baseline for every clinical measure in both PP and ITT analyses. However, whereas in the brief psychological treatment group these differences were statistically significant with high effect sizes for all EDs symptoms in all the analyses, in the TAU group they were only significant for GAD-7 and PHQ-9 in the ITT analyses with low effect sizes. When comparing the effectiveness of the treatments, we obtained significant differences for every measure in all the analyses with moderate effect sizes favorable to brief psychotherapy, except for PHQ-9 in PP analyses (see Table 2). Furthermore, only the brief psychological therapy group showed a significant proportion of participants experiencing a clinical change in their diagnoses in both PP and ITT analyses. When comparing both groups, we obtained significant differences in the diagnoses of panic disorder and somatoform disorder in PP analyses and in all the diagnoses in ITT analyses (see Table 3).

3.3. Secondary outcomes: changes in emotional and cognitive factors

Regarding the emotional regulation strategies, cognitive reappraisal showed a significant increase in the brief psychotherapy group in all the analyses with large effect sizes and a significantly decrease in the TAU group in PP analyses with low effect sizes. For its part, expressive suppression was significantly decreased in the brief transdiagnostic therapy group in both PP and ITT analyses with high effect sizes, but it only was significantly increased in the TAU group in PP analyses with a moderate size effect. When looking at the cognitive processes, worry only showed a significant decrease in the brief psychotherapy group in all the analyses with high effect sizes. Rumination was significant decreased in both treatments in all the analyses, although high effect sizes were found for the brief psychotherapy group and low effect sizes were obtained for TAU. Lastly, metacognition only showed a significant decrease in the brief transdiagnostic psychotherapy group in all the analyses with high effect sizes. When comparing the effect of the treatments for these variables, we obtained significant differences for every measure in all the analyses with high effect sizes favorable to brief psychotherapy (see Table 2).

Table 2. Clinical symptoms, emotional regulation strategies and cognitive processes at baseline and post-treatment and intra/inter-group analyses with effect sizes

