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Interpersonal Profiles in Emotional Disorders Predict the Importance of Alliance Negotiation for
Early Treatment Outcome

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Abstract

Aim. The aim of this study was to identify differential baseline profiles of interpersonal problems in patients with emotional disorders, and investigate their ability to predict the extent to which alliance is important for early treatment outcome in therapy. **Methods.** Ninety-six patients diagnosed with emotional disorders were admitted to psychotherapy at a private practice center. After the first session, participants completed the Inventory of Interpersonal Problems, and after each of the first four sessions the Alliance Negotiation Scale and the Outcome Questionnaire. We characterized the interpersonal problems of the sample using the circular statistics and the structural summary methods. Based on evidence of heterogeneity between patients, we conducted cluster analysis to identify differential profiles of interpersonal problems. We tested whether the identified profiles can predict the strength of the association between alliance negotiation and early treatment outcome using hierarchical linear models. **Results.** A two-cluster solution showed the best fit for the data. One cluster was characterized by Cold interpersonal problems (too hostile), the other by Overly Nurturant interpersonal problems (too dependent). The identified profiles were significant predictors of the early alliance negotiation-outcome association. Overly Nurturant patients showed greater early improvements in outcome in the face of a stronger alliance negotiation. **Conclusions.** Results support the importance of personalized approaches using patients' interpersonal profiles to determine the importance of alliance negotiation for early treatment outcome. Findings should be replicated in randomized controlled trials using strategies to manipulate alliance negotiation.

Keywords: Emotional disorders; Interpersonal profiles; Early response; Alliance-outcome association; Interpersonal problems; Early outcome

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Public Health Significance Statements

Individual differences in interpersonal problems of patients with emotional disorders reveal two distinct interpersonal clusters: Cold and Overly Nurturant. Early in treatment, patients belonging to the Overly Nurturant profile benefit more from a strong alliance negotiation than do patients belonging to the Cold profile. These findings may have important implications for personalized psychotherapy for optimizing treatment outcome.

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Historically, psychiatric study designs have been based on patient diagnosis (Waltman & Sokol, 2017). In the last decades, however, there has been a growing interest in transdiagnostic models for understanding psychopathology, and in unified therapy manuals for the treatment of different disorders with common features (Barlow et al., 2011). One of the most widespread examples of this change is the emergence of the notion of *emotional disorders*, which categorizes anxiety and mood disorders based on two of their commonalities: negative affect and autonomic arousal (Allen, McHugh, & Barlow, 2007). Barlow and colleague have developed a unified protocol to treat this wide range of dysfunctions, targeting their common mechanisms and seeking to facilitate both therapist training and supervision (Barlow et al., 2011).

At the same time, there has been a growing body of research supporting the need for personalization of treatment based on the patients' baseline characteristics, through the selection and adaptation of interventions (DeRubeis et al., 2014). Drawing on the construct of *responsiveness* (i.e., tailoring the treatment to patient needs at a given moment), several models were developed to inform treatment adaptation based on empirically determined patient markers (Constantino, Boswell, Bernecker, & Castonguay, 2013). Although this ideographic approach may appear conceptually opposed to the call for generic and overall transdiagnostic treatments (Waltman & Sokol, 2017), in the last years the two trends have been converging, with the recognition that generic treatments would benefit from adaptations based on patient characteristics and needs (Thompson-Hollands et al., 2014).

Considering that psychotherapy is by definition an interpersonal process and that treatments differ in their focus on the relationship between the patient and therapist as a

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mechanism of change in treatment (Zilcha-Mano et al. 2016), the way in which patients interact with others and their relationship problems are excellent candidates for exploring the need for treatment selection and adaptation for individual patients (Constantino et al., 2013). Previous research has shown that patients' interpersonal problems are related both to relevant treatment process variables, such as therapeutic alliance (Dinger, Zilcha-Mano, McCarthy, Barrett, & Barber, 2013) and to therapy outcome (Quilty, Mainland, McBride, & Bagby, 2013).

To be used for differentiating between patients with distinct needs, interpersonal problems should be able to serve as a criterion for grouping together patients with similar characteristics. In the present study, we explored if patients with emotional disorders present with distinct profiles of interpersonal problems. Following theory on interpersonal problems (Horowitz, 2004), such profiles may represent inhibition or excessive behavior distributed within a circumplex model, based on the dynamic between the two interpersonal dimensions of communion and agency. *Communion* (the horizontal axis of the circumplex) describes the degree to which individuals strive to connect and relate with others, ranging from hostile and indifferent behaviors at the negative pole to overly nurturant and dependent ones at the positive pole. *Agency* (the vertical axis) describes the degree to which individuals need to influence others or be influenced by them. This dimension ranges from maladaptive submissive behaviors at the negative pole to extremely dominant ones at the positive pole. Interpersonal problems have been shown to identify distinct interpersonal profiles among patients displaying distinct mental health disorders, such as panic (Zilcha-Mano et al., 2015), depression (Cain et al., 2012; Constantino et al., 2008; Grosse Holtforth et al., 2014), social phobia (Cain, Pincus, & Grosse Holtforth, 2010), obsessive-compulsive disorder (Cain, Ansell, Simpson, & Pinto, 2015), generalized anxiety disorder (GAD, Przeworski et al., 2011; Salzer et al., 2008), and fear of failure (Wright, Pincus,

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Conroy, & Elliot, 2009). To the best of our knowledge, however, no study to date identified interpersonal profiles within emotional disorders as a whole.

