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Patterns of Change and Their Relationship to Outcome and Follow-up in Group and Individual Psychotherapy for Depression

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Dissertation

Patterns of Change and Their Relationship to Outcome and Follow-up in Group and

Individual Psychotherapy for Depression

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A mis papás, Silvia y Orlando, por su entrega, dedicación, esfuerzo, aceptación y amor incondicional. Por llevarnos y apoyarnos (a mí y mi hermano Leo) siempre hacia adelante. Por entregarme todo lo necesario para llegar aquí y más…

"Each person is a unique individual. Hence, psychotherapy should be formulated to meet the uniqueness of the individual's needs, rather than tailoring the person to fit the Procrustean bed of a hypothetical theory of human behaviour."

Milton H. Erickson

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Abbreviations

1-year FU	1 year follow-up
3-month FU	3-month follow-up
95% CI	95% confidence intervals
ACT	Acceptance and commitment therapy
AIC	Akaike's information criterion
ANOVA	Analysis of variance
APA	American Psychological Association
APA	American Psychiatric Association
BA	Behavioural activation
BDI-II	Beck Depression Inventory – II
BIC	Bayesian information criterion
BLRT	Bootstrapped likelihood ratio test
CBGT	Cognitive-behaviour group therapy
CBT	Cognitive-behaviour therapy
CCs	Cognitive conflicts
CONSORT	Consolidated Standards for Reporting Trials
CORE	Clinical Outcome in Routine Evaluation
CORE-OM	Clinical Outcome in Routine Evaluation – Outcome Measure
CORE-SFB	Clinical Outcome in Routine Evaluation – Short Form B
DALYs	Disability-Adjusted Life-Years
DCs	Dilemmatic constructs
DFT	Dilemma-focused therapy
DSM-5	Diagnostic and Statistical Manual of Mental Disorders, 5th Edition

DSM-IV-TR	Diagnostic and Statistical Manual of Mental Disorders, IV Edition, Text Revision
EFT	Emotion-focused therapy
ETR	Expected treatment response
F	Fisher's statistic
FIT	Feedback-informed treatment
g	Hedges' g effect size
$G_{\#}$	Group therapy session number
GAF	Global Assessment of Functioning
GMM	Growth mixture modeling
HAMD	Hamilton Depression Scale
HLM	Hierarchical linear modeling
$I_{\#}$	Individual therapy session number
ICD-11	International Classification of Diseases – 11th Edition
IDs	Implicative dilemmas
IHME	Institute for Health Metrics and Education
IPT	Interpersonal therapy
LRT	Lo-Mendel-Rubin likelihood ratio test
M	Mean
MBCT	Mindfulness-based cognitive therapy
MDD	Major depressive disorder
MLM	Mixed linear modelling
MLR	Multinomial logistic regression
N	Population size
n	Sample size

NICE	National Institute for Clinical Excellence
NN	Nearest neighbours
OECD	The Organisation for Economic Co-operation and Development
ORS	Outcome Rating Scale
p	p-value
PAI	Personalised Advantage Index
PCPT	Personal construct psychotherapy
PCT	Personal construct theory
PICID	Proportion of the intensity of constructs of implicative dilemmas
Post-TA	Post-treatment assessment
R^2	Proportion of explained variance
RCI	Reliable change index
RCTs	Randomised controlled trials
RGT	Repertory grid technique
RM-ANOVA	Repeated measures - analysis of variance
RMSEA	Root mean square error of approximation
ROM	Routine outcome monitoring
SCT	Systemic couple therapy
SD	Standard deviation
SE	Standard error
SEM	Structural equation modelling
TAU	Treatment as usual
UN	United Nations
VIF	Variance inflation factor
WHO	World Health Organisation

X^2 Chi^2

z Standardised score

Abstract

The study explored the presence of different patterns of change in a sample of patients who received cognitive therapy for depression in group and individual sequential formats. Our hypothesis was that some patients would respond better to group than to individual therapy, and that for others the opposite trend would be found. *Objective:* To identify differential patterns of response, to describe the differences in the patients' characteristics in each pattern, and to predict pattern membership from these characteristics. Also, we wanted to gauge the relationship between each pattern and treatment outcome at termination and follow-up. *Method:* 108 adults who met criteria for major depressive disorder and/or dysthymia completed the treatments included in a randomized controlled trial combining group and individual therapy. They were assessed with the Structured Clinical Interview for DSM-IV Axis I Disorders, the Beck Depression Inventory-II, the Clinical Outcome in Routine Evaluation, the Global Assessment of Functioning, and the Repertory Grid Technique. Growth mixture modeling was used to identify the patterns of change in each treatment phase. Mixed linear models and repeated measures analysis of variance were performed to compare patients' characteristics in each pattern. Multinomial logistic regression was used to compute predictive models for the patterns from patients' baseline characteristics. Finally, hierarchical linear regression was used to establish the power of each pattern to predict treatment outcome at termination and at 3-month and 1-year follow-up. *Results:* A 3-class solution was obtained: *group therapy improvers, individual therapy improvers* and *non-improvers*. Patients in each pattern differed in terms of initial symptom severity, psychological distress, functioning, self-ideal discrepancy, perception of social isolation, and conflictual construction of the self. Some of these variables also worked as predictors for pattern membership. More than half of the explained variance of the

outcome at termination and at 1-year follow-up was accounted for by initial depression scores and pattern of change. *Conclusions:* The results supported the hypothesis of differential patterns of response to cognitive therapy. Profiles of patients who obtained better results in group or individual therapy for depression could be identified as well.

Keywords: early response, trajectories, growth mixture modeling, personalised therapy, low- and high-intensity treatments

Resumen

El estudio exploró la presencia de diferentes patrones de cambio en una muestra de pacientes que recibió terapia cognitiva para la depresión en dos formatos secuenciales: grupal e individual. Nuestra hipótesis fue que algunos pacientes responderían mejor a la terapia grupal que a la individual, y que para otros pacientes se encontraría el patrón opuesto. *Objetivo*: Identificar patrones diferenciales de respuesta, describir las diferencias entre las características de los pacientes en cada patrón y, desde estas características, predecir la pertenencia de los pacientes a cada patrón. También quisimos evaluar la relación entre cada patrón y el resultado de la terapia al final del tratamiento y al seguimiento. *Método*: 108 adultos que cumplieron criterios para el diagnóstico de trastorno depresivo mayor y/o distimia completaron los tratamientos como parte de un ensayo clínico aleatorizado que combinaba terapia grupal e individual. Los pacientes fueron evaluados con la Entrevista Clínica Estructurada para los Trastornos del Eje I del DSM-IV, el Inventario de Depresión de Beck – II, el *Clinical Outcome in Routine Evaluation*, la Escala de Evaluación de la Actividad Global, y la técnica de la rejilla. Se utilizaron modelos de crecimiento mixtos para identificar los patrones de cambio en cada fase de tratamiento. Se utilizaron modelos lineales mixtos y análisis de la varianza de medias repetidas para estimar las diferencias en las características de los pacientes entre cada patrón. A través de regresión logística multinomial se estimaron modelos predictivos de los patrones de cambio desde las características iniciales de los pacientes. Finalmente, a través de regresión lineal jerárquica se estimó el poder predictivo de cada patrón para explicar los resultados de la terapia al final del tratamiento, al seguimiento a los tres meses y al seguimiento a un año. *Resultados*: Se obtuvo una solución de tres clases: quienes mejoraron en terapia grupal, quienes mejoraron en terapia individual y quienes no mejoraron. Los pacientes

pertenecientes a cada patrón se diferenciaron en el nivel inicial de sintomatología,

malestar psicológico, funcionamiento, discrepancia yo-ideal, aislamiento social auto-

percibido y construcción conflictiva del sí-mismo. Algunas de estas variables también

funcionaron como predictores de la pertenencia de los pacientes a cada patrón. Más de

la mitad de la varianza explicada del resultado de la terapia al final del tratamiento y al

seguimiento a un año fue representada por las puntuaciones iniciales de depresión y los

patrones de cambio. *Conclusiones*: Los resultados tendieron a apoyar nuestra hipótesis

acerca de patrones diferenciales de respuesta en terapia cognitiva. Los perfiles de los

pacientes que obtuvieron mejores resultados en terapia grupal que en terapia individual

para depresión pudieron ser identificados.

Palabras clave: respuesta temprana, trayectorias, modelos de crecimiento mixto,

terapia personalizada, tratamientos de baja y alta intensidad

1. Introduction

The current dissertation studied the patterns of change (trajectories) in a sample of patients that, in the context of a randomised controlled trial (RCT) for depression (Feixas et al., 2013, 2016, 2018), received two interventions sequentially: first, cognitive-behaviour group therapy (CBGT), regarded as low-intensity CBT (Söchting, Wilson, & De Gagné, 2010), for all patients, and then, one of two types of cognitive individual therapy (high-intensity treatments) where patients were randomly allocated to either standard cognitive-behaviour therapy (CBT; Beck, Rush, Shaw, & Emery, 1979) or dilemma-focused therapy (DFT; Feixas & Compañ, 2016). Analyses of this RCT study both at end of therapy and follow up assessments (Feixas et al., 2016, 2018) showed that both conditions of treatment were equally efficacious.

Considering that patients received the treatments in two consecutive phases, and based on previous literature, we predicted the existence of distinct patient response patterns for each treatment phase. That is, we hypothesised that some patients would respond better to group therapy than to individual therapy, and that in other patients the opposite trend would be found.

The importance of identifying these patterns is the potential for establishing predictive models based on patients' characteristics belonging to each pattern cluster. That is, we want to identify the predictors of pattern cluster membership in order to use these models for treatment personalisation. From a cost-efficacy perspective, establishing "what works for whom?" (Paul, 1967) is particularly important, especially with patients who are likely to obtain greater benefits from a more economical therapeutic modality, such as group therapy (a low-intensity CBT), can be identified – and also patients who do indeed need individual therapy (high-intensity CBT).

In the study of Feixas et al. (2013, 2016, 2018), a self-report measure of depression was used as primary outcome, and general functioning, psychological distress, and indexes from the repertory grid technique (RGT; Kelly, 1955/1991) —for assessing self-ideal discrepancy, perceived social isolation, and conflictual construction of the self— were used secondarily. In this study, the patterns are tracked in terms of psychological distress assessed session by session. From these patterns, differences in patients' characteristics belonging to each pattern cluster were compared. The patients' intake characteristics which predicted these patterns were established. Finally, the relationship between each pattern and treatment outcome at termination and follow-up was explored.

In the following sections, the theoretical background that guided this research will be outlined. First, a review of state of the art regarding psychotherapy research and depression is presented. Second, the attempts that have been made to improve psychotherapy for depression, and the research programme from which the study of Feixas et al. (2013, 2016, 2018) was designed, are explained. Third, recent paradigms in psychotherapy research and treatment personalisation, from which this dissertation was derived, are described. Finally, the contributions of one of the instruments used in the study of Feixas et al. (2013, 2016, 2018), the RGT, and its potential utilisation for treatment personalisation are discussed.

1.1 Psychotherapy Research and Depression

Generally, the field of psychotherapy research can be summarised in three or four main lines of enquiry (depending on the authors doing the classification): psychotherapy outcome research, psychotherapy process research, process and outcome

research, and common factors —for some authors this latter is a subtype of process-outcome research— (Gelo, Pritz, & Rieken, 2015; Krause, 2005; Lambert, 2013a).

Psychotherapy outcome research aims to investigate whether a treatment produces the desired and expected clinical results (Gelo et al., 2015). In other words, psychotherapy outcome research deals with the question: does psychotherapy work (for 'X' clinical condition)? Mostly quantitative studies based on pre-to-post comparisons can be found under this line of enquiry. These can be efficacy or effectiveness studies. The first type corresponds to designs where the conditions of the treatment are controlled (e.g., treatment manualisation, formal inclusion/exclusion systematised criteria), the effects of it are compared to a control group, and patients are randomly allocated to one of the tested conditions (Comer & Kendall, 2013). These are the RCTs that support the paradigm of evidence-based practice. In contrast, effectiveness studies examine the results of treatments provided in natural clinical settings where the conditions of the treatment are under minimum control (Gold, 2015). These designs support the paradigm of practice-based evidence. These two paradigms are complementary because while efficacy studies obtain a high level of internal validity (and lower levels of external validity), effectiveness studies add to the opposite (Lambert, 2013b).

The second line of enquiry is psychotherapy process research, which deals with the question of how psychotherapy works (Hardy & Llewelyn, 2015). Factors such as therapeutic alliance, therapist and patient behaviours during the sessions, therapeutic methods, clinical strategies and techniques, are studied with quantitative and qualitative designs.

When the aforementioned factors are studied to see what effect they have on the outcome of therapy, we are talking about process-outcome research. Process-outcome research deals with the question: what is happening in the psychotherapy sessions that is helpful (or not)? In other words, what needs to happen during the sessions to obtain a specific outcome (Crits-Christoph, Connolly-Gibbons, & Mukberjee, 2013; Gelo & Manzo, 2015). Studies under this approach mostly use quantitative and mixed designs.

The common factors perspective can be classified as a process-outcome line of enquiry. Common factors (Cuijpers, Reijnders, & Huibers, 2019; McAleavey & Castonguay, 2015) emerged at the end of the 1970s when the first meta-analyses of psychotherapy outcome supported the general efficacy and effectiveness of psychotherapy, but not the superiority of any approach or school. "Everybody has won, all must have prizes" was the statement that summarised this equivalence conclusion known as "the dodo bird verdict" (Elliott, Barker, & Hunsley, 2015). Common factors deal with the following question: if all "bona fide" approaches or schools of psychotherapy are equally efficacious and effective, what are the "common factors" that make psychotherapy work? Factors such as therapeutic alliance, empathy from the therapist, expectations of the patient, cultural adaptation of the therapy, and therapist individual differences have been studied regarding their contribution to treatment outcome (Wampold, 2015).

In the context of psychotherapy research, depression has been one of the most studied clinical conditions (Cuijpers, Karyotaki, Reijnders, & Ebert, 2018; Wampold & Imel, 2015). The probable reason is that depression is one of the most widespread mental health problems worldwide, being one of the leading causes of disability (World Health Organisation [WHO], 2018a). This led researchers and clinicians to access to the clinical population easily, and to prioritise the efforts to tackle this problem as a public

health issue. In fact, the United Nations (UN) in their last World Happiness Report

(Helliwell, Layard, & Sachs, 2018), talks about depression as an "epidemic" due to the

increase of its prevalence rates in the United States and other countries of the

Organisation for Economic Co-operation and Development (OECD), not only in adults,

but also in adolescents. According to the Institute for Health Metrics and Education

(IHME), the estimated mean of Disability-Adjusted Life-Years (DALYs) for the world

in 2016 was around 600 per 100,000 inhabitants (IHME, 2017). Furthermore,

individuals with depression lost 5.6 hours of productive time at work per week

compared to 1.6 hours in non-depressed workers, which results in 225 million of

workdays lost per year (McLaughlin, 2011).

From current psychopathological nosologies (i.e., Diagnostic and Statistical

Manual of Mental Disorders – 5 [DSM-5], American Psychiatric Association [APA],

2013; and International Classification of Diseases – 11 [ICD-11], WHO, 2018),

depression is a term that refers to two different, but similar clinical conditions: major

depressive disorder (MDD), and dysthymia (or persistent depressive disorder). In both,

a number of symptoms such as low mood and sadness, apathy, anhedonia, hopelessness,

tiredness, irritability, guilt, deteriorated image of the self (i.e., low self-esteem),

alterations of the apetite and sleep must be present. According to the DSM-5 and ICD-

11, the difference between these conditions is the chronicity and intensity of the

symptoms. For MDD, five or more symptoms (including depressed mood and/or

anhedonia) have to be present during the same two-week period; while for dysthymia,

two or more symptoms (beyond depressed mood) should be present for at least two years.[1]

The outcome of psychotherapy for depression has been examined in more than 250 RCTs (Cuijpers et al., 2018). Diverse meta-analyses evaluating their efficacy or effectiveness have shown that effect sizes (in Hedges' *g*) go between .20 and 1.5 or higher in efficacy studies and between .20 and .80 or higher in effectiveness studies (Hunsley, Elliott, & Therrien, 2014). Indeed, the efficay and effectiveness of psychotherapy for depression is well-established (Cuijpers, Ebert, Acarturk, Andersson, & Cristea, 2016). The studies included approaches such as CBT, interpersonal therapy (IPT), problem-solving therapy, behavioural activation (BA), emotion-focused therapy (EFT), systemic couple therapy (SCT), mindfulness-based cognitive therapy (MBCT), psychodynamic therapies, acceptance and commitment therapy (ACT), low-intensity therapies (e.g., CBGT, telephone-delivered CBT and IPT, internet- and computer-assisted therapy), among others (Parikh et al., 2016). Several RCTs comparing different types of psychotherapy have shown that there are no differences in effects among these therapies and, if any, it is minimal, concluding, therefore, with the "dodo verdict". In other words, they concluded that all bona fide therapies (i.e., delivered by trained therapists, based on psychological principles, and designed to be a viable treatment–Parikh et al., 2016) seem to be equally efficacious or about equally efficacious in the treatment of depression (Cuijpers et al., 2016).

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[1] In the study by Feixas et al. (2013, 2016, 2018) RCT, patients were assessed conforming the criteria of Diagnostic and Statistical Manual of Mental Disorders – IV – Text Revision (DSM-IV-TR; APA, 2000) for MDD and dysthymia. These criteria did not change in DSM 5.

Regarding process and process-outcome studies, the factors addressed by the researchers vary according to the theory of change they are assuming or the psychotherapeutic approach they are investigating. For instance, it is possible to find studies about the role of different process variables in treatment outcome of depression such as narrative markers of change or innovation (Fernández-Navarro et al., 2018; Gonçalves et al., 2016), emotional processing and task resolution (Greenberg & Watson, 2010), narrative and emotional processing (Boritz, Bryntwick, Angus, Greenberg, & Constantino, 2014), ambivalence toward change (Braga et al., 2018), assimilation of problematic experiences (Detert, Llewelyn, Hardy, Barkham, & Stiles, 2006; Mendes et al., 2016; Ribeiro et al., 2016), just to name a few.