Analysis/Variable	BGTP (<i>n</i> = 47 for PP / 53 for ITT)					TAU (<i>n</i> = 42 for PP / 52 for ITT)					Interaction		
	Pre <i>M</i> (<i>SD</i>)	Post <i>M</i> (<i>SD</i>)	<i>t</i>	<i>p</i>	<i>d</i> (95% CI)	Pre <i>M</i> (<i>SD</i>)	Post <i>M</i> (<i>SD</i>)	<i>t</i>	<i>p</i>	<i>d</i> (95% CI)	<i>t</i>	<i>p</i>	<i>d</i> (95% CI)
PP (<i>N</i> = 89)													
Primary outcomes:													
Clinical symptoms													
GAD-7	10.43 (4.87)	7.29 (4.72)	4.27	.000	0.64 (0.38 – 0.89)	10.95 (3.94)	10.29 (4.28)	1.11	.272	0.17 (-0.07 – 0.40)	2.61	.011	0.47 (0.12 – 0.82)
PHQ-15	14.02 (5.29)	9.71 (4.94)	6.95	.000	0.80 (0.52 – 1.08)	12.98 (7.09)	12.05 (5.26)	1.44	.159	0.13 (-0.11 – 0.37)	3.77	.000	0.67 (0.31 – 1.04)
PHQ-PD	7.45 (4.93)	3.62 (3.26)	6.28	.000	0.76 (0.49 – 1.04)	8.05 (4.64)	7.60 (5.39)	0.61	.543	0.10 (-0.14 – 0.33)	3.53	.001	0.66 (0.31 – 1.03)
PHQ-9	12.43 (4.03)	9.74 (4.78)	4.10	.000	0.66 (0.40 – 0.92)	13.24 (3.40)	12.10 (3.33)	1.80	.079	0.33 (0.08 – 0.58)	1.70	.094	0.33 (-0.03 – 0.69)
Secondary outcomes:													
Emotional regulation strategies and cognitive processes													
ERQ-CR	17.62 (5.20)	23.48 (6.72)	-6.51	.000	-1.11 (-1.43 – -0.79)	16.45 (5.20)	15.12 (5.20)	2.05	.047	0.25 (0.01 – 0.49)	-6.48	.000	-1.36 (-1.76 – -0.96)
ERQ-ES	11.52 (4.28)	7.50 (2.30)	8.49	.000	0.92 (0.63 – 1.22)	11.40 (3.70)	12.90 (4.42)	-2.77	.008	-0.40 (-0.65 – -0.15)	7.68	.000	1.32 (0.93 – 1.71)
PSWQ-A	22.83 (7.53)	13.26 (4.89)	9.51	.000	1.25 (0.91 – 1.59)	22.93 (8.37)	23.19 (7.23)	-0.32	.749	-0.03 (-0.27 – 0.21)	5.37	.000	1.28 (0.86 – 1.70)
RRS-B	11.86 (3.51)	8.37 (2.48)	6.61	.000	0.98 (0.68 – 1.28)	12.62 (4.04)	11.76 (3.19)	2.18	.035	0.21 (-0.03 – 0.45)	4.06	.000	0.77 (0.38 – 1.16)
MCQ-NB	14.76 (4.53)	10.60 (2.31)	6.50	.000	0.90 (0.61 – 1.20)	14.31 (5.27)	14.40 (4.32)	-0.15	.884	-0.02 (-0.25 – 0.22)	4.67	.000	0.92 (0.54 – 1.30)
ITT (<i>N</i> = 105)													
Primary outcomes:													
Clinical symptoms													
GAD-7	10.91 (4.59)	7.23 (4.20)	5.90	.000	0.79 (0.53 – 1.05)	11.60 (4.12)	10.23 (3.84)	2.40	.020	0.33 (0.11 – 0.55)	2.74	.007	0.46 (0.12 – 0.81)
PHQ-15	14.08 (5.30)	9.77 (4.38)	7.23	.000	0.80 (0.54 – 1.06)	13.00 (6.62)	12.04 (4.71)	1.65	.105	0.14 (-0.07 – 0.36)	4.01	.000	0.66 (0.32 – 1.00)
PHQ-PD	7.81 (4.71)	3.70 (2.90)	7.68	.000	0.86 (0.59 – 1.13)	7.92 (4.48)	7.67 (4.83)	0.39	.697	0.06 (-0.16 – 0.27)	4.64	.000	0.81 (0.46 – 1.15)
PHQ-9	12.79 (3.85)	9.79 (4.25)	5.43	.000	0.77 (0.51 – 1.03)	13.44 (3.53)	12.08 (2.99)	2.41	.020	0.38 (0.16 – 0.60)	2.07	.041	0.39 (0.05 – 0.73)
Secondary outcomes:													
Emotional regulation strategies and cognitive processes													
ERQ-CR	16.70 (5.39)	23.38 (5.97)	-8.36	.000	-1.22 (-1.54 – -0.90)	16.19 (5.08)	15.10 (5.12)	1.85	.071	0.21 (-0.00 – 0.43)	-7.79	.000	-1.43 (-1.82 – -1.05)
ERQ-ES	12.43 (4.68)	7.60 (2.67)	9.31	.000	1.02 (0.73 – 1.31)	12.08 (3.91)	12.92 (3.97)	-1.59	.119	-0.21 (-0.43 – 0.00)	7.63	.000	1.23 (0.87 – 1.59)
PSWQ-A	24.15 (7.44)	13.21 (4.34)	13.21	.000	1.45 (1.10 – 1.80)	23.33 (7.81)	23.15 (6.49)	0.24	.811	0.02 (-0.19 – 0.23)	9.79	.000	1.43 (1.01 – 1.84)
RRS-B	12.87 (3.82)	8.25 (2.20)	8.89	.000	1.19 (0.88 – 1.51)	12.96 (3.79)	11.81 (2.86)	3.32	.002	0.30 (0.08 – 0.52)	5.53	.000	0.89 (0.51 – 1.28)
MCQ-NB	14.79 (4.60)	10.68 (2.06)	6.94	.000	0.88 (0.61 – 1.15)	14.12 (4.91)	14.33 (3.87)	-0.38	.705	-0.04 (-0.25 – 0.17)	5.32	.000	0.92 (0.58 – 1.27)