If indeed distinct profiles exist among patients with emotional disorders, it is important to know whether such profiles have the potential of being instrumental in the personalization of treatment. Distinct subpopulations of patients characterized by distinct interpersonal profiles may benefit most from different approaches in treatment. One area in which it may be especially important to tailor treatment to the patient is the formation and maintenance of the working relationship between the patient and the therapist. This might be especially important during the first sessions of treatment, when the alliance is formed and much of the change in treatment occurs (Frank & Frank, 1961; Ilardi & Craighead, 1994), especially considering that the patterns of change that appear early in treatment are robust predictors of the course of subsequent treatment (Lutz et al., 2014; Rubel et al., 2015). Thus, establishing how patients' interpersonal profiles may moderate the effects of early processes in alliance formation and maintenance on early outcome can provide meaningful information for treatment adaptation and optimization.

According to contemporary theories, alliance formation and maintenance may require the use of *alliance negotiation* approaches (Safran & Muran, 2000, 2006), that are defined as the ability of the therapeutic dyad to resolve conflicts in the *bond* when they arise, or to address disagreement in the *tasks* and *goals* of therapy (Safran & Muran, 2000). Thus, the use of alliance negotiation approaches may result in the formation of a fruitful relationship, and in the resolution of conflicts that arise in the therapeutic relationship (Safran & Muran, 2006).

Empirical research demonstrates the importance of alliance negotiation for treatment success. Meta-analyses have suggested that an adequate alliance negotiation through the resolution of ruptures in the alliance predicts better treatment outcome (Eubanks, Muran, &

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Safran, 2018). Furthermore, therapist training in enhancing alliance negotiation has been associated with greater patient improvement (Safran, Muran, & Eubanks-Carter, 2011). Alliance negotiation has also been found to be significantly associated with patient satisfaction with treatment (Doran, Safran, & Muran, 2016), and feedback on alliance negotiation was found to be more helpful than general feedback on the therapeutic alliance (Cooper et al., 2015). Although much knowledge has been gained in recent years regarding alliance negotiation, little is known about the potential use of alliance negotiation approaches in treatment adaptation, or whether some subpopulations may benefit more than others from them. Even less is known about the importance of alliance negotiation in a broader cultural context, as much of the knowledge accumulated so far has been from North America. An instrument designed specifically to measure alliance negotiation (i.e., the Alliance Negotiation Scale [ANS]) has been developed and validated in the United States (Doran, Safran, Waizmann, Bolger, & Muran, 2012). Although adaptations of the ANS exist in Latin America, especially in Argentina, with forms to be completed by the patient (Waizmann et al., 2015) and the therapist (Gómez Penedo, Doran, & Roussos, 2018), nothing is known about the potential role of alliance negotiation in treatment in Argentina. Taken together, although alliance negotiation has been recognized as a relevant therapeutic process, both from a theoretical and empirical perspective, it is not clear to what extent patients' interpersonal profiles can predict the degree to which alliance negotiation is important for treatment outcome.

Alliance negotiation is generally divided into two factors (Doran et al., 2012). The first factor, comfort with negative feelings (CNF), express the degree to which patients can express and integrate in the course of one session their negative thoughts and feelings about the therapist or the therapy (related to the bond dimension of the alliance). The second factor, flexible and

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negotiable stance (FNS), expresses the degree to which the patient negotiates with the therapist the tasks and goals of treatment (related to the tasks and goals dimension). The two alliance negotiation factors have separate and specific associations with the two interpersonal dimensions of agency and communion (Horowitz, Gómez Penedo, Roussos, Silberschatz, & Snyder, 2017). Patients whose problems are being too communal tend to have difficulty expressing and integrating their negative feelings and hostility in their relationships; by contrast, patients whose problems are being too agentic tend to need to feel that they dominate others in their relationships.

On this context, the aim of this study is to investigate whether distinct profiles of interpersonal problems can be identified among patients with emotional disorders, and if so, to analyze the ability of these profiles to predict the importance of alliance negotiation for early treatment outcome. The *first hypothesis* of the study was that a sample of patients with emotional disorders shows different profiles of interpersonal problems. Considering the heterogeneity of the clusters identified in different samples in the literature, and the cultural specificities of the population analyzed, we did not hypothesize about a given amount or type of profiles to be identified in the sample. Consistent with the literature on interpersonal problems (Cain et al., 2010, 2012; Przeworski et al., 2011), we expected that it would not be possible to explain these profiles based on the patients' diagnosis (i.e., anxiety vs. mood disorders). The *second hypothesis* of the study is that patients' interpersonal profile will moderate the alliance-negotiation-early outcome relationship. Because of the pioneering nature of the present study no specific profiles can be anticipated *a priori*. Nevertheless, based on previous studies on interpersonal clusters within specific mental disorders, and on the general distinction between overly communal and overly agentic dimensions (Horowitz et al., 2017), it is possible to draw the following

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hypotheses: For overly communal (i.e., too dependent and friendly) patients, a greater CNF in the therapeutic relationship will be related to better early outcome, whereas for overly agentic (i.e., too domineering) patients, a greater FNS during the first sessions of treatment will be associated with better early outcome in treatment.