Assuming a common factors perspective, the American Psychological Association (APA) elaborated a task force on psychotherapy, called "Evidence-Based Therapy Relationships" (APA, 2012; Norcross & Wampold, 2011; Norcross & Lambert, 2018). In their lastest version, authors concluded that process factors such as alliance, collaboration, goal consensus, cohesion in group therapy, empathy, positive regard and affirmation, collecting and delivering patient feedback are "demonstrably effective" in terms of increasing the likelihood of psychotherapy success. Other factors such as congruence/genuineness, real relationship, emotional expression, cultivating positive expectations, promoting treatment credibility, repairing alliance ruptures, and managing countertransference are "probably effective"; and therapist self-disclosure and immediacy, are "promising but insufficient research to judge." These findings have been quoted in several clinical guidelines of depression as evidence-based therapy practices (Álvarez Ariza et al., 2014; Hunsley et al., 2014; Karyotaki et al., 2014; Parikh et al., 2016).

Concerning therapy modality, meta-analyses (Cuijpers, van Straten, & Warmerdam, 2008; Huntley, Araya, & Salisbury, 2012; Okumura & Ichikura, 2014) evaluating the efficacy and effectiveness of group vs. individual therapy for depression have concluded that group therapy is more effective than treatment as usual (TAU), but can be less effective than individual therapy at the end of treatment in more severe cases, while no differences were found at follow-up. Furthermore, group therapy showed higher dropout rates than individual therapy. However, the authors concluded that more research is needed to examine whether the difference between individual and group treatment is clinically relevant. Nevertheless, it is recommended considering other factors such as availability, costs, and patient preferences in choosing between group and individual therapy in clinical practice (Parikh et al., 2016).

To summarise, we agree upon the conclusions of Munder et al. (2018) after a re-analysis of treatments of depression in the context of a recent debate (Cuijpers et al., 2018) about Eysenck's (1952) original claim on psychotherapy ineffectiveness, as follows:

> "Given these results, as well as a considerable corpus of evidence consistent with these results (Wampold & Imel, 2015), we argue that the field should accept the general conclusion that psychotherapy is an effective practice and give our attention to ways that psychotherapy could be improved." (p. 6)

1.2 Research Strategies to Enhance Psychotherapy for Depression

Considering the well-supported efficacy and effectiveness of psychotherapy for depression (as previously explained), psychological therapies (e.g., CBT) are recommended as first-line treatment by clinical guidelines (The National Institute for Health and Care Excellence [NICE], 2018). Nevertheless, responses remain approximately at 50%, and recurrences and relapses are often (Buckman et al., 2018). Cuijpers et al. (2016) give us three interesting killer-facts. First, treatments for depression can reduce the burden of the symptoms by only about 33% (Andrews, Issakidis, Sanderson, Corry, & Lapsley, 2004). Second, more than 40% of the patients do not, or only partially, respond to treatment, and less than one third are wholly recovered after treatment (Hollon et al., 2002). Third, relapse rates are estimated at 54% after two years and up to 85% within 15 years after recovery from an initial episode (Vittengl, Clark, Dunn, & Jarrett, 2007). Additionally, 20 patients need to be treated with psychotherapy in order to avoid one case of deterioration (Cuijpers, Reijnders, Karyotaki, de Wit, & Ebert, 2018), and dropout rates have been estimated around 17.5% and 20% from individual psychotherapy (Cooper & Conklin, 2015).

Under this scenario, researchers and clinicians have made many attempts to improve the response rates aimed at enhancing psychotherapies for depression. Three initiatives have been taken in order to achieve this goal: studying factors related to psychopathology, studying psychotherapy process factors, and treatment personalisation. In the following subsections, the first two initiatives will be discussed. Subsequently, DFT is outlined as an example of the first initiative. The third initiative, treatment personalisation, will be explained in the next section.

1.2.1 Enhancing psychotherapy for depression by targeting factors related to psychopathology.

Improving psychological therapies by studying factors related to psychopathology (e.g., behavioural inhibition, negative thoughts), implies to have a psychological theory and a model to explain depression, or counting on evidence which supports that 'X' psychological variable is related to depression. That is, proposing a set of factors or variables which are causing, maintaining, and/or influencing the symptoms and the clinical condition. These variables should be operationalised in order to be measured and addressed in a specific treatment protocol. If the variable is properly modified during the treatment, symptoms must decrease in proportion. From this point of view, research designs (particularly RCTs) which dismantle components of treatment protocols or add components to them can be carried out. These designs aim to find specific effects on the treated condition by managing the target variable. That is, adding or removing the treatment component designed to treat that variable in the compared conditions (Wampold & Imel, 2015). For instance, the first dismantling design was carried out by Jacobson et al. (1996). They tested the hypothesis that CBT for depression as formulated by Beck et al. (1979) would work better than BA and automatic thoughts restructuring components alone. At the same time, this latter would work better than BA alone. That was not the case; all three conditions resulted equally efficacious. In fact, later on these results were replicated in a study with similar design (Dimidjian et al., 2006).

Meta-analyses (Ahn & Wampold, 2001; Bell, Marcus, & Goodlad, 2013) evaluating the effects of dismantled or added components in several studies have found a modest effect on additive designs, and no effect on dismantling designs. However, it seems that the tiny effect found on additive designs was an artefact from the data

analytic strategy utilised (Flückiger, Del Re, & Wampold, 2015). In fact, in a recent

meta-analyses of components studies (Cuijpers, Cristea, Karyotaki, Reijnders, &

Hollon, 2019) including publications from 1966 to 2016, the authors did not find

sufficient statistical power to draw significant results. Therefore, they concluded that we

do not know if the effect of psychotherapy for depression is due to specific components

or common factors.

Another way of assessing the effect of addressing a specific factor related to

psychopathology on treatment outcome is through mediation and moderation analyses

(Kazdin, 2014). For example, evaluating the effect of automatic thoughts restructuring

on CBT outcome. In these types of studies there is not a direct manipulation of the

variables, but proper measurement of them and statistical analyses of their effects on

treatment outcome.

Being CBT the most studied model of psychotherapy ever, several studies have

been conducted to test the effect of mediators and moderators for this treatment of

depression (Wampold & Imel, 2015). They included change in negative attitudes and

modification of automatic thoughts (Oei & Free, 1995); BA, learning cognitive coping

skills and modification of core dysfunctional schemas (Dimidjian et al., 2006; Jacobson

et al., 1996); learning cognitive coping skills and problem resolution techniques

(DeRubeis & Feeley, 1990; Feeley, DeRubeis, & Gelfand, 1999; Strunk, Cooper, Ryan,

DeRubeis, & Hollon, 2012; Tang & DeRubeis, 1999); change of dysfunctional attitudes

and negative emotions (Burns & Spangler, 2001); acquisition of coping skills and

change in implicitly maladaptive beliefs (Adler, Strunk, & Fazio, 2015); among others.

In none of these studies, a direct effect of the measured variables on treatment outcome

could be isolated, resulting in an unresolved timeline problem (what was first, the

change in the mediator or in the symptoms?, Kazdin, 2009). According to Longmore &

Worrell (2007), there is insufficient evidence to conclude that challenging thoughts is responsible for the benefits of CBT for depression. Furthermore, there is evidence that therapies are not specific to change the target variables they say to change according to their theory; thus change in a specific psychological variable may occur in different models of therapies (Castonguay, 2011). For instance, a change in distorted cognitions also occurs in IPT, pharmacotherapy, and BA alone (Dimidjian et al., 2006; Imber et al., 1990; Jacobson et al., 1996; Oei & Free, 1995).

Considering the previous review, it is possible to conclude that, to date, there are not specific components regarding psychological factors related to psychopathology that can be specifically targeted to enhance the treatment of depression.

1.2.2 Enhancing psychotherapy for depression by targeting psychotherapy process factors.

Studying psychotherapy process factors aimed at enhancing the treatment of depression, implies to control the conditions of the design by enhancing the targeted psychotherapy process factors (e.g., accomplishment of homework assignments, insights of the patients, repairing of alliance ruptures) in one of the tested conditions, or doing mediation and moderation analyses. It must be pointed out that this latter type of studies does not lead to a direct treatment improvement, but to establish what is the contribution of the studied factors to treatment outcome. Once these factors have been identified, they can be tested by enhancing them in one of a RCT's conditions, or in clinical practice through effectiveness studies.

Here we are talking about process factors which explain change processes and not psychopathology. These include process variables proposed by specific models of

change and common factors. For instance, rates of homework assignments completion in CBT for depression resulted in a powerful predictor of patients' improvement (Burns & Nolen-Hoeksema, 1991; Burns & Spangler, 2000). These results were consistent with the study of Neimeyer and Feixas (2016), in which patients were randomly allocated to one of two conditions of a 10-week CBT programme for depression: with or without homework assignments. Allocation in the homework condition predicted more substantial improvement of the patients in depression symptoms at termination, but not at six-month follow-up. However, acquisition of cognitive restructuring skills predicted maintenance of treatment gains at follow-up in both conditions.

An observational study (Crits-Christoph, Gibbons, Temes, Elkin, & Gallop, 2010) which compared how interpersonal issues were addressed by IPT and CBT therapists, found that the use of *learning statements* (defined as "any statement that helped the patient become aware of a thought, feeling, or behaviour" [p. 423], regarded as interpretation by psychodynamic approaches) was positively related to outcome in IPT for depression, but the opposite relation was found in CBT. Another study (McAleavey & Castonguay, 2015) found that emotional deepening and exploration of the past (techniques associated with psychodynamic and humanistic therapies), not only can be identified in sessions conducted by CBT therapists, but also have been linked with outcome in CBT. Furthermore, patients with depression that were treated by CBT therapists specially trained in strategies for addressing alliance ruptures showed greater improvement and more clinically significant change than patients treated by standard CBT therapists in a RCT (Constantino et al., 2008).

Regarding the effect of the therapists in CBT for depression, adherence and competence rates on treatment outcome show contradictory results. One meta-analysis (Webb, DeRubeis, & Barber, 2010) concluded that therapist adherence and competence

play a little role in determining symptoms improvement. Later on, other authors (Webb et al., 2012) studying two different samples found that adherence to CBT techniques is strongly associated with patients' CBT skills and symptoms change in one sample. In the other sample, the therapeutic alliance was a stronger predictor than the factors mentioned. The authors concluded that interaction between depression symptoms severity at intake and CBT techniques might play a role in explaining the difference between the two samples.

Others studies found that adherence to behavioural methods and homework assignments were strong predictors of symptoms improvement (Sasso, Strunk, Braun, DeRubeis, & Brotman, 2015). Finally, Socratic questioning predicted session to session symptoms improvement when the alliance was controlled (Braun, Strunk, Sasso, & Cooper, 2015).

In terms of common factors, as was previously explained, APA's task force on psychotherapy relationships (acknowledged in clinical guidelines of depression), it was concluded that the best outcomes are likely to come from the use of evidence-based therapy relationships (see section 1.1). The therapeutic alliance has been identified as one of the main contributing factors to psychotherapy outcome, acting as the best predictor of treatment success (Ardito & Rabellino, 2011; Flückiger, Del Re, Wampold, & Horvath, 2018; Lambert & Barley, 2001). In CBT for depression, the alliance factors of agreement between therapist and patient in tasks and methods, but not the affective bond between them, have been found strong predictors of treatment outcome. In contrast, both factors, when assessed in a late session, were significantly predicted by prior symptoms change (Webb et al., 2011).

Almost every study reviewed fail in controlling the timeline of symptoms improvement and the role of the mediators analysed (Crits-Christoph et al., 2013). That is, it was not possible to say what was first, the role of the mediator in the change process or symptom improvement. Furthermore, only little empirical support for the respective theoretical models of change in psychotherapy for depression was reported in the studies (Lemmens et al., 2017). It is surprising that considering the number of outcome studies about CBT for depression that have been conducted to date, there is still a lack of studies about processes and mechanisms of change. Much more research is needed to determine whether specific processes and mechanisms are responsible for change, in order to enhance treatments for depression with this initiative.

1.2.3 Dilemma-focused therapy as a way to enhance psychotherapy for depression by targeting a factor related to psychopathology: cognitive conflicts.

One initiative aimed at improving the efficacy of psychotherapy for depression was the research project "Efficacy of a dilemma-focused intervention for unipolar depression" (Feixas et al., 2013, 2016, 2018). In this project, the initiative taken by the researchers was studying factors related to psychopathology (section 1.2.1), particularly cognitive conflicts (CCs).

A CC corresponds to an internal contradiction between two parts of the self that can play a role when a person is faced to a change process that compromises aspects of his or her identity (as in psychotherapy). One of these parts leads the person to change, enclosing the advantages of change. In contrast, the other part is led to maintain the continuity of the person's former identity, enclosing the disadvantages of change.

The operationalisation of CCs has been carried out by means of the RGT (Feixas & Saúl, 2004; Feixas, Saúl, & Ávila-Espada, 2009). The RGT is derived from Kelly's personal construct theory (PCT; Kelly 1955/1991), which assumes that each person constructs his or her own system of meanings to interpret his or her self, others and the world. The units with which this system of meanings is created are personal constructs: bipolar dimensions of meaning (e.g., black vs white, short vs tall, nervous vs calm, etc.) which people use to interpret the world, make decisions and act upon it. The RGT is a semi-structured interview that assesses the system of personal constructs people use to define themselves and their interpersonal world. In general terms, is a method for attempting to "stand in others' shoes," to see their world as they see it, and to understand their concerns (Fransella, Bell, & Bannister, 2004). It begins by identifying a set of significant others (partner, family, friends) and self-elements (e.g., "self now", "ideal self"; see upper part of figure 1). Then, individuals are asked to find similarities and differences between them, using their own words to name these characteristics (their personal constructs; see left column of figure 1). Finally, individuals rate each element (self and others) according to each of the constructs elicited (usually on a 7-point Likert scale).

ELEMENTS

CONSTRUCTS		Self now	Mother	Father	Brother	Boyfriend	Friend 1	Friend 2	Non-grata	Friend 3	Cousin	Godmother	Friend 4	Ideal Self
1. Pessimistic	1. Optimistic	1	1	5	2	7	3	6	2	6	4	3	2	7
2. Self-demanding	2. Takes it easy	1	6	6	2	2	5	6	3	5	6	4	5	4
3. Fearful	3. Enterprising	2	2	6	2	4	5	6	5	2	3	4	5	5
4. Lives to work	4. Works to live	5	1	2	2	6	6	6	1	6	7	6	6	7
5. Imposes his/her wishes	5. Tolerant with others	6	2	1	1	4	3	6	1	7	3	4	2	7
6. Teasing	6. Touchy	2	7	1	6	4	3	4	6	3	3	5	6	3
7. Appreciates others	7. Does not appreciate others	2	6	6	6	1	5	4	7	4	2	2	5	1
8. Aggressive	8. Calm	6	4	2	2	7	4	6	2	6	6	6	3	7
9. Concerned about others	9. Selfish	2	2	6	7	2	3	5	7	3	3	2	2	2
10. Avaricious	10. Generous	6	1	1	1	7	5	5	1	6	3	3	6	7
11. Sensitive	11. Materialistic, superficial	1	5	7	7	1	4	5	7	1	4	3	4	1
12. Cheeky	12. Respectful	6	6	5	4	6	6	6	1	6	5	6	5	7
13. Hypocritical	13. Sincere	5	4	4	2	6	5	5	1	6	6	5	4	7
14. Blackmailer	14. Non blackmailer	3	2	2	1	5	6	6	1	6	6	6	3	7
15. Appears stronger than is	15. Natural	6	3	1	2	5	2	4	2	7	6	6	5	6
16. Does not look after the friendship	16. Looks after the friendship	6	3	3	3	6	2	1	2	4	4	6	4	7
17. Non Accessible	17. Accessible	5	2	2	1	4	2	4	1	6	3	5	2	7
18. Introverted	18. Extroverted	1	2	6	2	4	5	7	5	2	6	6	5	5
19. Gets depressed easily	19. Does not get depressed easily	1	2	6	3	6	3	7	6	1	3	3	3	6
20. Tries to find the good in things	20. Sees only the negative	6	6	4	6	1	5	2	7	6	3	3	5	1

Figure 1. Example of a repertory grid. *Note.* Reproduced from Feixas et al. (April, 2012)

From the mathematical analysis of the resulting grid data matrix, several indexes about respondents' cognitive structure can be obtained, such as cognitive differentiation (uni/multidimensional thinking), polarised construing, self-ideal discrepancy, perception of social isolation, idealised perception of others, and conflictual construction of the self. Specialised software was developed to analyse repertory grid data and to detect CCs (Feixas & Cornejo, 2002). Two types of CCs can be detected with the RGT: Implicative dilemmas (IDs), and dilemmatic constructs (DCs). To establish the presence of an ID, in the first step discrepant constructs (those in which the ideal self is different from the current self) and congruent constructs (in which the present self is similar to the ideal self) are detected. Then, the correlations between discrepant and congruent constructs are analysed in pairs; an ID is identified whenever the desirable pole of the discrepant construct correlates with the undesired pole of the congruent construct. Therefore, a desirable change in one construct implies an undesirable change in the

other. In DCs, the "ideal self" is rated at the midpoint. This rating could imply that both

poles of the construct comprise both desirable and undesirable characteristics for the

person. Figure 2 shows the same repertory grid of the example in figure 1, representing

an ID with their congruent and discrepant construct, and a DC.
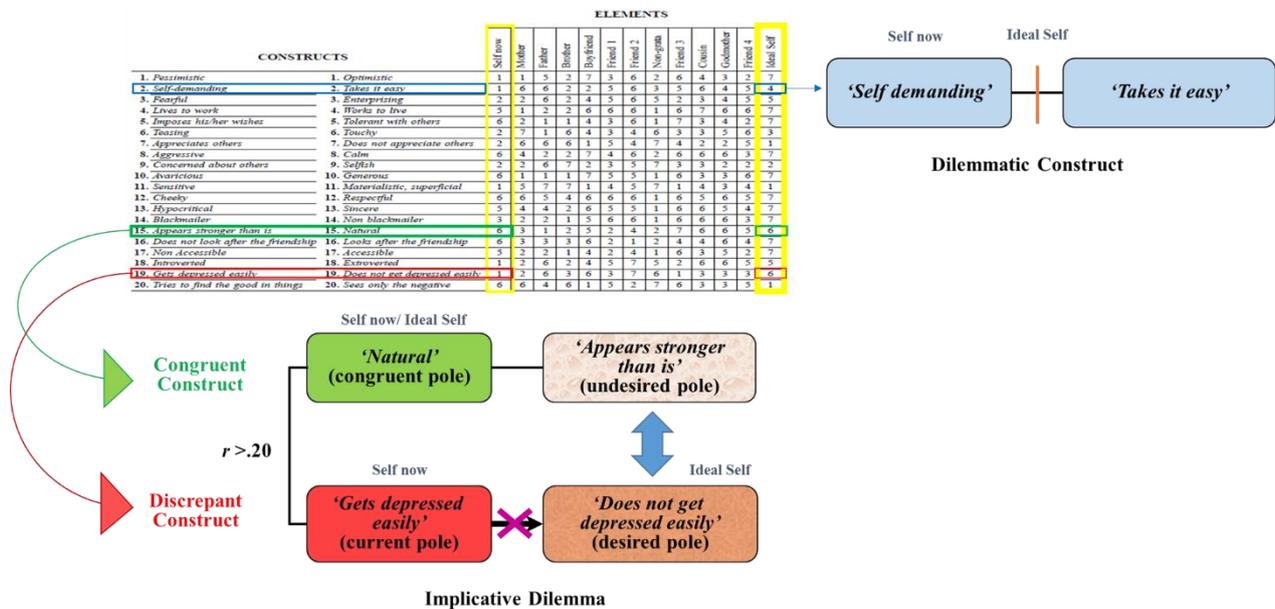
Figure 2. Schematic representation of an implicative dilemma and a dilemmatic

construct. *Note.* Adapted from Feixas et al. (April, 2012)

Conceiving CCs as dilemmas, several studies have reported the value of IDs for

understanding psychological distress in a variety of clinical conditions (Montesano,

López-González, Saúl, & Feixas, 2015). In particular, in people with depression, the

presence of IDs was higher than in control groups (Feixas et al., 2014; Montesano et al.,

2014), and depressed patients with IDs presented lower levels of global functioning and

more frequent history of suicide attempts. Moreover, IDs together with large self-ideal

discrepancy explained around 32 – 43% of the variance of symptom severity in patients

with depression (Montesano, Feixas, Caspar, & Winter, 2017). Regarding the effects of

psychotherapy on IDs, it has been found that patients who presented IDs at baseline tended to resolve them by the end of the treatment independently of the psychotherapy approach (Feixas, Saúl, Winter, & Watson, 2008). Moreover, in cases who did not resolve these conflicts, there was fewer symptoms improvement. This background jointly with the relevance of these dilemmas for the understanding of depressive symptoms led Feixas and Compañ (2015, 2016) to design DFT as a specific intervention, targeted to resolve these conflicts.