Notes: BGTP = Brief Group Transdiagnostic Psychotherapy; ERQ-CR/ES = Emotional Regulation Questionnaire-Cognitive Reappraisal/Expressive Suppression; GAD = Generalized Anxiety Disorder; ITT = Intention to Treat; MCQ-NB = Metacognition Questionnaire-Negative Beliefs; PHQ-PD = Patient Health Questionnaire-Panic Disorder; PP = Per Protocol; PSWQ = Penn State Worry Questionnaire-Abbreviated; RRS-B = Rumination Response Scale-Brooding; TAU = Treatment as Usual

Table 3. Frequency and percentage of patients meeting DSM-5 criteria for each disorder at baseline and post-treatment chi-squared intra and inter-group analyses for both per protocol and intention-to-treat samples

Analysis/Diagnosis	BGTP (<i>n</i> = 47 for PP / 53 for ITT)				TAU (<i>n</i> = 42 for PP / 52 for ITT)				Interaction	
	Pre <i>n</i> (%)	Post <i>n</i> (%)	χ^2	<i>p</i>	Pre <i>n</i> (%)	Post <i>n</i> (%)	χ^2	<i>p</i>	χ^2	<i>p</i>
PP (<i>N</i> = 89)										
Generalized anxiety	28 (59.6)	13 (27.7)	4.68	.001	27 (64.3)	23 (54.8)	2.05	.454	3.62	.164
Major depression	39 (83)	23 (48.9)	5.12	.000	33 (78.6)	28 (66.7)	0.64	.302	4.28	.117
Panic disorder	30 (63.8)	6 (12.8)	3.90	.000	26 (61.9)	29 (69.1)	4.39	.581	20.93	.000
Somatization disorder	45 (95.7)	32 (76.1)	4.46	.000	38 (90.5)	39 (92.9)	0.34	.999	10.02	.007
ITT (<i>N</i> = 105)										
Generalized anxiety	33 (62.3)	12 (22.6)	5.71	.000	34 (65.4)	30 (57.7)	3.99	.481	8.41	.015
Major depression	44 (83)	21 (39.62)	4.60	.000	42 (80.8)	36 (69.2)	0.50	.238	6.75	.034
Panic disorder	33 (62.3)	6 (11.3)	4.10	.000	34 (65.4)	33 (63.5)	7.17	.999	19.23	.000
Somatization disorder	51 (96.2)	35 (66)	4.04	.000	45 (86.5)	46 (88.5)	0.60	.999	11.96	.003

Notes: BGTP = Brief Group Transdiagnostic Psychotherapy; ITT = Intention to Treat; PP = Per Protocol; TAU = Treatment as Usual

3.4. Identifying predictors of change

The regression analyses (see Table 4) showed the combination of the different factors explaining the longitudinal changes in the EDs symptoms. For generalized anxiety symptoms, only worry acted as a predictive variable in PP analyses, and cognitive reappraisal and expressive suppression were added afterwards in ITT analyses. For somatic symptoms, expressive suppression and cognitive reappraisal were acted predictive variable in PP analyses, while only expressive suppression was found to be a significant predictor in ITT analyses. For panic disorder symptoms, only metacognition acted as predictive variables in both PP and cognitive reappraisal was added afterwards ITT analyses. Lastly, for depressive symptoms, rumination and cognitive reappraisal were identified as predictors in PP, but only rumination acted as predictor in ITT analyses. The regression models performed showed a moderate/high coefficient.