Methods

Participants

The sample consisted of 96 adult patients who were consecutively admitted for psychotherapy treatment to a private practice center in Buenos Aires, Argentina. To be included in the sample, patients need to be at least 18 years old and have a main diagnosis of an emotional disorder (i.e., anxiety or mood disorders; Allen et. al., 2007), based on the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.; DSM-IV-TR; American Psychiatric Association [APA], 2001). The exclusion criteria were: (a) severe comorbid personality disorder that made the patients ineligible for individual therapy at the center as their main treatment, (b) comorbid bipolar or psychotic disorders, (c) current active suicidality, (d) neuro-cognitive deterioration, (e) substance abuse, (f) assignment to couple therapy, group therapy, or multi-systemic family therapy within or outside the center. Patients' mean age was 36.44 years ($SD = 11.84$). Patients were mostly female (61.5%), and most had participated in at least one previous treatment (74.4%). The distribution of affective disorders in the sample was as follow: 29.8% major depressive disorder, 24.5% panic disorder without agoraphobia, 16% GAD, 8.5% panic disorder with agoraphobia, 6.4% dysthymic disorder, 4.3% unspecified anxiety disorder, 3.2% specific phobia, 3.2% obsessive-compulsive disorder, 2.1% social phobia, and 2.1% unspecified mood disorder.

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Eight therapists participated in the study. They were all psychologists, mostly female (75%). They had an average age of 32.83 years ($SD= 5.15$; range= 28-42 years) and an average clinical experience of 6.86 years ($SD= 4.26$; range= 3-15 years). Before participating in the study, the therapists completed a two-year clinical training and specialization provided by the center in *Solution-Focused Brief Therapy* (SFBT; de Shazer et al., 1986; SFBT Research Committee, 2007). During the course of study, the therapists received weekly supervision provided by the center. The patients were not equally distributed among therapists, but rather assigned to them based on clinical experience and availability. The therapists' caseload ranged from five to 27 patients.

Treatment

The clinic where the treatments were conducted offered therapists training and supervision in SFBT (SFBT Research Committee, 2007). SFBT is a treatment based on the work of de Shazer et al. (1986), aimed at finding solutions to patients in problematic situations by focusing on their resources and strengths, rather than on the mechanisms that cause the problem (de Shazer et al., 1986; SFBT Research Committee, 2007). Although SFBT was originally grounded in a systemic paradigm, it incorporates notions and techniques from other theoretical frameworks, such as cognitive-behavioral therapy and motivational interviewing (SFBT Research Committee, 2007). SFBT assumes that most patients already have the resources to overcome their difficulties, and they may have even already used successful solutions in the past in some situations without noticing. Patient and therapist work together to find and generalize these solutions to other situations that the patient was not able to resolve successfully (de Shazer et al., 1986; SFBT Research Committee, 2007). At this clinic, therapists were allowed to practice

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SFBT as they usually did, without adherence monitoring or specific guidance to use particular interventions, aiming to explore therapist conduct in its natural form.

Measures

Interpersonal Problems. To assess interpersonal problems, we used the 64-item Inventory of Interpersonal Problems (IIP-C; Horowitz et al., 2000). IIP-C items represent a variety of difficulties in interpersonal behaviors (excesses or inhibitions), and are rated on a 5-point Likert scale ranging from 0 (not at all) to 4 (extremely). The instrument contains eight subscales: Domineering, Vindictive, Cold, Socially Inhibited, Nonassertive, Exploitable, Overly Nurturant, and Intrusive. The subscales are distributed in a circumplex, and can be summarized by two meaningful interpersonal dimensions of *communion* (degree to which the individual shows nurturant tendencies) and *agency* (degree to which the individual shows dominant tendencies). The present study used a version of the IIP-C adapted to the Argentinian context, which showed adequate internal consistency (Cronbach's $\alpha = .75$) and construct validity, based on factorial analysis (Maristany, 2005). In the present study, the internal consistency was excellent (Cronbach's $\alpha = .90$).