Before explaining how DFT works, it should be pointed out that, by no means, CCs are conceived as a causal variable or as the only maintenance factor of depression, but as a cognitive structure that may hinder the process of change (Feixas, 2013). In this sense, we are not talking about a psychopathological variable, but about a psychological factor that has been related to psychopathology as we pointed out in section 1.2.1.

DFT is a treatment module that can be added to traditional CBT for depression (or even to other therapies) and aims to address CCs that might affect depressed patients by hindering their change process. In general terms, DFT begins with the analysis of the patient's complaints and how they are related to his/her CCs (previously identified with the RGT). For instance, one initial task is to reframe the problematic situation or symptoms in terms of one or more dilemmas. Once both patient and therapist agree on a dilemma to serve as a target for the therapy, its implications are explored across a range of intra- and interpersonal situations, and across the patient's personal history. The final sessions are oriented towards the resolution of the dilemma(s) and the formulation of prospects of a life without them. DFT techniques are based on constructivist therapies (Neimeyer, 2009; Neimeyer & Mahoney, 1995), which are focused on the elaboration of personal meanings, and especially personal construct psychotherapy (PCPT; Kelly,

1955/1991; Winter & Viney, 2005). They also include an adaptation of the two-chair

dialogue (Greenberg, Rice, & Elliott, 1993).

The project led by Feixas et al. (2013, 2016, 2018) was a multi-centre RCT that

tested whether the efficacy of traditional CBT for depression could be enhanced with

the addition of DFT. For this purpose, patients first received seven sessions of CBGT

before being randomly allocated to one type of individual cognitive therapy (traditional

CBT or DFT) of eight sessions each. Therefore, in one arm of the RCT patients

continued with traditional CBT for depression, receiving CBGT and individual CBT,

while in the other arm, patients continued with DFT after receiving CBGT. In this way,

any putative enhanced effect of DFT on CBGT could be observed. Therefore, two

conditions of treatment were compared: CBGT plus individual CBT vs CBGT plus

individual DFT. In both treatment arms, a final session of CBGT focused on relapse

prevention was carried out. The results showed that both conditions obtained

comparable results to those in the literature. Thus, no differential effect of DFT as

compared to standard CBT was demonstrated. Additionally, both treatment conditions

resolved CCs in the same proportion. Hence, CCs resolution did not depend on

treatment allocation. However, patients who resolved their CCs obtained greater

improvement than those who did not (Paz, Montesano, Winter, & Feixas, 2019).

In terms of efficacy, and being a superiority study, it had serious limitations.

According to the literature on dose-effect (Baldwin, Berkeljon, Atkins, Olsen, &

Nielsen, 2009; Howard, Kopta, Krause, & Orlinsky, 1986) and early response (Lutz,

Stulz, & Köck, 2009; Owen et al., 2015), the majority of patients experience the

majority of change along the first eight sessions of therapy (Duncan, 2014). Therefore,

it was expectable that in the first phase of the treatment (7 sessions of CBGT), patients

obtained the greatest improvement, for then continuing to improve at a slower pace in

the second phase (8 sessions of individual cognitive therapy). Hence, to find a tiny difference regarding effect size at the end of the second phase, a big sample size was required for a sufficiently powered analysis capable to detect differences between groups (Tamayo-Sarver, Albert, Tamayo-Sarver, & Cydulka, 2005). That was not the case in this study.

Despite these limitations, the case of DFT is a believable reflection of the results obtained by other studies that took the initiative of studying factors related to psychopathology aimed at improving psychotherapy for depression. That is, a psychological factor that has demonstrated to be related to depression in clinical samples is addressed in a treatment component as the target of psychotherapy. In this sense, the results obtained go in line with previous studies, and with what was pointed out by Castonguay (2011), different approaches to psychotherapy are not specific to change the target variable they say to change according to their model. Accordingly, CCs have been resolved in successful cases of psychotherapy independently of the approach, and symptoms improvement seem to be related to CCs resolution. Therefore, seems that the dodo bird is saying again "everybody has won, all must have prizes".

1.3 Patient-Focused Research and Treatment Personalisation

Efficacy and effectiveness studies can be considered treatment-focused research (Lutz, 2002) because both designs deal with the question of outcome regarding a particular model of treatment for a specific clinical condition. The results of both types of studies can inform to clinicians that a particular treatment is likely to work for a group of patients, but not if the selected treatment is working or not for a particular patient (Lutz, 2003). Indeed, the application of an evidence-based treatment alone,

which on average has shown to be efficacious and/or effective in RCTs and/or naturalistic studies, respectively, does not guarantee that the provided treatment is the appropriate for a particular case (Howard, Moras, Brill, Martinovich, & Lutz, 1996; Rubel, Lutz, & Schulte, 2015). Patient-focused research is concerned with the question: is this treatment working for this patient at this moment? Related to this question, are the questions stated by Gordon Paul (1967) more than fifty years ago: "*what* treatment, by *whom*, is most effective for *this* individual with *that* specific problem, and under *which* set of circumstances?" (p. 111). These are the questions that treatment personalisation strives to answer.

Traditional research in psychotherapy outcomes for depression is based on pre-to-post comparisons (Bortolotti, Menchetti, Bellini, Montaguti, & Berardi, 2008). These designs assume a linear, straightforward pattern of change between the two-time points of assessment (with one additional follow-up assessment, or two in the case of Feixas et al, 2016, 2018). In terms of outcomes, what happens during the treatment remains as a "black box" that is not taken into account in the results; thus, meaningful differences in individual treatment courses, or change patterns, remain masked or hidden (Lutz et al., 2009). In this regard, similar effects of different treatments do not necessarily imply that there are no identifiable differences in effects on individuals or subpopulations within a sample (Cuijpers, van Lier, van Straten, & Donker, 2005). Founded on the idea of identifying these differences, patient-focused research in psychotherapy is designed to predict, model and monitor individual treatment progress, providing the therapist and the patient with accurate feedback based on this information during the course of the treatment (Lambert, Hansen, & Finch, 2001; Lutz, De Jong, & Rubel, 2015).

Different phenomena concerning different patterns of change have been studied with diverse methodologies, proposing diverse models for studying change. For

instance, in terms of continuous patterns of change, general trajectories have been studied. Regarding discontinuous patterns, early response, sudden gain and sudden losses are the phenomena more examined (Hayes, Laurenceau, Feldman, Strauss, & Cardaciotto, 2007).

Early response corresponds to a significant decreasing in symptoms at early stages of treatment. Sudden gains and sudden losses represent a sudden shift of the trajectory that the patient is following over relatively short intervals during the treatment, resulting in a significant improvement (sudden gains) or deterioration (sudden losses) of the levels of symptoms (Lutz et al., 2013).

Considering that we are interested in analysing the differential response of patients of the study of Feixas et al. (2013) with respect to group and individual therapy, we will focus on general trajectories and early response.

1.3.1 Focusing on trajectories and patterns of change.

Trajectories of patient change have several decades of history in psychotherapy research (Owen et al., 2015). They were first studied through dose-effects models (Baldwin et al., 2009; Howard et al., 1986), which established a relationship between the log number of session (dose) and the probability of patient improvement (effect). An extension of these models was conceptualised as a phase model, where specific dimensions of outcome were assessed to study how they change sequentially along different phases of the treatment (i.e., *remoralisation*, enhancing of well-being; *remediation,* achievement of symptomatic relief; *rehabilitation*, improvement of functioning through the reduction of maladaptive psychological patterns, Howard, Lueger, Maling, & Martinovich, 1993). A negatively accelerated curve was obtained by

these models, which was explained as the increasing difficulty of achieving the treatment goals throughout therapy (Castonguay, Barkham, Lutz, & McAleavey, 2013; Lutz, 2003). The problem with these models is that the trajectories studied are from the average of patients, while patterns of change for the individual can vary significantly from the average trend.

Founded on the idea of capturing the individuality of the patterns of change, models which estimate an expected trajectory of recovery for each patient from their baseline characteristics have been investigated. These are the models of expected treatment response (ETR). Indeed, through these models, patient-focused research was born (Howard et al., 1996). On this purpose, growth curves through hierarchical linear modelling (HLM; also called mixed linear models, MLM) have been implemented. The treatment outcome of the patient is modelled throughout therapy as a polynomic function (e.g., log-linear) of session number, and patient intake characteristics are used as predictors. Hence, an expected trajectory for each patient at the beginning of the treatment can be estimated (Castonguay et al., 2013). Therefore, the ongoing therapeutic effectiveness can be assessed for each patient, comparing the patient's actual progress with the expected trajectory. These models have been implemented in clinical practice with instruments for routine outcome monitoring (ROM; Boswell, Kraus, Miller, & Lambert, 2015) such as the Outcome Questionnaire – 45 (OQ-45; Lambert et al., 1996), the Clinical Outcome in Routine Evaluation (CORE; Evans et al., 2000; Trujillo et al., 2016), and the Outcome Rating Scale (ORS; Miller, Duncan, Sparks, & Claud, 2003; Moggia, Niño-Robles, Miller, & Feixas, 2018). With these questionnaires, computerised feedback systems have been created to support clinical decision making, informing the clinician whether the treatment is working for a particular patient (Lambert et al., 2001).

Growth curves through HLM have the limitation that they assume that all members of the sample come from the same population. In this sense, an estimated trajectory does not allow for heterogeneous subgroups to exist within a sample (Kilmer, 2017). To address this issue, Lutz et al. (2005) have used cluster analysis with the nearest neighbours (NN) algorithm. To compute a model from patient's intake characteristics, the most similar previous treated cases are selected from a sample with this procedure. Thus, similarity among patients is defined through Euclidean distances between the selected variables. When the subgroups of more similar patients are identified, the expected trajectory is computed. It has been demonstrated that, with this methodology, more accurate models than traditional ETR models are estimated, contributing to a better prediction of treatment success, failure and duration (Lutz, Lambert, et al., 2006; Lutz, Saunders, et al., 2006).

Certainly, heterogeneity may exist due to individual differences coming from different subpopulations within the sample. A method which may operate without assuming homogeneity of the sample is growth mixture modelling (GMM; Muthén, 2004). GMM is based on latent growth models (structural equation modelling [SEM] framework) where slopes and intercepts are estimated as latent variables in which values depend on the means of the time-point observations (Wickrama, Lee, O'Neal, & Lorenz, 2016). GMM goes beyond, allowing the identification of multiple unobserved subpopulations in longitudinal data. In GMM an additional latent categorical variable is included that accounts for sample heterogeneity, capturing individual differences in intake scores (intercepts) and change parameters (slope) in terms of fixed and random effects (Ram & Grimm, 2009). GMM allows researchers to test for an a priori unknown number of latent subpopulations (clusters or classes). Through the goodness of fit

indexes, diverse models can be compared and, thus, the model with the number of classes that better fit with the data can be determined.

GMM has been used to analyse data from naturalistic psychotherapy studies (Stulz & Lutz, 2007; Stulz, Lutz, Leach, Lucock, & Barkham, 2007) and RCTs (Lutz et al., 2009; Muthén, Brown, Hunter, Cook, & Leuchter, 2011). One of the advantages of this method is that allows to track not only general trajectories but also patterns of discontinuous change such as clusters of early and late improvers.

Several studies researching trajectories and patterns of change in treatments for depression have been published (Bogner, Morales, Reynolds, Cary, & Bruce, 2012; Cui, Lyness, Tang, Tu, & Conwell, 2008; Cuijpers et al., 2005; Dew et al., 1997, 2001; Gildengers et al., 2005; Kelley et al., 2018; Liang, Xu, Quiñones, Bennett, & Ye, 2011; Lutz et al., 2017; Rubel et al., 2015; Sakurai et al., 2013; Schlagert & Hiller, 2017; Stulz, Thase, Klein, Manber, & Crits-Christoph, 2010; Thibodeau et al., 2015; Vittengl, Clark, Thase, & Jarrett, 2013; Wardenaar, Conradi, & de Jonge, 2014; for a comprehensive review including studies until 2015, see Kilmer, 2017). They used diverse statistical methodologies such as HLM, cluster analyses, and GMM. The samples were quite diverse. In the majority of studies, patients come from outpatient clinics, and samples were different in group age (e.g., teenagers, adults, and elderly patients). The treatments duration was between six and 16 weeks, and follow-up assessments were between six months and two years. The treatment approaches were different, mainly including, CBT, IPT, and pharmacotherapy. The outcome measures utilised in most of the studies were for depression symptom severity, while general symptoms and psychological distress were used in other studies as well. Taken together, the patterns found in these studies can be summarised in five clusters of patients: early responders, late responders, moderate or steady responders, non-responders, and

worsening. These results are consistent with the idea that patients receiving psychotherapy for depression are not a homogenous group (Fried, 2017; Lorenzo-Luaces, 2018).

The previous studies have limitations regarding the replicability of the results, the ecological validity, and the comparisons we can make among them. This is because the diversity of statistical techniques utilised produce a wide variety of pattern clusters, differing in type and number of trajectories. Other limitations come from the specifications of the designs, which include, high controlled paradigms; inclusion of a single diagnosis of MDD excluding co-morbidities; high standardisation of treatment protocols; assessment of symptoms at different time-points; small samples sizes; and different criteria for the selection of predictors (Kilmer, 2017).

Beyond depression, a polemic pattern cluster that has been reported in some studies is "getting worse before getting better" (Foa, Zoellner, Feeny, Hembree, & Alvarez-Conrad, 2002; Owen et al., 2015). These were patients who showed worsening at the beginning of therapy, for then starting to improve, obtaining a good outcome at the end of the treatment. This pattern has been found in exposure-based trauma treatment (Foa et al., 2002), and in a naturalistic sample of 10,854 patients with mixed diagnosis (Owen et al., 2015). In this latter study, the commented pattern represented the 5.4% of the sample against "early and late changers" (75.3%), and "slow and steady changers" (19.3%). Patients of the group "getting worse before getting better", showed the lowest initial psychological functioning compared to others groups. Considering the design, no other distinctive characteristic was found for these patients. Altogether, according to the literature reviewed for this dissertation, to date, this pattern has not been reported in treatments for depression.

In summary, the results of the previous studies support for the idea that patients receiving psychotherapy for depression are not a homogenous group. Moreover, some patients benefit more than others, whose profile can be identified in early stages of treatment.

1.3.2 Focusing on early response.

Based on the idea of improving the models used to predict trajectories, patterns of change, and treatment outcome, researchers have looked at patterns of early response, which are related to different final outcomes (Lambert, 2005; Lutz et al., 2017; Schlagert & Hiller, 2017; Van et al., 2008). Early response in psychotherapy has been studied from different perspectives and with diverse methodologies, and there is no current consensus on the definition of the phenomenon (Rubel et al., 2014). For instance, some authors (Ilardi & Craighead, 1994) defined it as a significant drop of symptoms by the fourth session, followed by a flat linear trajectory. Others (Stewart et al., 1998) conceived it as psychopathology being absent or minimal after two weeks of treatment, or as a minimum percentage of improvement across a pre-defined number of sessions at the beginning of treatment (Hayes, Feldman, et al., 2007). Furthermore, early response can be studied with rationally- (e.g., Jacobson and Truax's, 1991, reliable and clinically significant change criteria) or empirically- (e.g., ETR, NN, GMM) derived methods.

Regardless of the operationalised definition and the method used, most patients who show substantial improvement early in treatment obtain better outcomes at termination and follow-up than later improvers. In other words, early responders need fewer sessions to achieve steady improvement and are, therefore, more likely to

terminate treatment earlier (Haas, Hill, Lambert, & Morrell, 2002). Indeed, this results

have been obtained with different samples in terms of age (e.g. teenagers, adults, and

elderly patients; Gunlicks-Stoessel & Mufson, 2011; Kok, van Baarsen, Nolen, &

Heeren, 2009), diagnosis (e.g. depression, anxiety, and eating disorders; Aderka,

Nickerson, Bøe, & Hofmann, 2012; Bradford et al., 2011; Nazar et al., 2017; Van et al.,

2008), and psychotherapy modality (e.g. low and high intensity treatments; Lutz et al.,

2017; National Collaborating Centre for Mental Health, 2011).