Table 4. Regression analyses examining the contribution of emotional regulation strategies and cognitive processes in the therapeutic effect of the treatments

	<i>B</i>	<i>SE B</i>	95% CI for <i>B</i>	<i>F / t</i>	<i>R</i> ²	<i>p</i>
PP (N = 89)						
GAD-7						
				8.26	.33	.000
PSQW-A	0.33	0.11	0.11 – 0.55	2.95		.004
RRS-B	0.13	0.10	-0.07 – 0.34	1.29		.202
MCQ-NB	-0.61	0.09	-0.24 – 0.12	-0.66		.513
ERQ-CR	-0.15	0.11	-0.36 – 0.06	-1.39		.168
ERQ-ES	0.17	0.10	-0.02 – 0.37	1.78		.079
PHQ-15						
				5.80	.26	.000
PSQW-A	-0.05	0.12	-0.28 – 0.19	-0.40		.693
RRS-B	0.15	0.11	-0.07 – 0.37	1.36		.179
MCQ-NB	0.02	0.10	-0.48 – 0.21	0.16		.877
ERQ-CR	-0.26	0.11	-0.48 – -0.04	-2.30		.024
ERQ-ES	0.32	0.10	0.12 – 0.53	3.13		.002
PHQ-PD						
				4.30	.24	.000
PSQW-A	0.07	0.12	-0.16 – 0.31	0.63		.530
RRS-B	0.11	0.12	-0.11 – 0.33	0.96		.338
MCQ-NB	0.42	0.10	0.22 – 0.61	4.24		.000
ERQ-CR	-0.21	0.11	-0.43 – 0.02	-1.86		.067
ERQ-ES	-0.14	0.10	-0.35 – 0.07	-1.37		.176
PHQ-9						
				6.69	.29	.000
PSQW-A	-0.01	0.11	-0.24 – 0.22	-0.11		.911
RRS-B	0.38	0.11	-0.16 – 0.59	3.52		.001
MCQ-NB	0.15	0.10	-0.04 – 0.34	1.59		.115
ERQ-CR	-0.26	0.11	-0.48 – 0.04	-2.37		.020
ERQ-ES	-0.07	0.10	-0.27 – 0.14	-0.66		.514
ITT (N= 105)						
GAD-7						
				6.69	.32	.000
PSQW-A	0.29	0.10	0.10 – 0.49	0.29		.004
RRS-B	0.10	0.10	-0.9 – 0.29	1.09		.279
MCQ-NB	-0.04	0.08	-0.21 – 0.13	-0.48		.634
ERQ-CR	-0.20	0.10	-0.39 – -0.01	-2.09		.040
ERQ-ES	0.19	0.09	0.01 – 0.37	2.14		.014
PHQ-15						
				5.62	.22	.000
PSQW-A	0.05	0.11	-0.17 – 0.26	0.48		.636
RRS-B	0.14	0.10	-0.06 – 0.34	1.39		.167
MCQ-NB	0.05	0.09	-0.13 – 0.23	0.56		.579
ERQ-CR	-0.16	0.10	-0.36 – 0.05	-1.54		.127
ERQ-ES	0.30	0.10	0.11 – 0.49	3.17		.002
PHQ-PD						
				6.70	.25	.000
PSQW-A	0.08	0.11	-0.13 – 0.29	0.74		.462
RRS-B	0.09	0.10	-0.10 – 0.29	0.95		.346
MCQ-NB	0.42	0.09	0.04 – 0.59	4.70		.000
ERQ-CR	-0.21	0.10	-0.41 – -0.01	-2.12		.036
ERQ-ES	-0.17	0.09	-0.35 – 0.02	-1.81		.073
PHQ-9						
				6.19	.24	.000
PSQW-A	0.05	0.09	-0.16 – 0.26	0.46		.646
RRS-B	0.34	0.10	0.14 – 0.53	3.38		.001
MCQ-NB	0.15	0.09	-0.03 – 0.32	1.64		.104
ERQ-CR	-0.19	0.10	-0.39 – 0.01	-1.85		.068
ERQ-ES	-0.05	0.09	-0.23 – 0.14	-0.48		.630