Alliance Negotiation. To study alliance negotiation, we used the ANS (Doran et al., 2012). ANS is a self-reported measure that consists of 12 items rated on a 7-point scale, ranging from 1 (never) to 7 (always), which evaluates the patient-therapist alliance negotiation process on two subscales. The first subscale, *Comfort with negative feelings* (CNF), explores the degree to which the patient is able to integrate and discuss negative feelings or thoughts about the therapeutic process or about the therapist, with the therapist during the session. This subscale contains items such as "I am comfortable expressing disappointment in my therapist when it arises." The second subscale, *Flexible and negotiable stance* (FNS), describes the degree to

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which patient and therapist are able to negotiate and resolve disagreements about therapy tasks and goals. This subscale contains items such as “My therapist is rigid in his/her ideas regarding what we do in therapy.” Previous research showed moderate associations between these two factors ($r = .34$; Doran et al., 2012). For this study, we used the patient form of the measure, specifically, an adaptation of the ANS form to the Argentinian context (Waizmann et al., 2015). The version we used showed adequate internal consistency both for total ANS scores ($\alpha = .78$) and for the two subscales (CNF $\alpha = .92$, FNS $\alpha = .87$), external validity, and construct validity. In the current sample, the ANS total score showed adequate internal consistency ($\alpha = .70$). The CNF showed adequate internal consistency ($\alpha = .74$), and Cronbach's alpha for the FNS was slightly below the established limit of .70 ($\alpha = .67$).

Clinical Severity. To measure the evolution of patient's clinical severity as an outcome variable, patients completed the Outcome Questionnaire 45 (OQ.45; Lambert et al., 1996). The OQ.45 is a self-reported measure that consists of 45 items rated on a scale from 0 (never) to 4 (almost always). The measure explores three sources of distress (i.e. symptomatic distress, social role, and interpersonal relations), with higher scores representing greater distress. In this study, we used the total score of the measure as an overall assessment of patient's clinical status and its change during the first sessions of treatment. We used a translated version of OQ.45, which was adapted in Chile (Von Bergen & De la Parra, 2002). In an Argentinian clinical sample, this version of the instrument showed good internal consistency ($\alpha = .92$) and test-retest reliability ($r = .86$), as well as evidence of concurrent validity and sensitivity to change (Fernández-Álvarez, Hirsch, Maristany, & Torrente, 2005). In the current sample, OQ.45 total score showed excellent internal consistency ($\alpha = .94$).

Procedures

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Following the usual evaluation procedure by the private center, patients were diagnosed based on the DSM-IV-TR (APA, 2000) by an expert psychotherapist at the intake interview. Patients who were diagnosed with an emotional disorder and met the inclusion criteria were invited to participate in the study by the professional who conducted the intake interview. Participation was voluntary, without any consequences for patients who declined to enroll. After agreeing to participate, patients signed informed consent forms and were assigned to one of the therapists, based on the therapist's clinical expertise and availability (following the usual procedure of the center). The patients completed the IIP-C after the first therapy session, and the ANS and OQ.45 after each of the first four sessions. Patients completed the questionnaires alone, in a separate room. Completed questionnaires were stored in a closed folder, and therapists were not given access to forms completed by their patients. All participants provided a written informed consent before participating in this study. The procedures described in this paper were approved by the Internal Review Board of Universidad de Buenos Aires.

Data Analyses

To test the hypotheses of the study, we followed a three-stage process of identifying clusters to explain interpersonal heterogeneity in a sample of patients with emotional disorders (for more details see Zilcha-Mano et al., 2015). First, we characterized the interpersonal problems of the sample based on the circular statistics and structural summary methods, two widely used analytic strategies, to analyze the inventory of interpersonal problems (IIP) data (Wright, Pincus, Conroy, & Hilsenroth, 2009). Second, we determined whether a homogenous interpersonal problem profile can adequately characterize the sample of patients with emotional disorders, or whether the data suggest that distinct clusters of interpersonal characteristics better characterize the interpersonal problems of the sample. Third, if we found that distinct clusters of

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interpersonal problems better characterized the sample, we proceeded to investigate the implications of pre-treatment cluster assignment on the association between alliance negotiation and early outcome. The first two stages of the analysis were aimed to test the *first hypothesis* of the study (i.e., the existence of differential interpersonal problems within emotional disorders). The third stage was aimed to test the *second hypothesis* (i.e., the moderation effect of the alliance by patient cluster).

In the first stage of the analysis, to characterize the interpersonal problems of the sample, we used the circular statistics method, an analytic strategy based on the two meaningful dimensions of interpersonal problems, agency and communion, and on the patient's individual angular projection on the circumplex (Wright, Pincus, Conroy, & Hilsenroth, 2009). This method provides a circular mean (i.e., the average angular displacement in the sample), a circular variance (the angle displacement of sample deviation around its mean), and circular mean 95% confidence intervals (CI).