Indeed, early response has shown to be a powerful predictor of treatment

outcome, supporting the value of identifying patients at risk of treatment failure at an

early stage in treatment. The study of early patterns of change provides the therapist

with feedback on the patient's trajectory, especially when at risk of not improving,

deteriorating, or dropping out. Certainly, the identification of different patterns of

change in the treatment of depression may provide valuable information about the

course that different subpopulations of patients follow, their characteristics, and the

stages of treatment that involve the greatest risk of failure (Delgadillo, Moreea, & Lutz,

2016). In the context of personalised medicine, the study of early response constitutes a

valuable grounding for supporting clinical decisions and interventions tailored to the

individual patient, based on their predicted response or risk.

1.3.3 Treatment personalisation.

All the research described in this section so far aims not only to study patterns of

change to acquire more knowledge about psychotherapy but to treatment

personalisation. Thus, tailoring the interventions to the idiosyncratic characteristics of

the patient, with the goal of offering the most effective treatment as possible according to the patient's characteristics.

In the field of health sciences, the term of personalised medicine or precision medicine has received considerable attention, and in the field of mental health, in particular, personalised care or tailored mental health (Müller et al., 2018). These terms define a health model that aims to identify the optimal treatment for each individual, taking into account her or his singularity, and the viability of adapting the therapeutic strategy along the course of treatment. It does not necessarily mean the creation of treatments that are unique to an individualised patient, but the ability to classify individuals into subpopulations that differ in their susceptibility, prognosis and response to a specific treatment (National Research Council, 2011).

The statistical models used for treatment personalisation incorporate different variables as predictors. These are of two kinds: prescriptive or prognostic (Cohen & DeRubeis, 2018). Prescriptive variables influence the direction or strength of the difference in outcome between two or more treatments. They are also known as moderators. Alternatively, prognostic variables influence the course of a given treatment, predicting the response in a single treatment or irrespective of the treatment condition. Depending on the research context, the same variable can work as prescriptive or prognostic. As was stated before, most studies of treatment outcome for depression come from pre-to-post comparisons. For these studies, strategies aimed to decide which one of two or more treatments work better for a patient using prescriptive variables are implemented (e.g., Personalised Advantage Index, PAI; Cohen, Kim, Van, Dekker, & Driessen, 2019; DeRubeis et al., 2014;). These methods have been applied to data generated by previous studies with post-hoc analyses. A research design testing the efficacy of these methods in a prospective study has not been conducted yet (Müller

et al., 2018). On the other hand, models that predict trajectories or patterns of change use prognostic variables (e.g., models based on ETR or NN). The application of these models in efficacy and effectiveness studies is described hereafter.

Several criteria to select predictors have been investigated with a variety of methods. For instance, some researchers used the analysis of covariance or correlations between the candidate variables, statistical differences between predefined clusters of patients in these variables, cluster analyses, or even artificial intelligence and machine learning algorithms (e.g., Lee et al., 2018). Cohen and DeRubeis (2018) have systematised a series of recommendations for building treatment selection models for depression. They pointed out that variables indicated by previous research as predictors of treatment outcome should be included in the tested models. Variables also should not have significant missing data and must exhibit sufficient variability ensuring low collinearity. Furthermore, they recommended centring variables to avoid inferential errors and to increase the stability of the models when dealing with regression-based approaches.

The most used variables to predict treatment outcome and patterns of change in psychotherapy for depression (Bogner et al., 2012; Bryan et al., 2012; Callahan & Hynan, 2005; Cui et al., 2008; Cuijpers et al., 2005; Dew et al., 1997; Gildengers et al., 2005; Gude & Havik, 2000; Howard et al., 1986; Ilardi & Craighead, 1994; Liang et al., 2011; Lutz et al., 2009; Stulz & Lutz, 2007; Stulz et al., 2010; Thase et al., 1997; Thibodeau et al., 2015; Wardenaar et al., 2014) are demographic variables such as age, ethnicity, socioeconomic status, marital status; social and relational factors such as social support and family functioning; variables related to personality such as introversion, emotional stability, self-esteem; physical health status, stress, and medical burden; mental health history such as pre-treatment hospitalisations; and clinical

condition (baseline depression symptoms severity, comorbidity, and history of depression). Altogether, information about patterns of change (trajectories) in treatments for depression and factors predicting varying courses of treatment are sparse and further research is required.

In clinical practice, it has been reported (Ægisdóttir et al., 2006; Bar-Kalifa et al., 2016; Hannan et al., 2005) that psychotherapists are not good on identifying patients' prognosis and, patients that are not improving, deteriorating or in risk of dropping out along the course of treatment. In this respect, systems of feedback using ETR or NN models have been designed and implemented to provide information about each patient's progress, giving to the clinician the opportunity to correct the course of the treatment in case of risk. Studies about the added efficacy of implementing feedback systems in clinical practice (feedback informed treatment, FIT; Prescott, Maeschalck, & Miller, 2017; or ROM-assisted psychotherapy; Boswell et al., 2015; Carlier et al., 2012; Delgadillo et al., 2017; Janse, De Jong, Van Dijk, Hutschemaekers, & Verbraak, 2017; Kendrick et al., 2016; Knaup, Koesters, Schoefer, Becker, & Puschner, 2009; Lambert, Whipple, & Kleinstäuber, 2018; Miller, Duncan, & Sorrell, 2006; Reese, Norsworthy, & Rowlands, 2009; Shimokawa, Lambert, & Smart, 2010) have shown that providing this feedback does not increase the effect for patients who already respond, but for patients who are in risk ("not on track" patients) the treatment become more efficacious, effective, and efficient (patients achieve improvements early in treatment). For depression, studies testing the efficacy and effectiveness of FIT (Connolly Gibbons et al., 2015; Delgadillo et al., 2018) showed that not on track patients had less severe symptoms after treatment and responded early compared to patients that received psychotherapy without a feedback system.

Based on the previous information, it seems that treatment personalisation, particularly FIT, is a good strategy for increasing the efficacy, effectiveness and efficiency of psychotherapy for depression, especially for patients who are in risk of not responding to treatment.

Altogether, models for treatment personalisation of depression there are still showing small to medium effect sizes in the contribution of their predictors. In fact, in a meta-analysis, Cuijpers et al. (2016) estimated that it would take another 326 years to have sufficient statistical power for showing an effect size of $g = .50$ of the variables analysed (sociodemographic characteristics, comorbidity, symptoms, and treatment characteristics) and 1,372 years to show an effect size of .24. Under this background, it seems that there is still room for improving the predictive models utilised. In this respect, it has been argued that predictive models not only should consider symptom measures but measures about psychological processes underlying symptoms (Andrews & Williams, 2014). In this regard, as the RGT was used in the study by Feixas et al. (2016, 2018) RCT, and considering that some of their indexes have been related to psychological processes underlying depression (Feixas et al., 2014; Montesano et al., 2014, 2017), we considered that the RGT has promising potential for treatment personalisation.

1.4 The Repertory Grid Technique as a Tool for Treatment Personalisation

The theoretical foundations of the RGT and how it is applied have been explained already (see section 1.2.3). Broadly speaking, is a constructivist assessment methodology (Neimeyer, 1993) which allows the exploration of the construct system of the person. Constructivist approaches to psychology and psychotherapy share a

common principle: humans do not have direct access to a stable, singular, and entirely knowable external reality. On the contrary, our access to reality is limited by our knowledge structures, embedded in context, and relationally constructed. We as human beings are continuously and actively construing reality through our personal meanings. In this respect, constructivist assessment methodologies are oriented to study how the subject interprets reality according to his/her own personal meanings.

Traditionally, constructivist approaches in concordance with their assumptions, have privileged idiosyncratic assessment methods ($n = 1$). However, scientific enterprise works constructing nomothetic knowledge. In fact, idiosyncratic vs. nomothetic is an old controversy in psychology which has polarised the discipline in more than one occasion. For Feixas and Villegas (2000), PCT resolved this issue postulating general processes of construction for all human beings, while the content of such processes is idiosyncratic and unique for each individual. Regarding their methods, PCT has developed a general methodology that allows the systematic study of a single case. Thus, as a theory of processes of knowledge construction for all human beings, PCT is perfectly designed for capturing the contents of a person in particular. In this sense, the RGT is an assessment tool designed to capture idiosyncratic individual contents settled in nomothetic cognitive processes and structures. From this point of view, it seems that the RGT fits with the agenda of personalised medicine; that is, offering a series of indexes that are based on the individualised characteristics of the patient, which can be further utilised to identify subgroups of subpopulations based on their common cognitive processes and structures.

Traditionally, the RGT has been used for case formulation (Feixas, De La Fuente, & Soldevila, 2003) as a way of "seeing the world through clients' eyes" (Winter & Procter, 2014). In this respect, the RGT allows the clinician to understand how

patients define and construct themselves and their significant others, whether they construct their interpersonal world in a polarised or loose way, how rich and differentiated is their way of construing, and which are their CCs, which could be hindering their change process, if any. Based on this information, the therapist can develop a case formulation to select and adapt the treatment to the psychological distinctiveness of each patient.

Many studies have been published using the RGT as a psychotherapy research measure (for a detailed review see Winter, 2003). Some of these studies have used the indexes of the RGT as predictors for treatment outcome, setting the bases for further research on treatment personalisation based on the RGT.

Moreover, the most studied patients' characteristics assessed with the RGT that have been used as predictors for treatment outcome are cognitive differentiation (particularly, tight or unidimensional construing), implications of symptomatic constructions, construction of the self (e.g., self-ideal discrepancy, differences between the construing of the past and the present self), construction of others (e.g., self-others dissimilarity, construction of the partner, tight or loose construing of others, similarity between client and therapist constructions), and CCs.

For instance, several studies have found that low cognitive differentiation (tight or unidimensional construing) acted as a predictor of poor treatment outcome in group therapy for alcohol abuse (Orford, 1974; low cognitive differentiation predicted drop-out), behavioural therapy for agoraphobia (Winter & Gournay, 1987), psychotherapy for inpatients with anorexia (Button, 1983), group (Winter, 1983) and individual analytic therapy (Carr, 1974), and PCPT (Morris, 1977). Nevertheless, one study found that a

tight construing predicted bad outcome in group analytic therapy, but good outcome in behavioural therapy (Winter, 1983).

In terms of implications of symptomatic constructions, patients for whom their constructs concerning the symptoms had fewer implications improved more during group analytic therapy than patients who had more implications. The opposite was found in behavioural therapy (Winter, 1983). This difference was explained arguing that patients construing their symptoms as central for their identity were only likely to find meaningful, and respond to, a therapeutic approach focused on their symptoms (e.g., behavioural therapy). The work of Fransella (1972) on stuttering suggests that the higher the implications of losing symptoms, the more likely patients are to respond to treatment. The same was found on anorexia (Fransella & Button, 1983). Similarly, in long-stay psychiatric inpatients, the more highly elaborated were their construing of their life outside hospital, the more likely patients were able to conduct their life successfully after being discharged from long-term hospitalisation (Winter, Goggins, Baker, & Metcalfe, 1996). In behavioural therapy for social anxiety, it have been found that cases which the construction of symptom cessation implied little change on their other constructs, were more likely to improve (McKain, Glass, Arnkoff, Sydnor-Greenberg, & Shea, 1988). More important than the number of implications is the nature of them, because it has been found that if symptoms have positive implications for patients, they were less likely to respond to treatment (Leitner & Grant, 1982; Winter, 1988).

A positive self-construing and a low self-others discrepancy have showed to predict good outcome in individual (Carr & Whittenbaugh, 1969) and group (Caine, Wijesinghe, & Winter, 1981) therapy. However, other studies in group (Caine et al., 1981; Landfield, 1977) and biofeedback therapy (Large, 1985) reported that patients

who constructed themselves more negatively, were the most responsive patients. In this regard, the authors have speculated that these patients were thus most motivated to change. Studies in both anorexia (Button, 1983) and agoraphobia (Winter & Gournay, 1987) found that a good predictor for treatment outcome was the difference between the construing of the past and the present self, particularly a positive construction of the past self. The authors concluded that patients were more able to improve if they had a positive alternative construction of the self, based on a symptom-free past experience than an idealistic fantasy of a symptom-free life. In agoraphobia again (Winter & Gournay, 1987), it was found that therapeutic improvement was predicted also by a positive construction of their partners.

Regarding the construction of others, in group therapy for incest survivors, the construction of other group members in a non-polarised way, and the identification with other group members, including the therapists, were predictive of good outcome (Neimeyer, Harter, & Alexander, 1991). Additionally, patients who had similar constructs to their therapist tended to respond better to psychotherapy than those who did not (Landfield, 1971).

In cognitive-constructivist psychotherapy in primary care (Pucurull, 2015), it has been found that patients who begin the treatment with low cognitive differentiation tended to increase it by the end of therapy (they acquired a multidimensional way of construing). The opposite trend was found for patients who started therapy with high cognitive differentiation (at the end of therapy their way of construing tended to be unidimensional). These changes in cognitive differentiation were associated with decreasing in the levels of symptoms for both cases. Additionally, polarisation (tendency to a black-or-white way of construing) tended to decrease by the end of therapy associated with symptoms improvement also. Furthermore, patients who had

one or more IDs at intake and resolved them by treatment termination, obtained higher

effect sizes in symptoms improvement than patients who did not resolve them, or those

who did not present them at the beginning of therapy.

Finally, in depression, patients who resolved their CCs after psychotherapy

acquired greater benefits with regard to reduction of depressive symptoms and

psychological distress than those who maintained them (Paz et al., 2019). Indeed, the

resolution of CCs after treatment predicted symptoms improvement (especially at 3-

month follow-up), and not the other way around (Paz, 2016).

The studies using the indexes of the RGT for predicting treatment outcome have

limitations regarding their design and statistical power. Most of them correspond to

effectiveness studies where the treatment conditions were not manualised. The

administration protocol of the RGT vary from one study to another, producing grids

with different types of elements and constructs; therefore, the indexes are not

comparable because they are capturing different aspects of the cognitive structure and

the construing processes of the subjects. These two flaws produce problems regarding

replicability. Furthermore, the majority of the studies have small sample sizes producing

limitations concerning the statistical power and the generalisation of the results. The

exception to these limitations come from the work of Feixas et al. (2009) in which the

administration protocol of the RGT has been systematised and formalised, producing

replicable results, especially concerning the detection of IDs. It is from this seminal

work that all research commented so far about CCs and DFT has been produced.

While it is true that the studies using the indexes of the RGT for predicting

treatment outcome have some limitations, we consider that the RGT has good potential

for providing measures for treatment personalisation. This is not just because,

theoretically, it is an assessment method designed for such purpose, but also because, empirically, their indexes have been related to psychological processes and structures that may be associated to symptoms and, also, have been utilised for predicting treatment outcome with promising results, although they require further investigation.

2. Rationale

The previous chapter can be summarised in the following statements that work as rationale for the research conducted:

- Depression is one of the most important mental health problems worldwide and is one of the leading causes of disability.

- Several studies have demonstrated that psychotherapy is an effective and efficacious treatment for depression.

- Despite their contrasted effectiveness and efficacy, responses remain approximately at 50%, and recurrences and relapses are often.

- Comparing group and individual therapy for depression, it has been found that group therapy is more effective than TAU but can be less effective than individual therapy at the end of treatment for more severe patients, while no differences were found at follow-up.

- Several attempts have been made to increase the efficacy and effectiveness of psychotherapy for depression. Addressing factors related to psychopathology, enhancing psychotherapy process factors, patient-focused research and treatment personalisation are the main initiatives taken by the researchers.

- DFT is a treatment module that can be added to traditional CBT for depression. It was designed under the initiative of addressing factors related to psychopathology, particularly CCs.

- Research on CCs, particularly IDs, have related the presence of CCs to psychological distress in several clinical conditions. In depression, the presence of IDs was higher than in control groups, and patients with IDs presented lower levels of global functioning and more frequent history of suicide attempts. IDs

together with low levels of self-esteem explained around 32 – 43% of the variance of symptom severity in patients with depression.

- The added efficacy of DFT to CBGT for depression was tested in a RCT. Two conditions of treatment were compared, CBGT plus individual CBT vs CBGT plus individual DFT. The results showed that both conditions obtained equivalent results, thus both resulted equally efficacious. Additionally, both treatment conditions resolved CCs in the same proportion. Hence, CCs resolution did not depend on treatment allocation. However, patients who resolved their CCs obtained greater improvement than those who did not.

- In the previous study, a measure of depression was used as primary outcome, and general functioning, psychological distress, and indexes from the RGT were used secondarily.

- Patient-focused research and treatment personalisation aim to identify if a particular treatment is working or not for a particular patient, and to identify factors from patient's characteristics that allow to predict treatment effectiveness for a patient in particular.

- While other initiatives tended to fail, it seems that patient-focused research and treatment personalisation is a promising strategy to enhance psychotherapy for depression.

- General trajectories of change and early response are the change patterns most studied to classify patients regarding their response, to monitor and predict treatment outcome.

- Different methods have been employed to select predictors from patients' pre-treatment characteristics.

- The most used predictors are sociodemographic and clinical characteristics, and symptom measures at intake. While predictive models for treatment personalisation are promising, there is still room for improvement.

- To consider measures of processes underlying symptoms has been suggested in order to enhance predictive models.

- The RGT is an assessment method that has promising potential for treatment personalisation because its indexes have been associated to psychological processes underlying symptoms of depression, and to different treatment outcomes.

2.1 Justification

As was previously explained, the current research was aimed at studying the patterns of change followed by the patients in the study by Feixas et al. (2013, 2016, 2018). The relevance of studying these patterns in terms of trajectories relies on the fact that pre-to-post comparisons (or with one or two additional follow-up assessments) can mask what happened in between, during the treatment, regarding outcome. Along with the contributions of patient-focused research, tracking the patterns of change permits the identification of different clinical subpopulations and individual differences in terms of change patterns. This contribution not only increases our knowledge about the course different patients follow in psychotherapy, but also provides researchers and clinicians with information for predicting, modelling and monitoring individual treatment progress during an ongoing course of treatment. With feedback systems which incorporate this information, the trajectories that patients might follow could be predicted, and clinicians can monitor the patient's progress by comparing the observed and the predicted

response, thus having the opportunity to correct the course of the treatment in cases of failure risk. With these innovations, psychotherapy for depression can be enhanced by increasing its effectiveness for patients who do not respond or tend to deteriorate as research on FIT has shown.