Notes: ERQ-CR/ES = Emotional Regulation Questionnaire-Cognitive Reappraisal/Expressive Suppression; GAD-7 = Generalized Anxiety Disorder; ITT = Intention to Treat; MCQ-NB = Metacognition Questionnaire-Negative Beliefs; PHQ-PD = Patient Health Questionnaire-Panic Disorder; PP = Per Protocol; PSWQ-A = Penn State Worry Questionnaire-Abbreviated; RRS-B = Rumination Response Scale-Brooding

4. Discussion

4.1. Clinical improvement

Brief group transdiagnostic psychotherapy was effective for the reduction of all EDs symptoms and diagnoses. This outcome would be consistent with other studies that have pointed satisfactory clinical results of brief psychological treatments for EDs (Cape et al., 2010; Newby et al., 2015). The usefulness of the transdiagnostic approach is restated, since they also supported the previous results of the UP that pointed that a single treatment could be effective for comorbid anxiety and depressive disorders (Farchione et al., 2012; Sakiris & Berle, 2019) and that it could even be equally effective than other specific-disorder treatments (Barlow et al. 2017). Besides, this intervention was also effective for the modification of all the cognitive factors and emotional regulation strategies. Despite it has been pointed that psychological interventions are prone to address effectively cognitive reappraisal, but fail in doing so with expressive suppression (Dryman & Heimberg, 2018), our results showed success in modifying both emotional regulations strategies. For its part, TAU was only effective for the reduction of generalized anxiety and depressive disorder symptoms in the ITT analyses. In this line, it has been defended the usefulness of psychotropic drugs, although it has also been advised about its effect sides (Perna et al., 2016). May that as it may, it has been pointed that the psychological treatment should always be offered with or without adding psychotropic drugs (NICE, 2011). Furthermore, TAU only improved rumination from the non-clinical variables. Although in PP analyses it seemed that this intervention deteriorated cognitive reappraisal and promoted expressive suppression, this outcome was not significant in ITT analyses. A recent study of Robles et al. (2020) confirms the idea that antidepressants might be effective for the treatment of rumination syndrome but suggests that some type of psychological technique should be trained in parallel.

Regarding the comparative effectiveness of the treatments, we found that brief group transdiagnostic psychotherapy was more effective than TAU for the reduction of all EDs symptoms and diagnoses. Despite PP analyses did not show a significant difference for depressive symptoms, this outcome was significant in ITT analyses afterwards. Similarly, although PP analyses did not show a significant difference for generalized anxiety disorder and major depression, this outcome was indeed significant in ITT analyses. This might be due to the sample size differences, since, in fact, a moderate effect size was obtained in both cases. The results would be in the line of other studies that have

also pointed satisfactory clinical results of this type of interventions compared with the prescription of drugs (Cape et al., 2010; Watts, et al., 2015). Moreover, there is recent evidence of the superiority of brief transdiagnostic group therapies based on the UP compared to medication in PC contexts (Cano-Vindel et al., 2021; Corpas et al., 2021a). However, the results of the meta-analyses of Cuijpers et al. (2018) claims that there is no clinical difference between these two types of treatments for depression. Apparently, this would contradict our findings, but this study focus on the treatment of severe symptoms, including inpatients with chronic conditions while we only admitted patients that consulted for the first time in PC services with mild/moderate symptoms. When comparing the differences in modifying emotional regulation strategies and cognitive processes we found that brief group transdiagnostic psychotherapy was clearly superior to TAU.