In addition to the circular statistics analyses, we also used the structure summary method to model interpersonal profiles by plotting participants' data on a sinusoidal curve (Wright, Pincus, Conroy, & Hilsenroth, 2009). The sinusoidal curve makes it possible to identify four meaningful structural parameters to characterize the interpersonal problems of the sample: (a) angular displacement (distance between 0° and the peak of the curve), which indicates the predominant interpersonal problem; (b) elevation (average level of interpersonal distress displayed on the curve), which is a measure of overall interpersonal distress level; (c) amplitude (difference between the average level and the peak score on the sinusoidal curve), which is the difference between group's mean and predominant interpersonal problems in the sample, and as such, it represents the degree of interpersonal profile differentiation; lower amplitude scores

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indicate a homogenous profile, with no salient peak values (i.e., predominant interpersonal problems), whereas higher amplitude scores attest to the presence of predominant interpersonal problems in the profile, manifest as clear peak values; and (d) goodness of fit, which is a measure of how prototypical the profile is, based the calculation of an R^2 coefficient that provides a goodness of fit measure regarding the adequacy of the three parameters to describe the interpersonal data displayed in the circumplex (Wright, Pincus, Conroy, & Hilsenroth, 2009). When the R^2 value is higher for a cluster solution than it is for one profile solution, it can be suggested that the cluster solution better characterizes the sample. In the case of a low R^2 or low amplitude, we proceeded to identifying distinct interpersonal clusters that may better characterize the sample than a single homogeneous profile.

In the second stage of the analysis, to identify distinct clusters of IIP scores in the sample, we used the *Mclust* package of the *R* software (Scrucca, Fop, Murphy, & Raftery, 2016). The aim of the cluster analysis was to detect homogenous subtypes or groups of similar individuals within a larger, heterogeneous sample. The clusters were constructed using the two IIP axes for agency and communion as the criteria for similarity vs. dissimilarity. We tested 2-, 3-, and 4-cluster solutions. After identifying the cluster solution that best explains the data, we proceeded to appraising the interpersonal distinctiveness of the clusters by comparing their structural summary and structural summary parameters with those of the overall cohort.

In the third stage, after we identified interpersonal clusters in the sample and characterized them based on circular statistics and the structural summary methods, to test the *second hypothesis* of the study, we used hierarchical linear modeling (HLM; Raudenbush & Bryk, 2002) to examine the effects of pre-treatment interpersonal clusters on the association between alliance negotiation and early outcome. HLM can handle the hierarchical nature of the

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data resulting from the repeated measures (both of OQ.45 and ANS), nested within patients.

HLM also provides a robust method for dealing with missing longitudinal data. All participants who completed at least one measure of OQ.45 and ANS during the first four sessions were included in the analysis, emulating an intent-to-treat approach. To test for therapist effects, we calculated Intraclass Correlations Coefficients (ICC) based on a three-level unconditional time-as-only predictor model. The ICCs showed that the therapist effect accounts for less than 1% of the variance in the intercept (ICC= .0001) and in the time slope (ICC=.001). Thus, given the relatively small sample size and the lack of a therapist effect, we did not add therapists as a third level, and used two-level models in all analyses.

We first conducted a two-level unconditional model with time in sessions as the only level 1 predictor (centered on session 4) and OQ.45 scores as the dependent variable. This model estimated both *within*-patient levels of OQ.45 scores over time and *between*-patients mean levels. Thus, the model provides two estimations of early outcome: (a) the estimate level of OQ.45 at the end of session 4 (i.e., intercept of the model, where the time variables was centered), and (b) the estimate rate of change during the first four sessions (i.e., effect of time during sessions, as level-1 predictor). Next, we conducted a conditional model, including patient's interpersonal cluster as a level 2 predictor of OQ.45 Session 4 level and rate of change between sessions. Finally, we tested interactive effect models, including patients' variation across their own mean of alliance negotiation (i.e., person-mean centered alliance negotiation score) as a level 1 predictor; at level 2, we incorporated patients' interpersonal cluster and alliance negotiation mean level main effects during the first four sessions (grand mean centered), and the interactive effect of alliance negotiation by interpersonal cluster (see the Online Supplement for a full description of these models).

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Results

Descriptive

Pre-treatment interpersonal problems subscales in the total sample and OQ.45 and ANS pre-treatment scores and average levels during the first four sessions are presented in Table S1 of the Online Supplement materials.

Characterizing the interpersonal profile of the sample

Structural summary parameters and circular statistics for the total sample are presented in Table 1. The results of the structural summary method show that the sample displayed an average angular displacement of 11.98° , corresponding to an interpersonal problems style of being overly nurturing. The elevation of the total sample (elevation = .98) was within the range previously observed for emotional disorders, with a score greater than those reported for panic disorder (i.e., .55) but lower than those presented for major depression (i.e., 1.24) (Zilcha-Mano et al., 2015). Finally, the results obtained with the structural summary method show an adequate goodness of fit ($R^2 = .82$) of the circumflex model to the total sample data. The circular statistics method also revealed a circular mean displacement of 5.25° , suggesting problems of being overly nurturing, and a circular variance of 82.18° , 95% circular CIs [348.81° , 21.69°]. The low amplitude of the profile (amplitude = .19), however, suggests an undifferentiated interpersonal profile in the total sample, without clear predominant interpersonal problems within the group (i.e., the average angular displacement of the sample did not represent a salient interpersonal feature of the sample).