Being depression a worldwide spread problem with a prevalence which has been increasing in the last decade, to count on more effective treatments becomes a priority. Traditional initiatives taken by researchers (studying factors related to psychopathology and enhancing psychotherapy process factors) to achieve this goal tended to fail. However, patient-focused research and treatment personalisation have shown promising results. Altogether, more research is still needed to enhance the predictive models and personalisation strategies. The current study aims to contribute in this direction.

Considering that in the study by Feixas et al. (2013) patients received treatment in two phases (low and high intensity, respectively), and assuming a cost-efficacy perspective, treatment personalisation aimed to identify "what works for whom?" (Paul, 1967) becomes highly relevant. Thus, patients obtaining greater improvements from a more economical therapeutic modality, like group therapy (low-intensity CBT), can be identified, but also patients who really need individual therapy (high-intensity cognitive therapy) to obtain improvements.

Additionally, as in the study by Feixas et al. (2013, 2016, 2018) the RGT was used as a secondary measure. This is not a typical symptom measure but rather their indexes may reflect psychological processes which have been related to depression. Therefore, indexes can be examined as predictors of outcome and, thus, be used in the future for treatment personalisation based on putatively enhanced predictive models.

Altogether, this dissertation aims to contribute to the study of different patterns of change that patients in group and individual psychotherapy for depression can follow, their early identification for treatment personalisation, and therefore, contributing to better outcomes in the psychotherapy for depression to benefit more patients and save care costs.

2.2 Objectives

1. To explore if there are clusters of different patterns of change across the group and individual therapy phases regarding psychological distress.

2. If different clusters can be identified, to identify the characteristics of the patients included in each one in terms of sociodemographic variables, clinical condition, psychological distress, depression symptom severity, general functioning, self-ideal discrepancy, perceived social isolation, and conflictual construction of the self.

3. To determine which of these patients' baseline characteristics predict these differential patterns of change.

4. To establish if the patterns of change are predictive of treatment outcome at termination and follow-up in terms of depression symptom severity.

2.3 Hypothesis

Considering that early response is a frequent pattern reported in the literature of treatments for depression, and that group therapy tended to be less effective than individual therapy in some cases, we hypothesised that a differential pattern of early response and other pattern of response to individual therapy could be identified. If that

is the case, then there would be a group of patients who responded better to group than to individual therapy, and that in another group the opposite trend would be found. In other words, we would be able to assume that there were patients that needed individual therapy after group therapy to obtain improvements while that was not significant for others.

3. Method

3.1 Design

3.1.1 Design of the current research.

The current research is a quantitative exploratory study based on a post-hoc analysis of longitudinal data of previous study (Feixas et al., 2013, 2016, 2018) with an experimental design (RCT). Methodologically, it is an exploratory repeated measures design in which the same participants were assessed before treatment, in several occasions over the course of treatment, at termination, and at follow-up.

3.1.2 Design of the RCT study by Feixas et al. (2013, 2016, 2018).

Feixas et al (2013)'s RCT aimed to test the hypothesis that the treatment condition including a specific module (DFT) focusing on the resolution of cognitive conflicts (CCs) or dilemmas identified for each patient in particular (Feixas et al., 2009) would prove more effective, thus increasing the efficacy of CBT for depression. To do this, all patients received a treatment structured in two phases. The first one consisted of seven sessions of CBGT for all patients (low-intensity CBT). In the second phase, patients were randomized to one of two individual therapy conditions (of eight sessions each), CBT or DFT (high-intensity cognitive therapies). DFT (Feixas & Compañ, 2015, 2016) is a treatment module that can be added to traditional CBT for depression and is aimed at addressing and solving CCs, as was explained in section 1.2.3. Before the group phase, each patient was interviewed by the therapists to explore his or her particular complaints and treatment motivation. This interview was designed to start building the therapeutic alliance, as is recommended by general group therapy guidelines regardless the theoretical orientation (Burlingame, Strauss, & Joyce, 2013;

Yalom & Leszcz, 2005). After the second phase, one final CBGT session including

relapse prevention closed the treatment. From the first interview with the therapists,

sessions were scheduled at one-week intervals. Seven centres in and around Barcelona,

Spain, participated in the trial. In total, 22 groups were formed with between four and

nine patients each. Patients were treated at their usual health care centres by therapists

($N = 44$) in training from the University of Barcelona. The first phase was conducted by

two therapists who also conducted the later individual phase, one applying CBT and the

other DFT. Therapists were selected for each treatment condition according to their

training and experience. They also received additional training in the use of each

manual, and supervision was provided for each condition by senior therapists.

3.2 Treatments

3.2.1 Cognitive-behaviour group therapy (CBGT).

A manual was designed to adapt the guidelines of cognitive therapy for

depression (Beck et al., 1979) to a seven-session group intervention. In this part,

psychoeducation, behavioural activation, and identification of automatic thoughts were

covered through group discussions and homework assignments.

3.2.2 Cognitive-behaviour therapy (CBT).

Patients allocated to this condition also received CBT in this phase in

accordance with a manual designed for the trial. In this part, patients continued the

identification of automatic thoughts, but cognitive restructuring and behavioural

experiments were more prominent. The main goal was the identification and revision of underlying assumptions and core beliefs.

3.2.3 Dilemma-focused therapy (DFT).

A manual for this condition was also written in both English (Feixas & Compañ, 2016) and Spanish (Feixas & Compañ, 2015).

Since both therapeutic approaches tested were equally efficacious and since both can be broadly regarded as varieties of cognitive therapy, we analysed the pooled sample of patients regardless of their treatment allocation.

3.3 Patients

To be eligible, patients had to meet the following criteria: age between 18 and 70 years old; score of 20 or above on the Beck Depression Inventory – II (BDI-II); diagnostic criteria for MDD or dysthymia assessed with the Structured Clinical Interview for DSM-IV Axis I Disorders (SCID- I; First, Spitzer, Gibbon, & Williams, 1996) and at least one CC, as detected by the RGT. Exclusion criteria were the presence of psychotic symptoms, manic or hypomanic episodes in the past, substance abuse, organic brain dysfunction, acute suicidal ideation, and mental retardation. Patients who were already receiving psychological treatment had substantial visual, hearing, and cognitive deficits, or lacked the linguistic competence to communicate in Spanish or Catalan were also excluded. Of 197 eligible patients, 141 started the group therapy; 128 finished the first phase and were randomly assigned to one of the two individual therapy conditions (see figure 3 for CONSORT diagram and more details). One hundred and

eight patients completed the second phase ($n = 54$ in CBT, and $n = 54$ in DFT), and 106

agreed to participate in post-treatment assessments (completers). The present study

included the 108 patients ($n = 84$ [77.8%] women; $M_{age} = 49.28$, $SD = 10.98$) who had

completed the two phases of treatment, because we were interested in tracking the

patients' patterns of change (trajectories) over the two phases. Ninety-five patients were

assessed at the 3-month follow-up, and 77 at one year.
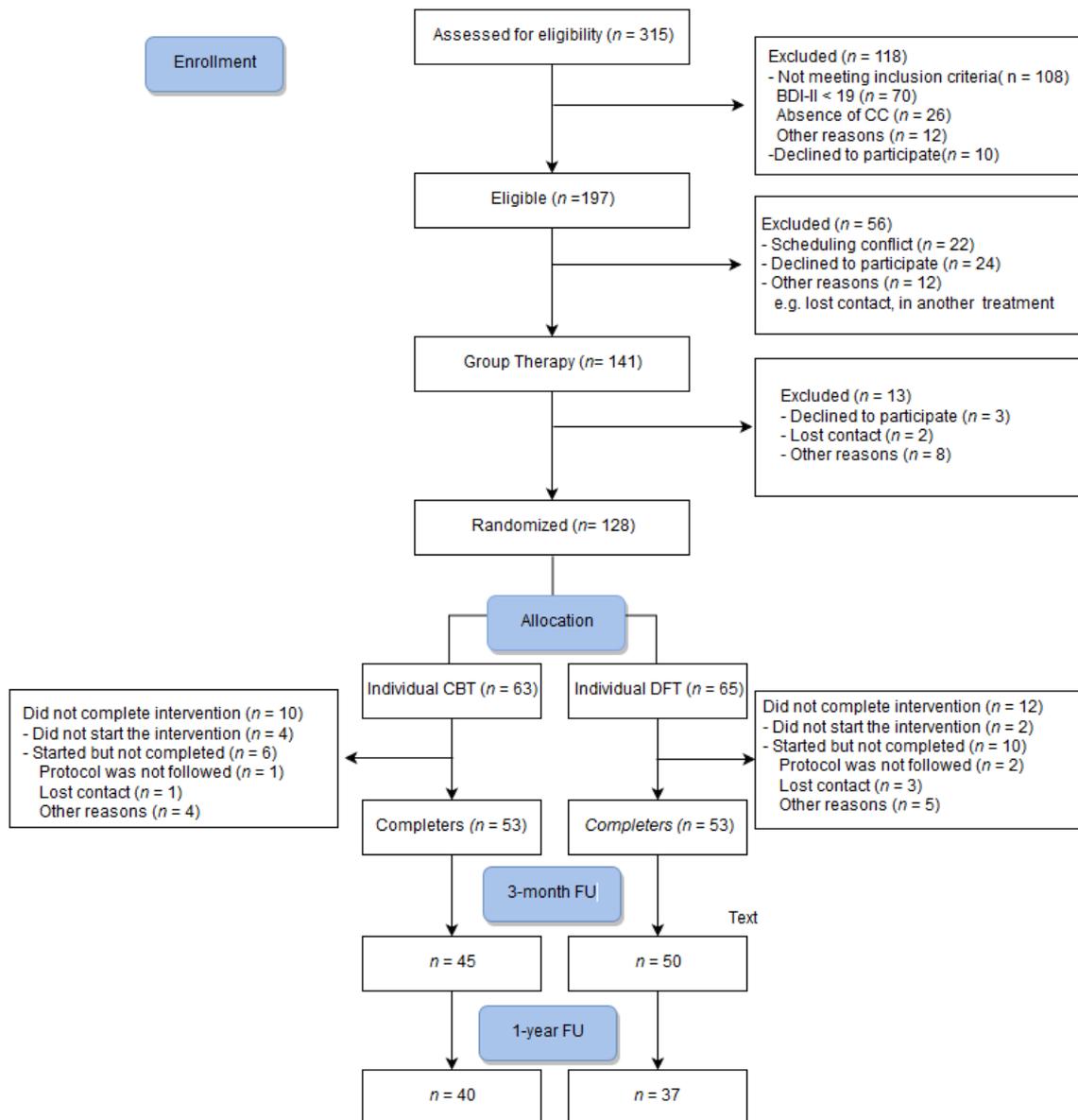
Figure 3. CONSORT diagram by Feixas et al. (2018) RCT.

3.4 Instruments and Measures

Patients were assessed on a battery of instruments before treatment, at termination, and at 3-month and 1-year follow up. Brief outcome measures were applied in each session during both phases of treatment. For the current study, the following instruments and measures were considered:

3.4.1 Structured Clinical Interview for DSM-IV Axis I Disorders (SCID- I; First, Spitzer, Gibbon, & Williams, 1996)

The SCID-I is a structured clinical interview designed to verify the accomplishment of diagnostic criteria for mental disorders according to the DSM-IV-TR axis I. With the SCID-I, information such as socio-demographic data, psychotropic drug consumption, medical history, and treatments received was also collected. The Spanish version of the SCID-I was applied at pre- and post-treatment assessment.

3.4.2 Beck Depression Inventory – II (BDI-II; Beck, Steer, & Brown, 1996).

The BDI-II is a self-reported questionnaire composed of 21 items answered on a Likert scale that goes from 0 to 3. It covers two factors related to the DSM-IV diagnostic criteria for dysthymia and MDD: a physical or motivational factor, and a cognitive or affective factor. The total score ranges from 0 to 63 and is calculated by summing all items. The Spanish version of the BDI-II (Sanz, 2013) was applied at pre-treatment and post-treatment assessments and at 3-month and 1-year follow-up. The BDI-II was the primary outcome measure of Feixas et al. (2016, 2018) study.

3.4.3 Global Assessment of Functioning (GAF; APA, 2000; First et al., 1996).

The GAF is a heteroapplied scale that assesses functioning in daily-life activities. It is part of the diagnosis the clinician should typify for the Axis V of the DSM-IV-TR. The scale goes from 1 to 100 in ranges of 10, where the 1-10 range represents minimal functioning due to the danger of hurting oneself or others, and the 91-100 range represents the absence of symptoms and no impaired functioning. The Spanish version of the GAF was applied at the pre-treatment, post-treatment, and 1-year follow-up assessments.

3.4.4 Clinical Outcome in Routine Evaluation – Short Form B (CORE-SFB; Evans et al., 2000).

The CORE-SFB is a short psychotherapy-outcome measure based on the 34-item Clinical Outcome in Routine Evaluation – Outcome Measure (CORE-OM). It assesses the same four factors as the CORE-OM using 18 items: well-being (4 items), problems or symptoms (6 items), general functioning (6 items) and risk of self-harm and harm to others (2 items). In this questionnaire, the respondent answers each item on a 5-point Likert scale that goes from "never" to "always". The direct score varies from 0 to 72. To estimate the global score, the direct score (sum of all items) is divided by the total number of items, obtaining a score between 0 and 4, with higher scores representing high levels of psychological distress. The Spanish version (Feixas et al., 2012; Trujillo et al., 2016) was applied at pre-treatment and post-treatment assessments, in the interview with the therapists, and in each treatment session.

3.4.5 Repertory Grid Technique (RGT; Feixas & Cornejo, 2002a; Fransella et al., 2004; Kelly, 1955/1991).

The RGT is a semi-structured interview designed to assess the system of personal constructs that patients use to define themselves and their interpersonal world. Several indexes can be obtained for each patient with the mathematical analysis of the repertory grid data matrix. We used the software GRIDCOR 4.0 (Feixas & Cornejo, 2002b) to obtain the indexes for this study, which were:

3.4.5.1 Self-ideal discrepancy. This is based on the Euclidean distance between the ratings to the "self now" element and those of the "ideal self" (how she/he would like to be). It can be considered an indicator of self-esteem (the higher the distance, the lower the self-esteem). According to Spanish normative data (Trujillo, 2016), the mean of this score for the general population is .23 ($SD = .09$).

3.4.5.2 Self-others discrepancy. This is based on the Euclidean distance between the ratings to the "self now" element and those of the "others" (averaging scores of all other elements) and describes how similar the patient views him/herself to significant others. High scores on this index correspond to a greater perception of social isolation. According to the normative data, the mean of this score for the Spanish population is .21 ($SD = .06$).

3.4.5.3 Proportion of the intensity of constructs of implicative dilemmas (PICID). This measures both the number and intensity of the IDs appearing in the repertory grid of a subject with respect to the maximum possible conflictual relationships between the constructs of that person (see Rouco, Paz, Winter, & Feixas, 2018, for more details). The higher the index, the higher the level of internal conflicts. Correlations of .20 between the constructs that are part of the ID have been considered.

The RGT was applied at pre-treatment and post-treatment assessments.

3.5 Data Analytical Strategy

First, to analyse whether patterns of change can be tracked along the two phases of treatment, we used GMM techniques. CORE-SFB scores at pre-treatment assessment, pre-treatment interview, each therapy session, and post-treatment assessment were included in the models (19 time-points in total). Second, differences in patients' baseline and outcome characteristics were explored in relation to the patterns found using MLM (or HLM), repeated measures analysis of variance (RM-ANOVA), and chi-square (X^2) test. Third, multinomial logistic regression (MLR) models were computed to identify patient's baseline characteristics that predicted pattern membership. Fourth, using sequential linear regression analysis, patients' baseline characteristics and patterns of change were examined as predictors of BDI-II total score at post-treatment and follow-up assessments. This procedure made it possible to test whether the fact of belonging to a specific pattern could be used to predict outcome. Finally, with X^2 test, we explored the differences in the proportion of *recovered patients* (according to Jacobson and Truax's criteria, 1991) for each class at termination, at 3-month and 1-year follow up assessments.

3.5.1 Patterns of change for group and individual therapy.

As was explained in section 1.3.1, GMM is a method based on latent growth models which allows the identification of multiple unobserved subpopulations in longitudinal data.

In the current study, models were estimated with a piecewise function (Kohli, Harring, & Hancock, 2013). Moreover, two slopes and two intercepts were computed, one for each phase of the treatment. Using a conventional latent growth model, we tested the polynomic function with the best fit for the data. Models were compared through the X^2 test, root mean square error of approximation (RMSEA), Bayesian information criterion (BIC), and Akaike's information criterion (AIC). We followed the criterion of the lower the value, the better the model (Byrne, 2012). Once resolved, GMM was implemented starting with a one-class model. Several models with progressive numbers of classes were tested until we found a solution that met the criteria of the lowest value in BIC and AIC, and statistical significance ($p < .05$) on the bootstrapped likelihood ratio test (BLRT) and Lo-Mendel-Rubin likelihood ratio test (LRT), which checked whether the implementation of an additional latent class could result in a significant improvement of the model (Kim, 2014; Koffmann, 2017). Entropy scores were also taken into account for model comparisons (a measure of classification quality that goes from 0 to 1, where 1 corresponds to the case where all individuals have probability 1 for one class and 0 for the others; Nylund, Asparouhov, & Muthén, 2007). Variances around the class-specific slopes were fixed to zero, whereas intercept variances were freely estimated. Therefore, differences in change patterns had to be captured by the difference in mean slope and initial scores at each phase of the treatment (Muthén, Brown, Hunter, Cook, & Leuchter, 2011). Figure 4 shows the path diagram of the model performed.
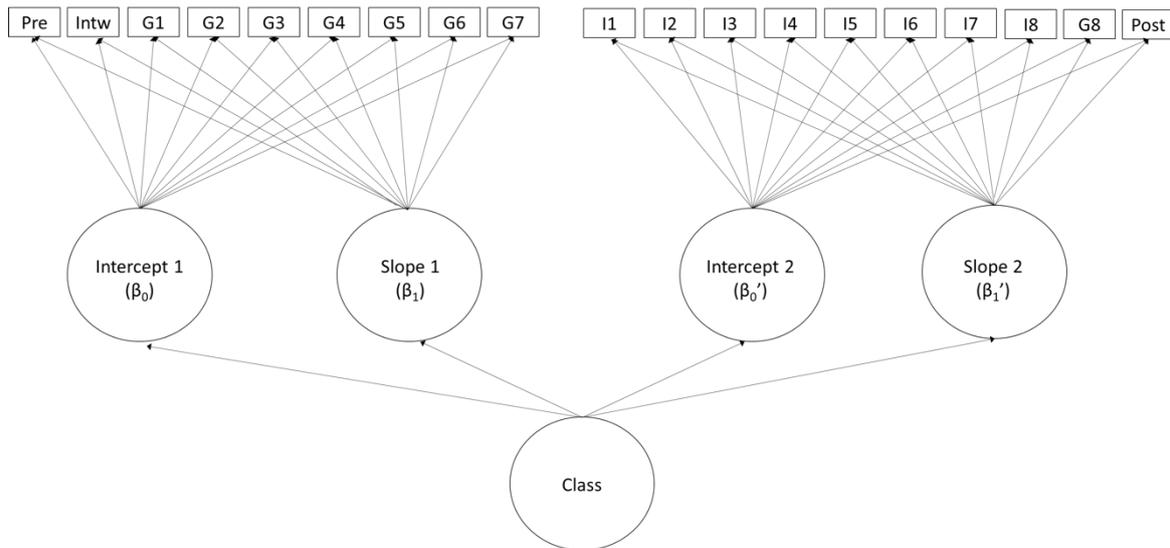
Figure 4. Path diagram of the model computed with GMM. *Note.* Pre = pre-treatment assessment; Intw = pre-treatment interview; G# = number of group therapy session; I# = number of individual therapy session; Post = post-treatment assessment.