4.2. Influence of the cognitive and the emotional regulation factors

Firstly, it was found a specificity of each cognitive process for the explanation of the improvement of the different EDs symptoms. To be concrete, worry, metacognition, and rumination were the only cognitive factors that predicted the therapeutic change in generalized anxiety, panic disorder and depressive symptoms respectively. Previous research has also pointed that each disorder could be linked to these particular cognitive process (Corpas et al., 2021b). Nevertheless, this outcome could contradict some works that claim the relation between changes in metacognition and the changes in depressive symptoms (Hagen et al., 2017; Papageorgiou & Wells, 2015). These divergences might be explained by the severity of the disorders, since that studies mainly include patients with severe and treatment resistant depression while we included participants with mid/moderate symptoms. Anyway, according to our results, it could be appropriate to designing a distinctive intervention for every ED based on each cognitive process. However, it is highly unlikely to face “pure” EDs in the practice (González-Robles et al., 2018). Indeed, mixed symptoms are the most frequent scenario. Therefore, the transdiagnostic treatment approach could be the most efficient option (Corpas et al., 2021b), since more than just one cognitive process it expected to be involved. However, it is remarkable that none of the cognitive factors explained the improvement of somatic symptoms. By contrast, and in the line of the systematic review of Okur et al. (2019), it was predicted by the modification of the emotional regulation strategies. Furthermore, the results showed the high impact of expressive suppression in this type of psychopathological symptoms. As

described in Bondo et al. (2014), it seems that this specific emotional regulation strategy is a key point for the development and treatment of somatoform disorders. For its part, some type of emotional regulation strategy was involved as a predictor of outcome in almost every analysis, with a particular importance of cognitive reappraisal as a predictor of the improvement of EDs symptoms. This outcome would reinforce the idea that these variables are fundamental from a transdiagnostic approach (Barlow et al., 2016) and that they should always be present in the psychotherapeutic interventions.

4.3. Limitations

The first limitation is related to some of the sample characteristics. For instance, the predefined age restrictions did not include children, adolescents or the elderly. However, some studies suggest that brief psychotherapies for EDs are also effective for that specific populations (Gatta et al., 2019; Serfaty et al., 2009). Furthermore, although there is certain evidence of the effectiveness of brief psychotherapies for severe affective disorders (Driessen et al., 2010), our results could only be generalized to those with mild/moderate symptoms. We did not develop follow-up assessments and, therefore, we are only able to determine the effectiveness of the interventions right after the end of the treatment. However, there is recent evidence that claims the long-term effectiveness of brief psychotherapies in PC (Brent et al., 2020). Secondly, the number of tests might inflate the risk of Type I error. Furthermore, the lack of a longer version of the therapy as a comparator and the unknown amount of medication taken by the participants of the control group limits the results of the study. Another limitation is that patients were nested in groups and we did not analyze the possible influence of the different mentioned groups during the treatments, that could bias the obtained results. Moreover, it was not registered the number of consultations during the TAU and that could mean that some patients received more sessions than others depending on the development of their symptoms. Finally, the study might present biases due to the single-blinded method in which patients and clinicians knew the allocation of the randomization process.

5. Conclusions

Brief transdiagnostic psychotherapy seems to be superior to pharmacological interventions for the treatment of mild/moderate EDs. Even if medication could be effective in some cases, it appears that it does not modify the underlying processes behind anxiety and depression as the psychological intervention does. On the contrary, brief

transdiagnostic psychotherapy would develop adaptive ways of coping with EDs symptoms. Since several predictors appear to be linked to the improvements of the clinical symptoms, it would be recommended to focus on them through therapeutic processes. Furthermore, the transdiagnostic approach could be an efficient strategy to treat several EDs at the same time (Sakiris & Berle, 2019). In addition, the group format appears to be as effective as individual psychotherapies for mild/moderate EDs (van Rijn & Wild, 2016). Considering that most of the consultations in PC are related to non-severe anxiety and depression disorders (Kroenke et al., 2007), group psychotherapies would reduce wait-lists and public costs (Morrison, 2001). For those reasons, it is our hope that this study contributes to the dissemination of brief group transdiagnostic psychotherapies in PC in order to be able to offer cost-effective treatments for an increasing number of patients.

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