Identifying distinctive profiles of interpersonal problems

Given the low amplitude, we proceeded to search for distinct interpersonal profiles that may better characterize the sample. To analyze possible different prototypes of interpersonal problems in the sample, we used cluster analysis based on the two meaningful dimensions of

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interpersonal problems, agency and communion. We examined various solutions (two, three, and four clusters) for the sample. A two-cluster solution showed the best fit for the data. Table S1 shows the interpersonal problem scores in the two clusters and the cluster differential OQ.45 and ANS baseline scores, and levels in the first four sessions of treatment. Structural summary parameters and circular statistics for the two clusters are presented in Table 1. The locations on the interpersonal circumplex of the two empirically-driven clusters, and the total sample are presented in Figure 1, where the two clusters appear at opposite sites on the IIP circumplex.

The first cluster (n= 54) was located at 165.67° on the circumplex, corresponding to the octant of the *Cold* interpersonal problem, characterized by limitations in feelings and in communicating positive affect toward others, and by a lack of interests in connecting with others. Therefore, we named this cluster the *Cold* interpersonal profile. The elevation on patients classified in this cluster (cluster elevation = 1.08) was higher than that observed in the total sample, meaning that patients have greater overall interpersonal problems. The cluster presented a meaningful increase in amplitude (cluster amplitude = .43) over the entire sample, suggesting that it represents a distinctive interpersonal profile, with prototypical interpersonal problems. The cluster had a slightly better R^2 (cluster $R^2 = .84$) than the total sample, indicating that its inclusion improved the goodness of fit of the model. Circular statistics suggested a similar location for this cluster, with a circular mean of 174.68° and a circular variance of 63.37° , 95% circular CIs [157.78° , 191.58°].

The second cluster (n= 42) presented an elevated peak at 357.38° on the circumplex, located in the *Overly Nurturant* interpersonal octant. Individuals with these interpersonal difficulties are too engaged in pleasing others, and permissive in their relationships. We named this cluster the *Overly Nurturant* interpersonal profile. The elevation of this cluster (cluster

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elevation= .84) was smaller than that of the hostile cluster and of the total sample. The cluster presented a greater amplitude (cluster amplitude= .96¹) than the total sample, suggesting that it represents a clearly differentiated interpersonal profile, with predominant interpersonal problems. The R^2 of the cluster was also markedly greater (cluster $R^2 = .90$) than that of the total sample, indicating a better goodness of fit of the cluster to the data. Finally, the circular statistics presented a circular mean very close to the angular displacement from the structural summary, with a circular mean of 358.38° and a circular variance of 27.87°, 95% circular CIs [349.95°, 6.82°]. The improved amplitude and goodness of fit of the clusters, compared to the total sample, and the fact that the CIs of the two clusters did not overlap (Table 1) provide further evidence of the distinctness of the interpersonal problems of members belonging to the two empirically-based clusters.

For an overall comparison of the clusters, we conducted independent samples *t*-tests to examine whether there were significant differences in interpersonal subscales and dimensions of the clusters (Table S1). Members of the Cold cluster presented significantly more interpersonal problems of being vindictive, cold, and socially inhibited, whereas members of the Overly Nurturant cluster presented significantly more problems of being exploitable and, as expected, overly nurturant. There was also a significant difference between the two clusters on the communion dimension, with members of the Cold cluster presenting greater problems of negative communion (indifferent and detached behaviors), and members of the Overly Nurturant cluster having more problems of positive communion (being too nurturant or self-sacrificing).

¹ The difference between the amplitude of the Cold cluster (i.e., .43) and the Overly Nurturant cluster (i.e., .96) suggests that the former is a less distinctive interpersonal profile than the latter. Note, however, that the amplitude from the Cold cluster represented an important increase over the total amplitude of the sample profile (i.e., .19). Furthermore, the amplitude of the Cold cluster reached the minimum to be considered a distinctive interpersonal profile (Wright, Pincus, Conroy, & Hilsenroth, 2009), and exceed the amplitude of several discernable profiles reported in the literature (Przeworski et al., 2011; Salzer et al., 2008).

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We also conducted independent samples *t*-tests to check whether the two clusters differed in their baseline and average level of clinical severity (i.e., OQ.45 scores) (see Table S1). Although there was no significant difference in the clinical severity of the cluster at baseline, the difference in the average level of severity during the first four sessions approached significance. From a pathoplasticity perspective, it is important to clarify that the clusters are not explained by the patients' symptom severity (Cain et al., 2012; Przeworski et al., 2011). Thus, we conducted Bayesian independent-sample tests based on 10,000 iterations using SPSS version 25 (Peck, 2017) to elucidate whether there were significant differences in symptom severity (based on the OQ.45 subscale) between clusters.² The results of these follow-up analysis showed that there were no significant differences in baseline symptom severity of the clusters, $t(91) = .67$, Bayesian 95% credible intervals (BCI₉₅)[-0.31, 0.15], $p = .52$, or in average level of symptom severity of the clusters during the first four sessions of treatment, $t(91) = 1.04$, BCI₉₅[-0.34, 0.11], $p = .30$. Note that the fact that the zero was included in the BCI₉₅ and that both limits of the BCI₉₅ are close to zero further supports the null hypothesis (Kruschke, 2013). The Bayes factors (BF) for the differences in baseline symptom severity (BF = 5.06) and symptom severity level (3.78) provide, in both cases, moderate evidence in favor of the null hypothesis (i.e., lack of a difference between groups) rather than of the alternative hypothesis (Peck, 2017). We also tested Bayesian loglinear regression models, based on 10,000 iterations, to check whether there was an association between cluster membership and having (a) a mood or anxiety disorder diagnosis or (b) a diagnosis of major depression disorder, GAD, or panic disorder (these diagnoses