3.5.2 Patients' characteristics within each pattern.

Once the patterns were identified, patients were categorized accordingly into classes. Differences in patients' characteristics between classes at baseline, termination, and follow-up were explored using MLM for continuous variables with more than two-time point assessments. For continuous variables with only two-time point assessments (i.e., RGT indexes assessed only pre- and post-therapy), RM-ANOVA was performed. Contrasts between classes at each time point were examined through ANOVA applying Bonferroni correction. Effect sizes were also computed as Hedges' *g*. Differences between classes in categorical variables at baseline were explored using the X^2 test.

3.5.3 Patients' baseline characteristics as predictors of the patterns of change.

Based on the previous results, variables at baseline were selected as predictors for class membership through MLR (backward stepwise method). AIC, BIC, and X^2 tests were used for model comparison. Furthermore, all predictors were centred following the guidelines of Kraemer and Blasey (2004), whereby continuous variables were mean-centred, ordinal variables were median-centred, dichotomous variables were coded at ½ and -½, and categorical variables were dummy coded at $1/n$, and $-1/n$ (n being the number of categories).

3.5.4 Patterns of change as predictors of treatment outcome at termination and follow-up.

Through multiple linear regression (stepwise method), predictive models for the outcome at termination and follow-up were computed. The effect of class membership (dummy coded) was added to these models through a sequential analysis. Variables were also centred according to the guidelines of Kraemer and Blasey (2004). Finally, differences in the percentage of patients in each class with a reliable change in BDI-II and a score under the clinical cut-off (*recovered patients*, according to Jacobson and Truax, 1991)[2] at termination and at 3-month and 1-year follow up were explored using the X^2 test.

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[2] The reliable change index (RCI) for BDI-II in Feixas et al.'s (2016) RCT was 7.76, and the cut-off score was 17.53 (Paz et al., 2019). Both were computed using normative data for Spanish population (Sanz, 2013).

Latent growth models and GMM were computed with Mplus 7 (Muthén & Muthén, 1998-2012), and the other analyses were carried out with IBM SPSS 25 (IBM Corp., 2017).

4. Results

4.1 Patterns of Change for Group and Individual Therapy

Using latent growth models, we found that a linear function provided a better solution for our data, $X^2(176) = 310.59$, $p < .001$, RMSEA = .084, BIC = 2111.76, AIC = 2042.02, than a log-linear function, $X^2(176) = 323.29$, $p < .001$, RMSEA = .088, BIC = 2121.18, AIC = 2051.45. Solutions for models based on quadratic and cubic functions did not converge. Therefore, the linear function was chosen to perform GMM, and tests of goodness of fit suggested a three-class solution (see tables 1, 2 and figure 5).

Table 1

Information criteria, p-value in bootstrapped likelihood ratio test (BLRT), and Lo-Mendel-Rubin likelihood ratio test (LRT) for models tested with growth mixture modelling (GMM)

Num of classes	BIC	AIC	BLRT p-value	LRT p-value	Entropy
1	2111.76	2042.03	---	---	---
2	2013.75	1930.61	.329	.316	.86
3	**1981.43**	**1884.87**	**.000**	**.029**	**.88**
4	1961.13	1851.16	.000	.092	.90
5	1954.58	1831.20	.000	.345	.88

Note. BIC = Bayesian information criterion; AIC = Akaike's information criterion
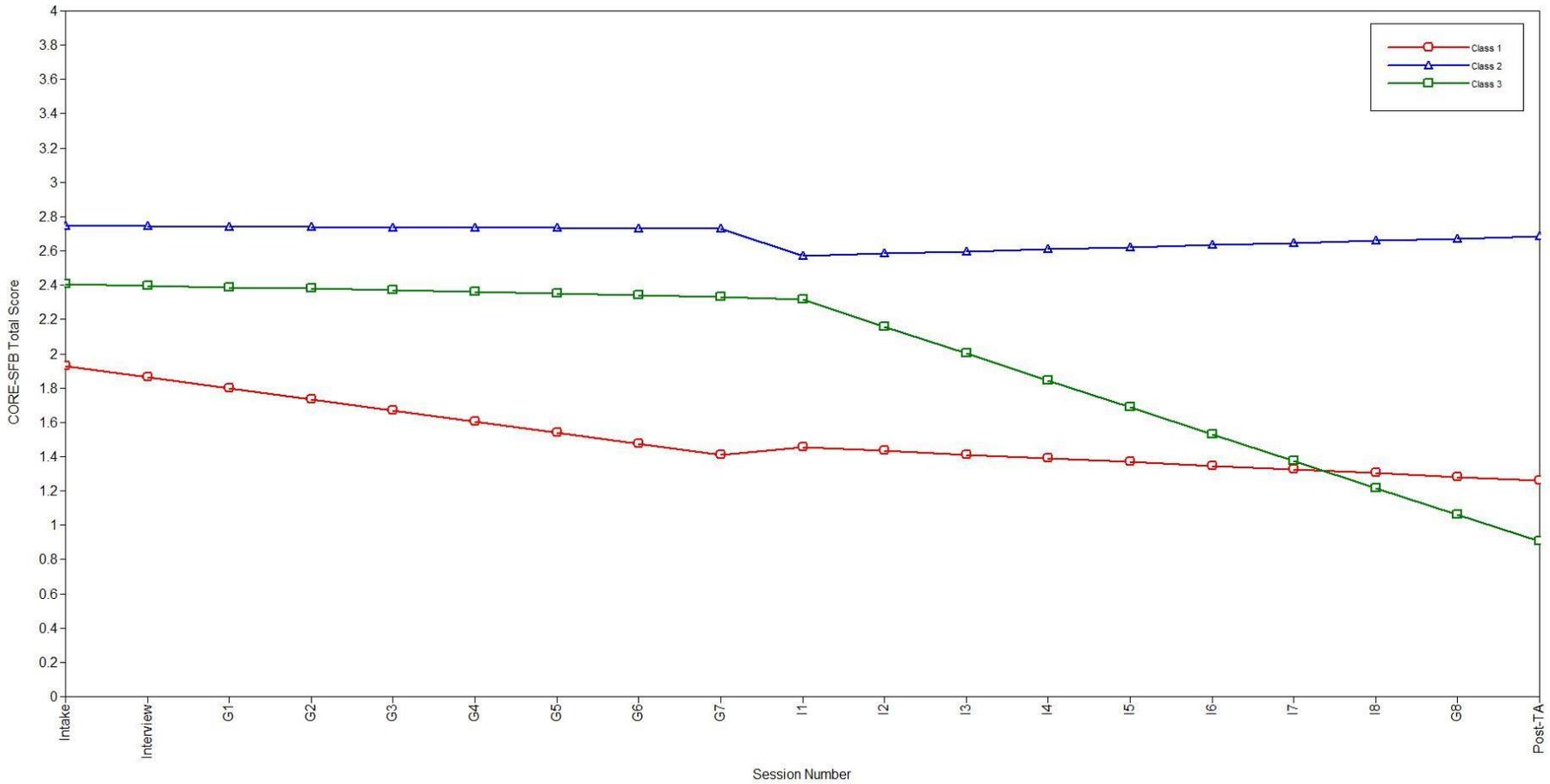
Figure 5. Estimated mean latent growth curves for the 3-class model with GMM. *Note.* G# = number of group therapy session; I# = number of individual therapy session; Post-TA = post-treatment assessment.

Table 2

Parameters of the 3-class model obtained with GMM.

	n	Group Therapy Phase		Individual Therapy Phase	
		Intercept β_0	Slope β_1	Intercept β_0'	Slope β_1'
Class 1	63 (58.3%)	1.93***	-.07***	1.65***	-.02**
Class 2	26 (24.1%)	2.74***	-.002	2.46***	.012
Class 3	19 (17.6%)	2.41***	-.01	3.73***	-.16***

Note. n = number of members in each class; *** $p < .001$; ** $p < .01$

Considering the estimated means of the model (table 2), in figure 4 is possible to see that patients in the first class were characterized by medium-to-high distress severity at baseline (note that the mean for Spanish mental health outpatients for CORE-OM is $M = 1.62$, Trujillo, et al., 2016). They presented rapid improvement during group therapy, but their improvement was slower in the individual therapy phase. This class was called *group therapy improvers*. The other two classes had a high average of symptom severity scores at baseline. Patients in class 3 started with lower severity distress than those in class 2, and hardly improved during the group therapy; however, when they started the individual therapy phase, they started to improve very rapidly. This class was called *individual therapy improvers*. Patients in class 2 were those with the highest level of distress at baseline; they did not improve at any phase in the treatment, and some even deteriorated. This class was called *non-improvers*.

4.2 Patients' Characteristics within Each Pattern

Firstly, differences between classes in CORE-SFB total score at baseline, the last session of the group therapy phase (G7), and post-treatment assessment were estimated through MLM. The main effect of treatment in reducing the scores over time was significant, $F(2, 108.70) = 22.76$, $p < .001$. Post-hoc contrasts revealed significant differences between different time points within, $F(2, 80.87) = 22.76$, $p < .001$, and between classes $F(2, 79.69) = 91.92$, $p < .001$. At post-treatment assessment, classes 1 (*group therapy improvers*) and 3 (*individual therapy improvers*) tended to present similar scores. Figure 6 shows the trajectory of the three classes based on these comparisons, and table 3 gives the specific values and effect sizes of the mean differences.
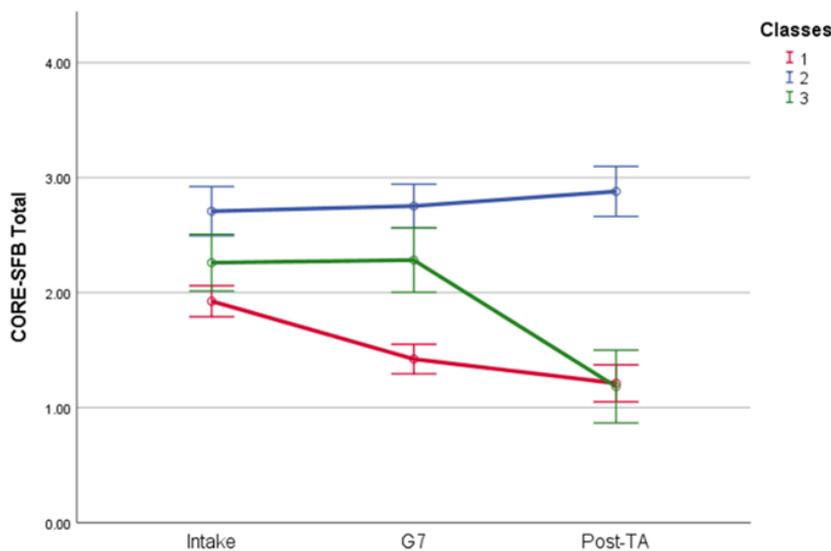
Figure 6. Observed means and 95% CI for CORE-SFB total score by classes at intake, last session of the group therapy phase, and post-treatment assessment. *Note.* G7 = group therapy session number 7; Post-TA = post-treatment assessment.

Table 3

Observed means, (SD), [95% CI], and effect sizes for CORE-SFB total score between

classes comparisons

Class	Intake	G7	Post-TA	Effect Size Δ Intake/G7	Effect Size Δ G7/Post-TA	Effect Size Δ Intake/Post-TA
1	1.93 (.50) [1.79, 2.06]	1.42 (.47) [1.30, 1.55]	1.21 (.54) [1.06, 1.37]	1.04** [.64, 1.44]	.41* [.02, .81]	1.38** [.95, 1.81]
2	2.71 (.49) [2.51, 2.91]	2.75 (.46) [2.57, 2.93]	2.88 (.39) [2.68, 3.08]	-.08 [-.65, .48]	-.29 [-.94, .35]	-.37 [-1.02, .29]
3	2.26 (.49) [2.03, 2.49]	2.28 (.56) [2.02, 2.54]	1.18 (.50) [.90, 1.47]	-.04 [-.69, .62]	1.99** [1.10, 2.88]	2.13** [1.22, 3.03]

Note. Δ = difference; G7 = group therapy session number 7; Post-TA = post-treatment

assessment; ** $p < .001$; * $p < .01$

Similar analyses were performed for BDI-II, GAF, and RGT indexes. For BDI-

II, scores at baseline, post-treatment, 3-month and 1-year follow-up assessments were

compared. The main effect of treatment on the reduction of BDI-II scores through time

was significant, $F(3, 71.01) = 68.39$, $p < .001$. Classes added a significant effect to the

model $F(2, 5.42) = 27.29$, $p = .001$, and post-hoc contrasts revealed significant

differences $F(2, 42.64) = 37.41$, $p < .001$ between classes 1 (*group therapy improvers*)

vs. 2 (*non-improvers*), and 2 vs. 3 (*individual improvers*) at each time point after

baseline. For GAF, scores at baseline, post-treatment, and 1-year follow-up assessments

were compared. The main effect of treatment on the increase of GAF scores over time

was significant, $F(2, 117.92) = 67.40$, $p < .001$, as well as the effect of class

membership, $F(2, 35.58) = 16.60$, $p < .001$. Post-hoc contrasts showed significant

differences $F(2, 40.21) = 16.60$, $p < .001$ between classes 1 (*group therapy improvers*)

vs. 2 (*non-improvers*), and 3 (*individual therapy improvers*) vs. 2 at post-treatment, and 1-year follow-up assessments. Figure 7 shows these comparisons for BDI-II and GAF based on observed means and 95% CI.

RGT indexes at baseline and post-treatment were compared through RM-ANOVA. In all the models, the assumption of sphericity was accomplished according to the Greenhouse-Geisser estimation. The main effect of treatment on decreasing self-ideal discrepancy was significant, $F(1, 102) = 32.74$, $p < .001$, and post-hoc contrasts revealed significant differences, $F(2, 102) = 8.72$, $p < .001$, between classes 1 (*group therapy improvers*) vs. 2 (*non-improvers*) and between 2 vs. 3 (*individual therapy improvers*) at post-treatment assessment. Similar results were found for the self-others discrepancy and PICID. The main effect of treatment was significant for self-others discrepancy, $F(1, 102) = 25.69$, $p < .001$, and for PICID, $F(1, 102) = 17.05$, $p < .001$. Post-hoc contrasts between classes at post-treatment assessment for these two indexes were also significant, $F(2, 102) = 5.20$, $p < .01$, $F(2, 102) = 3.33$, $p < .05$ respectively. Table 4 gives the specific values and effect sizes of the mean differences. Figure 8 shows these comparisons for Self-Ideal and Self-Others discrepancies, and PICID based on observed means and 95% CI.

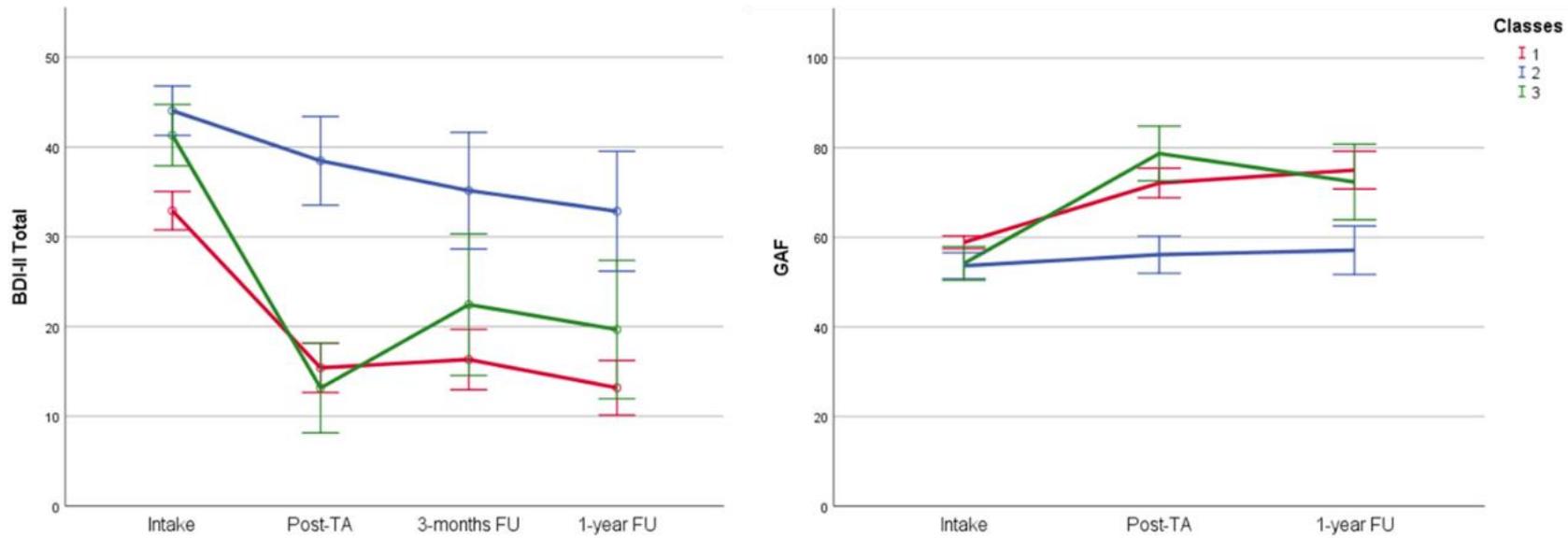*Figure 7.* Observed means and 95% CI for BDI-II total score and GAF by classes at intake, post-treatment, 3-months and 1-year follow-up assessment.

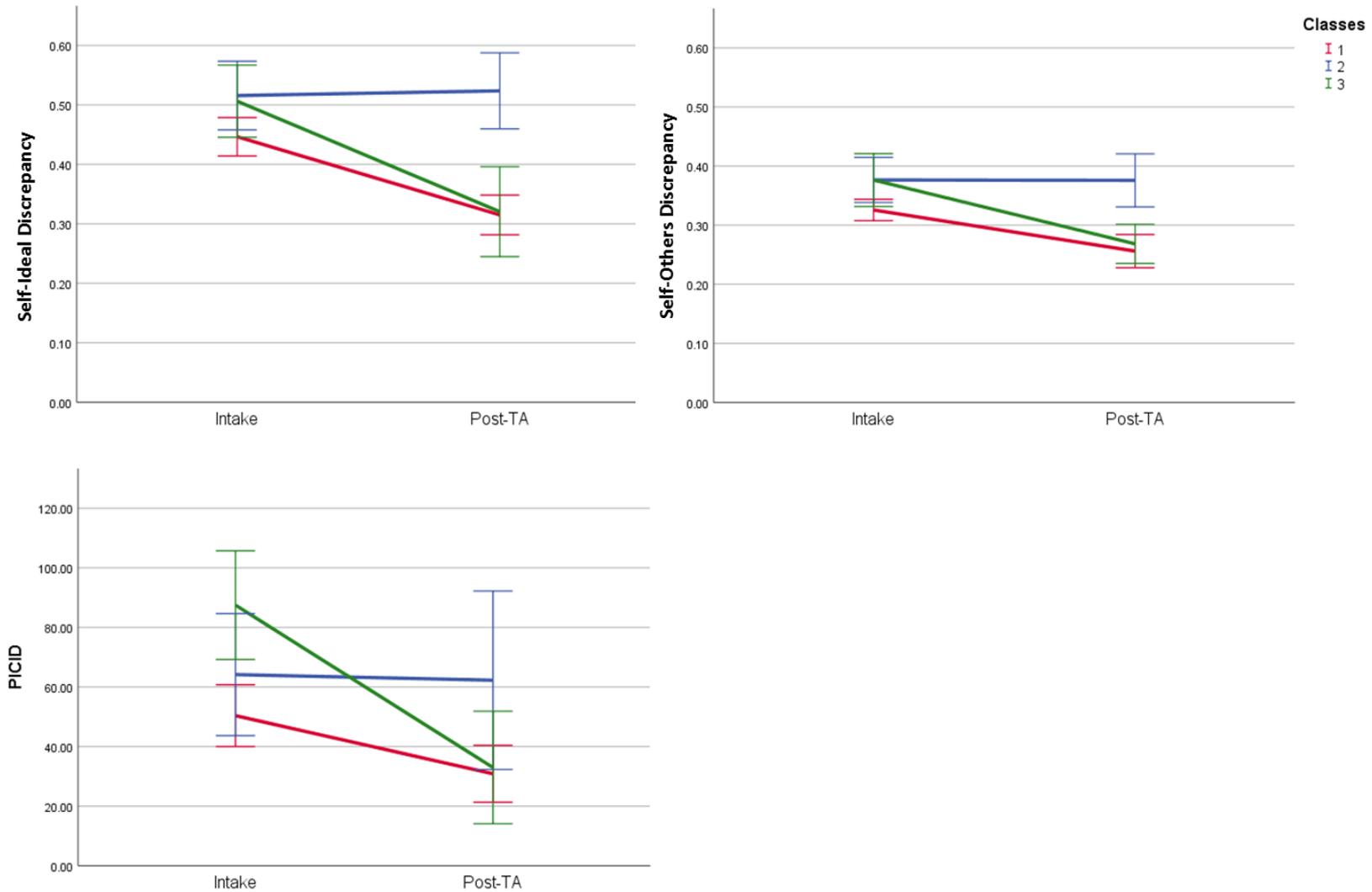*Note.* Post-TA = post-treatment assessment; FU = follow-up.

Figure 8. Observed means and 95% CI for Self-Ideal and Self-Others discrepancies, and PICID at intake and post-treatment assessments. *Note.* Post-TA = post-treatment assessment.

Table 4. *Observed means, (SD), [95% CI], and effect sizes for BDI-II, GAF, Self-Ideal, Self-Others, and PICID between classes comparisons.*

		Intake	Post-TA	3-m FU	1-y FU	Effect Size Δ Intake/Post-TA	Effect Size Δ Intake/3-m FU	Effect Size Δ Intake/1-y FU
BDI-II	**Class 1**	32.90 (8.50) [30.81, 35.00]	15.40 (10.83) [12.71, 18.10]	16.32 (12.89) [13.03, 19.61]	13.18 (10.00) [10.23, 16.14]	1.79*** [1.37, 2.20]	1.52*** [1.12, 1.92]	2.14*** [1.66, 2.62]
	Class 2	44.04 (6.80) [41.42, 46.65]	38.46 (12.24) [33.76, 43.16]	35.14 (14.28) [29.03, 41.25]	32.84 (13.84) [26.62, 39.07]	.56* [.00, 1.11]	.81** [.21, 1.41]	1.06** [.43, 1.69]
	Class 3	41.32 (7.10) [38.13, 44.51]	13.16 (10.39) [8.49, 17.83]	22.44 (14.80) [15.19, 29.69]	19.67 (13.90) [12.63, 26.70]	3.10*** [2.16, 4.04]	1.64*** [.87, 2.40]	1.99*** [1.16, 2.81]
GAF	**Class 1**	58.87 (5.72) [57.46, 60.29]	72.11 (12.07) [68.89, 75.33]	---	74.98 (13.85) [70.88, 79.07]	-1.43*** [-1.84, -1.02]	---	-1.62*** [-2.06, -1.18]
	Class 2	53.64 (7.03) [50.88, 56.40]	56.12 (10.05) [52.18, 60.06]	---	57.11 (11.21) [52.06, 62.15]	-.28 [-.84, .28]	---	-.38 [-.98, .23]
	Class 3	54.17 (7.50) [50.70, 57.63]	78.68 (12.68) [72.98, 84.38]	---	72.33 (15.22) [64.63, 80.04]	-2.29*** [-3.12, -1.46]	---	-1.52** [-2.30, -0.75]
Self-Ideal	**Class 1**	.44 (.13) [.41, .48]	.32 (.13) [.28, .35]	---	---	.92*** [.55, 1.29]	---	---
	Class 2	.52 (.15) [.45, .58]	.53 (.15) [.46, .59]	---	---	-.07 [-.62, .49]	---	---
	Class 3	.51 (.13) [.45, .56]	.32 (.16) [.25, .40]	---	---	1.28** [.58, 1.97]	---	---
Self-Others	**Class 1**	.32 (.07) [.30, .34]	.25 (.11) [.22, .28]	---	---	.76*** [.39, 1.12]	---	---
	Class 2	.38 (.10) [.34, .42]	.37 (.10) [.33, .42]	---	---	.10 [-.46, .65]	---	---
	Class 3	.38 (.09) [.34, .42]	.27 (.07) [.24, .30]	---	---	.13** [-.50, .77]	---	---
PICID	**Class 1**	50.39 (40.12) [40.02, 60.75]	30.89 (36.99) [21.33, 40.44]	---	---	.50** [.14, .86]	---	---
	Class 2	64.16 (47.39) [43.67, 84.65]	62.28 (69.28) [32.32, 92.24]	---	---	.03 [-.53, .59]	---	---
	Class 3	87.48 (37.87) [69.23, 105.73]	32.98 (39.18) [14.10, 51.87]	---	---	1.38** [.68, 2.09]	---	---

Note. Δ = difference; Post-TA = Post-treatment assessment; 3-m FU = 3-months follow-up assessment; 1-y FU = 1-year follow-up assessment; ***
$p < .001$; ** $p < .01$; * $p < .05$

No differences between classes were found in the age of the patients or in other RGT indexes. Regarding differences in categorical variables at baseline (explored with the X^2 test), no differences were found in sex, medication, marital, employment status or mental health diagnosis. In terms of medical diagnosis, we found that of the 26 *non-improvers* (class 2) 14 (53.9%) had a concurrent diagnosis of fibromyalgia syndrome (representing 70% of the 20 patients with this diagnosis in the study). The statistical contrast was significant, $X^2 (2) = 28.49$, $p < .001$, indicating the preponderance of these patients in this pattern (standardized residual, $z > 1.96$).

4.3 Patients' Baseline Characteristics as Predictors of the Pattern of Change

Two MLR models for predicting class membership from patients' baseline characteristics were estimated with the backward stepwise method. On the basis of the previous results on patients' characteristics within each pattern, variables were selected as predictors for these models.

The assumptions of no multicollinearity between independent variables (tolerance values > .10 and variance inflation factor [VIF] < 10), and linear relationship between continuous independent variables and the logit of the dependent variable (no significant interaction between the dependent variables and the logit of themselves) were accomplished for both models. Equally, no indication of over/under dispersion was detected ($\Phi \approx 1$).

The first model tested left out self-ideal and self-others discrepancies, and GAF because they did not contribute as significant predictors. Therefore, the variables entered the model were BDI-II, CORE-SFB, and PICID, $X^2(6) = 49.26$ (AIC = 152.19, BIC = 172.71), $p < .001$, pseudo $R^2 = .40$ (Cox & Snell), .47 (Nagelkerke), with a

classification ratio of 61.5%. Parameters of the model in table 5 show that CORE-SFB

initial score contributed to discriminating between classes 1 (*group therapy improvers*)

vs. 2 (*non-improvers*), and between 2 vs. 3 (*individual therapy improvers*; the higher the

CORE-SFB score, the greater the likelihood of belonging to class 2), while BDI-II and

PICID did so for class 1 vs. 3 (the higher the PICID and/or the BDI-II score, the greater

the likelihood of belonging to class 3, *individual therapy improvers*). With the idea of

increasing the predictive power of the model, a second analysis adding interactions was

computed but the effect of interactions was not significant; therefore, they did not enter

the model.

Table 5

Parameters for MLR predicting class membership from patients' baseline

characteristics.

Predictor	*B (SE)*	*P*	Lower 95% CI	Odds Ratio	Upper 95% CI
Class 1 (*group therapy improvers*) vs. 2 (*non-improvers*)					
Intercept	1.48 (.40)	< .001			
BDI-II	-.10 (.05)	.05	.83	.91	1.00
CORE-SFB	-2.55 (.86)	< .001	.01	.08	.42
PICID	-.01 (.01)	.07	.97	.99	1.00
Class 3 (*individual therapy improvers*) vs. 2 (*non-improvers*)					
Intercept	.26 (.47)	.58			
BDI-II	.02 (.05)	.65	.92	1.02	1.14
CORE-SFB	-2.10 (.91)	< .05	.02	.12	.73
PICID	.00 (.01)	.45	.99	1.00	1.02
Class 1 (*group therapy improvers*) vs. 3 (*individual therapy improvers*)					
Intercept	1.22 (.34)	<.001			
BDI-II	-.12 (.05)	< .05	.81	.89	.97
CORE-SFB	-.44 (.70)	.53	.16	.64	2.54
PICID	-.02 (.01)	< .05	.97	.98	.99

A second model was computed using the diagnosis of fibromyalgia syndrome

(dichotomous variable) as predictor, $X^2(8) = 57.19$ (AIC = 147.18, BIC = 172.72), $p <$

.001, pseudo R^2 = .45 (Cox & Snell), .53 (Nagelkerke), with a classification ratio of

68.4%. In table 6, the parameters of the model indicate that fibromyalgia acted as a

predictor, increasing the likelihood of belonging to class 2 (*non-improvers*) compared to

class 1 (*group therapy improvers*) in 7.14 times, and of belonging to class 2 compared

to class 3 (*individual therapy improvers*) in 8.44 times. Note that in table 6 the predicted

classes are 1 and 3, hence, to compute odds ratios for belonging to class 2, 1 must be

divided by the odds ratio reported.

Table 6

Parameters for MLR predicting class membership from patients' baseline

characteristics and fibromyalgia diagnosis as predictor.

Predictor	B (SE)	P	Lower 95% CI	Odds Ratio	Upper 95% CI
Class 1 (*group therapy improvers*) vs. 2 (*non-improvers*)					
Intercept	1.75 (.44)	< .001			
Fibromyalgia	-2.00 (.90)	< .05	.02	.14	.79
BDI-II	-.08 (.05)	.10	.83	.92	1.02
CORE-SFB	-2.31 (.86)	< .05	.02	.10	.53
PICID	-.01 (.01)	.40	.98	.99	1.01
Class 3 (*individual therapy improvers*) vs. 2 (*non-improvers*)					
Intercept	.51 (.51)	.31			
Fibromyalgia	-2.10 (1.01)	< .05	.02	.12	.89
BDI-II	.38 (.58)	.51	.93	1.04	1.16
CORE-SFB	-1.80 (.95)	.06	.03	.17	1.07
PICID	.02 (.01)	.10	1.00	1.02	1.03
Class 1 (*group therapy improvers*) vs. 3 (*individual therapy improvers*)					
Intercept	1.24 (.36)	< .001			
Fibromyalgia	.10 (1.10)	.93	.13	1.11	9.37
BDI-II	-.12 (.05)	< .05	.81	.89	.97
CORE-SFB	-.51 (.73)	.48	.15	.60	2.49
PICID	-.02 (.01)	< .05	.96	.98	.99

4.4 Patterns of Change as Predictors of Treatment Outcome at Termination and Follow-up

The predictive power of change patterns for the BDI-II total score at termination, 3-month and 1-year follow-up assessments was estimated using hierarchical linear regression analysis.

The assumptions of linear relationship between variables; normal distribution of continuous and ordinal variables (Shapiro-Wilk test, $p > .05$); no multicollinearity (tolerance values $> .10$ and VIF < 10); normality (visual inspection of Q-Q plot indicated normal distribution of residuals, and $M_{residuals} = 0$), homocedasticity (Levene test, $p > .05$) and no auto-correlation of the residuals (Durbin-Watson statistic < 3 and > 1), were accomplished.

The BDI-II score at baseline was used as a default predictor to control their effect in the models. Baseline scores of the other variables (GAF, CORE-SFB, self-ideal discrepancy, self-others dicrepancy, and PICID) were tested as predictors using the stepwise method. The first analysis left these variables out of the model because they did not contribute to it as significant predictors. Therefore, only the BDI-II score at baseline entered as a predictor in the first step. In the second step, the dummy-coded class membership variables were added to the model (see table 7).

For instance, at termination, 27% of patients' depression levels depended on their initial score, and 28% on their pattern of change, amounting to 55% of the total explained variance. This value fell at 3-month follow-up, where the effect of the patterns seemed to play a less crucial role, and then increased again at 1-year follow-up.

Table 7

Parameters of sequential linear regression analysis to predict BDI-II scores at

termination, 3-months, and 1-year follow-up assessments.

	Post-TA		3-m FU		1-y FU	
Predictors	***B** (SE)*	**Increment in R^2**	***B** (SE)*	**Increment in R^2**	***B** (SE)*	**Increment in R^2**
			Step 1			
Intercept	2.50 (1.25)***	.27	21.70 (1.43)***	.18	19.53 (1.48)***	.17
BDI-II pre	.84 (1.25)***		.69 (.15)***		.64 (.17)***	
			Step 2			
Intercept	14.21 (1.34)***	.28	19.23 (1.86)***	.11	16.45 (1.76)***	.17
BDI-II pre	.57 (.13)***		.41 (.17)*		.23 (.19)*	
Class 1	-36.00 (4.70)***		-21.16 (5.93)**		-25.58 (5.97)***	
Class 3	-25.50 (4.19)***		-18.04 (6.65)**		-19.52 (6.17)**	
R^2		.55		.29		.34

Note. Post-TA = Post-treatment assessment; 3-m FU = 3-months follow-up assessment;

1-y FU = 1-year follow-up assessment; *** $p < .001$; ** $p < .01$; * $p < .05$

Finally, table 8 shows the percentage of patients in each class who achieved a

reliable change in BDI-II and whose scores were under the clinical cut off (recovered

patients) at termination, 3-month and 1-year follow up. X^2 tests found statistically

significant differences between the proportion of classes at post-treatment assessment:

$X^2(6) = 34.90$, $p < .001$; 3-month follow-up, $X^2(6) = 23.61$, $p < .01$; and 1-year follow-

up, $X^2(6) = 20.10$, $p < .01$. The proportion of recovered patients in class 2 (*non-*

improvers) was the lowest for each time point.

Table 8

Percentage of recovered patients in each class.

Classes	Post-TA	3-m FU	1-y FU
1	61.9%	62.7%	72.7%
2	3.8%*	9.5%*	15.8%*
3	68.4%	37.5%	53.3%

Note. Post-TA = Post-treatment assessment; 3-m FU = 3-months follow-up assessment;

1-y FU = 1-year follow-up assessment; * standardized residual, $z > 1.96$

5. Discussion

The present research studied the patterns of change, in patients receiving group and individual psychotherapy for depression in the context of a RCT. Three types of patterns were found: *group therapy improvers* (class 1), *individual therapy improvers* (class 3), and *non-improvers* (class 2).

Consistent with our hypothesis, we found a differential pattern of early response (class 1) and other pattern of response to individual therapy (class 3). Thus, there was a group of patients who responded better to group than to individual therapy, and that in other group the opposite trend was found. In other words, there were patients that needed individual therapy after group therapy to obtain improvements.