² Bayesian approaches were used because in these analyses we aimed at not rejecting the null hypothesis. Therefore, we had to reduce the likelihood of a Type II error (i.e., failure to reject a false null hypothesis). Based on iterative tests, Bayesian models increase effective sample size, provide credible 95% intervals of the effects, and calculate a factor value (Bayes factor) that represents the ratio of the likelihood of the null and the alternative hypotheses (Kruschke, 2013; Peck, 2017). Compared to classic statistical procedures (e.g., independent-sample *t*-test, chi-squared test, etc.) Bayesian analysis provides not only robust evidence to *reject* the null hypothesis but also to *support* it (Kruschke, 2013).

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represented the 78.80% of the sample). As expected, the analysis showed no evidence of an association between cluster membership and patient diagnosis, $\chi(1) = .31$, $BCI_{95}[-1.07, 0.60]$, $p = .58$, or between cluster membership and having a diagnosis of depression, GAD, or panic disorder, $\chi(2) = 1.17$, GAD $BCI_{95}[-1.53, 1.28]$, panic disorder $BCI_{95}[-0.74, 1.63]$, $p = .56$. Furthermore, the BF for mood vs. anxiety disorders ($BF = 2.37$) and depression, GAD, and panic disorder ($BF = 2.80$) suggested a greater likelihood of the null hypothesis (i.e., lack of association between clusters and diagnosis) than of the alternative hypothesis.

Cluster effects on early change

Unconditional model. The results of the unconditional model with time-as-only-predictor (Table 2), showed that on average the OQ.45 score after session 4 was 1.53, $\gamma_{00} = 1.53$, $SE = 0.06$, $CI_{95} [1.41, 1.65]$, $t(94) = 25.030$, $p < .001$. Patients showed a significant early change during the first four sessions, $\gamma_{10} = -0.06$, $SE = 0.01$, $CI_{95} [-0.08, -0.04]$, $t(94) = -4.520$, $p < .001$. Patients' OQ.45 score dropped by 0.06 units on average from one session to another.

Conditional model: Cluster main effects on early outcome. Next, we tested two-level conditional models, including the interpersonal cluster as the only level-2 predictor of both the intercept (OQ.45 score after session 4) and the slope (OQ.45 weekly change) of the model. Results for this model (Table 2) showed that there was no significant cluster main effect on the estimated OQ.45 score after session four, $\gamma_{10} = -0.21$, $SE = 0.12$, $CI_{95} [-0.45, 0.03]$, $t(93) = -1.724$, $p = .09$, nor on the early rate of change in OQ.45, $\gamma_{10} = -0.02$, $SE = 0.03$, $CI_{95} [-0.08, 0.04]$, $t(93) = -0.732$, $p = .47$.

Moderation models: Interpersonal cluster as a moderator of the association between alliance negotiation and early outcome. We used two-level models to test whether the interpersonal cluster presented interactive effects with alliance negotiation on OQ.45 early treatment outcome. We tested two separate models, one for each of the two alliance negotiation

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subscales. In these models, the targeted alliance negotiation subscales were first included as level-1 predictors (time-varying covariates). At this level, the alliance negotiation scores were person-mean centered. We also included in these models the average level of the targeted ANS subscale during the first four sessions, as a level-2 predictor (i.e., time-invariant covariate; grand mean centered). This method of including the same variable at both levels, with a differential centering strategy, enabled us to disaggregate *within-* from *between-*patients effects of alliance negotiation on OQ.45 scores. In addition to the main effects of alliance negotiation, we incorporated the cluster main effect and an interactive effect of alliance negotiation by cluster at level 2. ANS subscale levels were centered on its mean before creating the interactive term.

Findings reveal a significant interactive effect of interpersonal cluster by CNF level during the first four sessions on patients' early rate of change, $\gamma_{13} = -0.08$, $SE = 0.04$, $CI_{95} [-0.15, -0.01]$, $t(89) = -2.114$, $p = .04$, $pseudo R^2 = .09^3$ (See Table 2). Patients in the Overly Nurturant interpersonal cluster presented 0.08 units greater session-by-session reduction in OQ.45 for each unit of increase in the CNF of the ANS (see Figure 2 for an illustration of this interactive effect)⁴. But we found no interactive effect of cluster by between-patients CNF on OQ.45 scores at session 4, or on the within-patient CNF effect on OQ.45 scores (Table 2). As expected, there were no significant interactive effects of cluster by alliance negotiation FNS on patients' OQ.45 scores at session 4, OQ.45 early rates of change, or within-patient FNS effect on OQ.45 scores (Table 2).