Concerning the objective of exploring the patients' characteristics in each pattern (objective 2), g*roup therapy improvers* started the treatment with lower levels of symptoms of psychological distress and depression and higher levels of functioning than the other two groups. These results are consistent with the scores in the RGT indexes, in which they showed the lowest levels of self-ideal discrepancy (higher self-esteem), of self-others discrepancy (perception of higher similarity with others), and of conflicted construction of the self (PICID). These characteristics seemed to be signs of good prognosis for these patients, who were early responders to group therapy and improved very fast during this phase of the treatment. While it is true that they continued to improve during the individual therapy phase, the improvement was less marked than during the previous phase and also less marked than among the *individual therapy improvers*. In terms of the outcome at termination and follow-up assessments, these patients' BDI-II scores were, in most cases, at functional levels, and in the category of *recovered*. They continued to improve 3 months and 1 year after the

treatment, showing that they were able to maintain the benefits of the treatment over time. These patients presented improvements in their construction of self and others as measured with the RGT.

Individual therapy improvers started at similar levels of depression to *non-improvers*. As regards psychological distress, their initial levels were lower than *non-improvers*, but higher than *group therapy improvers*. During the group therapy phase they showed no improvement at all, but when the individual therapy phase began, they responded promptly and started to improve very fast. By the end of treatment, they had reached the same levels of symptoms and functioning as the *group therapy improvers*, with a similar proportion of recovered patients. Three months after treatment they tended to show an increase in depression symptoms, but had partially recovered by the time of the one-year follow up. These results suggest that although some patients in this group had difficulties in maintaining treatment benefits, one year after treatment their scores on the BDI-II tended to be within the range of the general population (Sanz, 2013). In terms of functioning, they showed good levels at post-treatment assessment, which were practically maintained one year later. Again, as in the previous group, these results were consistent with the scores on the RGT indices. *Individual therapy improvers* started with similar levels of self-ideal discrepancy, perception of social isolation, and conflictual construction of the self to *non-improvers*, but presented improvements on all these indices after treatment. These results, along with the results obtained by the previous subgroup, showed that patients who improved in psychotherapy ended up with better self-esteem, perceived themselves as more similar to others, and tended to reduce their CCs after the treatment; these outcomes also mirror those of other psychotherapy studies (Feixas et al., 2008; Pucurull, 2015).

Non-improvers started the treatment with the highest levels of psychological distress and depression, and their levels of functioning were lower than the *group therapy improvers* though similar to those of the *individual therapy improvers*. The same comparisons were observed for the RGT indices. These patients did not show patterns of response at any phase of the treatment; they did not improve over the course of treatment with regard to psychological distress, and in fact seemed to deteriorate; their BDI-II scores appeared to have fallen at treatment termination and at the follow-up assessments, but they presented more limited improvement than the other groups, and obtained the lowest effect sizes. In fact, their mean scores were not within functional ranges at any assessment point, and the number of recovered patients was small. The changes in their RGT indices were not significant; thus, they did not present improvements in their self-esteem or in their perception of social isolation, and their CCs did not resolve after treatment. We stress that the majority of patients in this cluster were diagnosed with fibromyalgia syndrome. This may explain the differences between CORE-SFB and BDI-II outcome scores; while these patients' depression symptoms seemed to improve, their levels of psychological distress did not, probably because of the persistence of their physical difficulties.

Models for predicting class membership from patients' baseline characteristics (objective 3) significantly discriminated *group therapy improvers* from *non-improvers* and *individual therapy improvers*. BDI-II, CORE-SFB, and PICID emerged as significant predictors for this purpose: higher BDI-II and PICID scores were associated with a higher likelihood of being an *individual therapy improver* than a *group therapy improver*, and higher baseline scores for CORE-SFB were related a higher likelihood of being a *non-improver* than a *group therapy improver*. Moreover, a diagnosis of fibromyalgia made it more likely that a patient would be a *non-improver*.

What these results show is that the greater the initial impairment (in terms of depression symptom severity and psychological distress) and conflictual construction of the self, the more likely it is that patients will benefit from individual therapy than from group therapy. Although our first model was unable to discriminate well between *individual therapy improvers* and *non-improvers*, the results suggested that the greater the patients' impairment, the less likely they were to benefit from either group or individual therapy (i.e., the more likely they were to be *non-improvers*). This discrimination is clearer in the second model with the addition of fibromyalgia diagnosis.

These results can be assessed in the light of the profiles of patients proposed by DeRubeis, Gelfand, German, Fournier, and Forand (2014). These authors established a theoretical classification of patients according to their response to psychotherapy, based on the quality of the treatment received (in terms of the therapeutic alliance and the "fit" of the treatment plan to the characteristics of the patients), and the time-effect of patients' natural evolution (e.g., spontaneous remission). They define *easy* patients as the ones who would experience considerable improvement even without therapy, and would evidence maximal improvement if the quality of the therapy is at least good. *Pliant* patients are those whose response to therapy is excellent if excellent therapy is provided, poor if the therapy is poor, and so on. *Challenging* patients are those who experience no improvement unless therapy quality is at least good, and achieve less than maximal improvement even when optimal therapy is provided. Finally, *intractable* patients experience no improvement whatever the quality of therapy provided to them. In our case, *group therapy improvers* seem to correspond to the *easy* category (although we do not know whether they would have improved with individual therapy, or without therapy), *individual therapy improvers* to *pliant* and *challenging*, and *non-improvers* to

challenging and *intractable*. While research has tended to show that patients with more severe levels at baseline may obtain at least as much clinical benefit from low-intensity interventions as less severely depressed patients (Bower et al., 2013; Driessen, Cuijpers, Hollon, & Dekker, 2010), our results suggested the opposite: that is, that low-intensity treatment had little effect on more severely distressed patients, especially in the presence of somatic complaints (i.e., fibromyalgia).

The role of fibromyalgia comorbidity in patients' response is an interesting and relevant finding considering that a recent meta-analysis (which reviewed patient response profiles in treatments for depression; Cuijpers, Karyotaki, Reijnders, & Huibers, 2018) found that the characteristic of comorbid general medical disorder was not related to better or worse outcome. Although the diagnosis of fibromyalgia acted as a predictor in our model, indicating the importance of this condition in *non-improvers*, the small sample size prevents us from drawing any firm conclusions; we merely report it as an observation that merits further research with studies designed to gauge the weight of concurrent fibromyalgia in efficacy studies of depression.

Patterns of change contributed to explaining BDI-II scores at termination and follow-up after controlling for baseline scores (objective 4). In fact, patterns of change doubled the variance accounted by the model. Therefore, the early identification of these patterns in clinical practice can contribute to adjust the treatment given to patients in risk (e.g., *non-improvers*) in an early stage, knowing that their pattern of change has been associated to a specific treatment outcome. Indeed, proportions of recovered patients were higher in the *group* and *individual therapy improvers* at each time-point of assessment after the treatment than in *non-improvers*.

As regards the method used, GMM captured the variability of the patterns of change within the sample and was able to identify classes representing subpopulations. It was possible to identify patterns of change in the two phases of treatment, indicating the patients who responded better to group than individual therapy, and vice versa. GMM provided a sound classification of the patients for end-of therapy outcome (based on CORE-SFB) which was consistent across the 3-month and 1-year follow-up assessments in terms of depression symptoms (measured with BDI-II) and level of functioning (measured with GAF).

The RGT indices were also useful for establishing comparisons between groups with regard to variables other than symptoms. In this respect, Andrews and Williams (2014) state that "To personalize a treatment, it is essential that we look beyond the symptom level and consider the processes that subserve anxiety and depressive symptoms." Accordingly, the RGT indices used in this study referred to variables that have been associated with different cognitive processes underlying depressive symptoms (negative view of the self, perceived self-isolation, and CCs). Interestingly, although the three measures changed across the therapy process, only the PICID entered the model for predicting class membership. The relevance of IDs for depression was already highlighted by Montesano, Feixas, Caspar and Winter (2017). In their study of 161 patients with depression and 110 non-clinical controls, they showed that IDs might have an even more important role than the well-established influence of negative view of self. Overall, the RGT indices have a strong potential as predictors of treatment outcome in depression and promise to be particularly useful in the design of personalised treatments; therefore, they should be included in further research on the psychotherapy of depression.

Our results corroborate those of previous research in so far as patterns of change, particularly early response, proved to be a sound predictor of treatment outcome at termination and follow-up. Nevertheless, this is the first study to examine patterns of change in combined group and individual therapy (low and high intensity treatments). In this respect, and considering patients' baseline characteristics, the results showed that *easy* patients (like our *group therapy improvers*) were patients with medium-to-low initial levels of impairment, who were able to benefit from a low-intensity treatment such as CBGT for depression, and that this treatment maintained its effects across time. In contrast, *pliant* and *challenging* patients like our *individual therapy improvers* were patients with medium-to-high initial levels of impairment who benefited from a high-intensity treatment such as individual CBT or DFT; as other authors have suggested (Bower et al., 2013), they may be candidates for a stepped care model. Additionally, seeing that these patients could present certain levels of relapse at the 3-month follow-up assessment, may be convenient to provide them with booster sessions after treatment aimed to prevent relapse.

Our findings are relevant from a cost-efficacy perspective, because if patients are properly assessed at the beginning, they can be promptly assigned to the most suitable therapeutic modality, thus saving unnecessary care costs and multiple futile efforts (Meeuwissen et al., 2019). In stepped care models, low-intensity treatment is recommended for all patients, and those who do not improve in the first step are referred to a high-intensity treatment (Bower & Gilbody, 2005; Silverstone et al., 2017; The National Institute for Health and Care Excellence - NICE, 2018). The results of this approach are likely to improve if patients who will not benefit from the low-intensity treatment, but may benefit from the high-intensity modality, can be identified at baseline (Lorenzo-Luaces, DeRubeis, van Straten, & Tiemens, 2017).

Moreover, our results can inform clinical decisions in the context of FIT to monitor patients' progress, prognosis, and risk factors for treatment failure (e.g., fibromyalgia). In this respect, these results potentially contribute to treatment personalisation as an option for improving treatments for depression. Nevertheless, some ethical considerations should be addressed. For instance, what happens if the predictive models suggest, as the better treatment for a particular patient, a treatment modality against patient's preferences? While literature shows mixed results about the predictive utility of patient's preferences for treatment response for depression (Dunlop et al., 2017; Swift & Callahan, 2009; Winter & Barber, 2013), further research is required not only for clearing out its role. More important, this can be seen as an ethical issue involving patients' rights. Another kind of conflict might occur if the recommended treatment is too costly for the patient or for the health care system.

5.1 Limitations of the Study

Regarding the limitations of our study, the sample size of completers was small for the kind of analyses applied, and this restricted the statistical power of the study. Similar analyses in larger samples should now be carried out in order to corroborate (or not) these results. The data obtained under the controlled conditions of RCTs have limitations regarding their external validity (although the fact that the patients were recruited and seen at their care centres minimized this limitation). Furthermore, these results are similar to those obtained in natural settings for the treatment of affective disorders (Bradford et al., 2011; Schlagert & Hiller, 2015). Adopting a processes-outcome perspective and considering the sequential order of the interventions, conclusions can only be obtained about the effect of each treatment phase, and not about

the possible interaction between first receiving group therapy and then receiving individual therapy, and vice versa. For instance, the effect of group therapy on *individual therapy improvers* cannot be established, because the previous group therapy may have "warmed up" these patients, who then started changing in the individual therapy phase. A design controlling the order of the interventions would overcome this difficulty. In the RCT on which this study is based (Feixas et al., 2013, 2016, 2018), the order was not reversed, for clinical reasons; it was assumed that more specific and individualized work should follow an intervention mostly based on non-specific factors and psychoeducational therapeutic interventions (such as those of low-intensity CBT), and not the other way around.

Additionally, there are several levels of variability present in the current study: therapist and group levels, services, and neighbourhoods (Saxon, Delgadillo, Barkham, & Firth, 2018). In previous analyses (Paz et al., 2019), the effect of therapist nesting accounted for 11% of the variance, showing that there was a dependence in the change of patients treated by the same therapists (each therapist treated between two and three patients on average). In this regard, it should be considered that the classes found might be the product of an interaction between the therapist and the patient´s characteristics (Johns, Barkham, Kellett, & Saxon, 2019). Taking into account that there was a small sample size in each class, we considered that mixed models (i.e., HLM) accounting for the effects of the levels of variability before stated on the pattern clusters, would not have enough power to obtain reliable results and arrive at firm conclusions (Magnusson, Andersson, & Carlbring, 2018; Schiefele et al., 2017).

Another limitation derives from the type of measures utilised in the analyses. They are self-reported questionnaires in which the answers of patients can be less reliable if they are compared with scales rated by clinicians. The inclusion of such

measures (e.g., Hamilton Depression Scale, HAMD, Hamilton, 1960) in future studies would contribute to address this issue.

Regarding the regression models obtained, their predictive power is modest; therefore, prospective predictions based on these models need to be utilised with caution. Taking an interdisciplinary perspective, to consider predictors beyond social and psychological variables (e.g., neurobiological markers, microbiota-inflammation markers; Hahn et al., 2011; Inserra, Rogers, Licinio, & Wong, 2018; Soriano-Mas et al., 2011; Wise et al., 2017) might contribute to increase the variance explained by the models, and to enhance the accuracy of the classification methods for the identification of patients' subpopulations. In this regard, Lee et al. (2018) stated:

> "An integrative approach involving multiple forms and sources of data are needed to deconstruct and parse clinical heterogeneity in mood disorders, as opposed to identifying precise lists of baseline predictors in isolation. For example, sociodemographic characteristics (e.g., employment, socioeconomic, marital status; occupation type) and other phenomenological patient features (e.g., symptom profile, severity), as well as peripheral tissue biomarkers (e.g., tumour necrosis factor-α, interleukin-6, interleukin-1β, C-reactive protein, brain-derived neuro- trophic factor), have been previously reported to significantly predict therapeutic outcomes in clinical populations with a mood disorder (Kessler et al., 2016; Mansur et al., 2016; McIntyre et al., 2017; Strawbridge et al., 2015)" (p. 530)

Considering the sociodemographic characteristics of the sample, the majority of patients were women and elderly people. While it is true that we did not find differences in gender and age between the patients belonging to each patterns (hence, they did not

enter as predictors in the models), predictive models should be interpreted in the light of this sample characteristics. In fact, dynamics of group therapy for depression and the topics covered with young adults along therapy sessions can be quite different to group therapy with elderly people (Cuijpers, Karyotaki, Pot, Park, & Reynolds, 2014; Fiske, Wetherell, & Gatz, 2009).

Despite these limitations, our results are consistent with, and expand on, prior findings regarding the course of psychotherapy, suggesting that there is no one typical pattern of early change for all patients (Lutz et al., 2009), and no one treatment that works for all (Norcross & Wampold, 2011b). Rather, similar patterns of early change seem to be specific for different groups of patients, and these patterns are connected with a specific probability for a positive outcome in different treatment modalities.

5.2 Proposals for Future Research

Considering prospects for future research, studying patterns of change with GMM in other studies with similar designs can contribute to replicate or not our results. The inclusion of the RGT in new studies regarding treatments for depression could provide with further information about the contribution of their indexes to treatment personalisation. A study aimed at exploring the role of the interventions sequence is necessary to clarify the effect of group therapy on individual therapy and vice versa. Additionally, future studies addressing the effect of fibromyalgia in patients' response may be conducted.

Furthermore, designs controlling and accounting for the effect of different sources of variability at different hierarchical levels should be considered in order to

identify their role on treatment outcome. Powered enough samples should be collected in order to achieve this aim.

Finally, the implementation of computerised feedback systems in Spanish speaking services needs to be addressed considering that the instruments for ROM are already validated for using them with Spanish speakers patients (Gimeno-Peón, Barrio-Nespereira, & Prado-Abril, 2018). The implementation of FIT not only would contribute to enhance treatments for depression (and other mental health problems) but would also contribute to enhance psychotherapists training (Paige Peterson & Fagan, 2017), and provide researchers with big data systematically collected to conduct psychotherapy research in order to enhance treatments and services.

6. Conclusions

This research aimed to study the differential response patterns (in terms of trajectories) in patients receiving cognitive therapy for depression in two sequential formats: group and individual. Consistent with our hypothesis, we found a differential response pattern to group and individual therapy. Thus, there were patients that responded rapidly to group therapy *(group therapy improvers)*, starting to improve at the beginning of this treatment phase (and even earlier, showing pre-treatment changes), while other patients *(individual therapy improvers)* needed a second phase of individual therapy to start improving and achieve the same levels of recovery than the first group. A third pattern was found, accounting for patients that did not improve along the two phases of treatment *(non-improvers).*

Following the objectives that guided the current study, the characteristics that differentiated the patients belonging to each pattern cluster were identified: depression symptoms severity, psychological distress, general functioning, self-ideal discrepancy, perceived social isolation, conflictual construction of the self, and fibromyalgia diagnosis. In this regard, *group therapy improvers* were the patients who started the treatment with less severe levels of depression and psychological distress, and higher levels of functioning than the other groups. *Individual therapy improvers* started therapy with medium-to-high levels of depression and psychological distress, and more impairment than *group therapy improvers.* For *individual therapy improvers*, their scores at baseline were similar than *non-improvers.* However, fibromyalgia diagnosis emerged as a significant characteristic presented in this pattern. In terms of outcome, the scores of the measures considered change accordingly. Thus, *group* and *individual therapy improvers* changed for the better their scores in depression symptoms severity, psychological distress, general functioning, self-ideal discrepancy, perceived social

isolation and conflictual construction of the self. *Non-improvers* did not exhibit significant change in these measures excepting for depression symptoms severity, in which they improved but not as much compared to the other groups. In fact, unlike the other groups, their scores in depression symptoms severity were not in the non-clinical range at any assessment point after treatment.

Considering the prediction of patterns membership from intake characteristics, the measures of depression symptoms severity, psychological distress, and conflictual construction of the self, acted as predictors of the patterns. The inclusion of fibromyalgia diagnosis to the models allow us to establish a better classification and prediction of the patterns. Fibromyalgia diagnosis increased the likelihood of belonging to *non-improvers*. In this regard, fibromyalgia could be considered a risk factor that can increase the probability of risk failure in psychotherapy for depression.

Finally, the patterns of change identified were predictive of treatment outcome at termination, 3-month and 1-year follow-up assessments. In this regard, *group* and *individual therapy improvers* presented the high proportion of patients recovered from depression in the three assessment points after treatment. Therefore, these patterns were related to a specific likelihood of obtaining a different outcome in different treatment modalities.

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