Discussion

³ To calculate a pseudo R^2 effect size, we computed conditional main effect models with alliance negotiation and clusters as predictors (without the interactive effect). This allowed us to establish the variance explained by the interactive effect (i.e., 9%).

⁴ Considering that the difference in the average level of OQ.45 severity during the first four sessions between the two clusters approached significance, we sought to replicate this finding controlling for this effect. We therefore reran the model including the level of OQ.45 severity across the first four sessions as a level 2 predictor of the intercept, the session-by-session change, and the alliance negotiation within-patient effect. After controlling for this effect, the interactive effect was still significant ($\gamma_{13} = -0.08$, $SE = 0.02$, $t(86) = -2.594$, $p = .01$).

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The aim of this study was to explore whether distinct profiles of interpersonal problems can be identified in a sample of patients that sought therapy for emotional disorders, and to investigate whether these interpersonal profiles can predict the effect of alliance negotiation on early treatment outcome. Supporting our *first hypothesis*, we found evidence for the existence of two distinct interpersonal problems profiles: Cold and Overly Nurturant. These findings are consistent with previous studies identifying profiles of interpersonal difficulties in given diagnostic conditions such as depression (Cain et al., 2012; Constantino et al., 2008), panic disorder (Zilcha-Mano et al., 2015), and GAD (Gómez Penedo, Constantino, Coyne, Westra, & Antony, 2017). The present study adds to the available literature by providing evidences of the generalized existence of these profiles that were found here to be important also in a transdiagnostic sample of emotional disorders (Allen et al., 2007).

The findings suggest that the interpersonal profiles identified are unrelated to patients' diagnosis (mood or anxiety) or to their symptom severity (as measured by a subscale of the OQ.45) at baseline. This is consistent with the argument that psychopathological symptoms have no unidirectional association with interpersonal problems, but rather that there is a mutual influence between them, with no specific problems uniquely associated with particular disorders (see Przeworski et al., 2011). This may explain the heterogeneity observed in the interpersonal problems of emotional disorders, and justify the importance of identifying interpersonal subtypes. On one hand, both anxiety and mood symptoms may have interpersonal effects on the patients, but these effects can vary in their nature based on the interaction with other relevant patient characteristics (personality traits, attachment, etc.). On the other hand, pre-existing distinctive interpersonal problems (being extremely hostile or too dependent) may increase the likelihood of developing emotional symptoms, presenting a vulnerability (Horowitz, 2004) that

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might interactive with other psychological processes (mood regulation, copying strategies, etc.), and producing different psychopathological configurations.

Regarding our *second hypothesis*, given that existence of two distinct profiles, we investigated whether these predict the importance of alliance negotiation to early treatment outcome. Previous studies suggest that patient characteristics are a main contributor to psychotherapy processes and outcome, especially important in the initial phases of therapy (Paivio & Bahr, 1998), when the core technical interventions of *bona fide* treatments may not yet been delivered (Ilardi & Craighead, 1994). Consistent with this literature, the results of this study are the first to investigate and demonstrate an interaction between interpersonal profiles and alliance negotiation effects on early treatment outcome. The findings suggest that patients belonging to the Overly Nurturant profile show a stronger association between alliance negotiation and early treatment outcome. One potential explanation is that allowing patients who are Overly Nurturant (i.e. extremely dependent) to express and integrate negative aspects of the therapist and of the therapy may enhance greater early responses to treatment.

These results may be of particular use to clinical practice, given that patients displaying overly nurturant problems are usually considered to be less challenging and more collaborative in treatment (Gómez Penedo et al., 2018). Such patients are unlikely to complain about the therapist or the treatment, but this apparent collaboration could mask complains and disagreement with the therapist that the patients might not bring to the surface given their particular interpersonal problems (Hatcher & Barends, 1996). Therefore, patients with these characteristics are expected to react to disagreements or negative feelings they experienced without explicitly displaying them, except by subtly limiting collaboration with the therapist (e.g., withdrawal ruptures in the alliance; Safran & Muran, 2006) or suddenly dropping out of

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therapy. The results suggest that, in the case of emotional disorders, interpersonal problem profiles may represent baseline patient markers that should be considered for technical adaptations (Gómez Penedo et al., 2017, 2018), which could lead to greater early response to therapy. If the therapist can build a therapeutic context in which patients with overly nurturant interpersonal problems are able to feel comfortable expressing their negative feelings about the therapist or the process, patients may show greater early improvement in therapy. Such a corrective experience in which patients can express their negative opinions could facilitate an initial relief of their interpersonal distress, which in turn may help alleviate their symptoms and difficulties early in treatment (Constantino & Westra, 2012). Furthermore, such therapeutic relational in-session experiences may produce a *remoralization* effect in the patient, increasing their hope of healing in the therapeutic process (Frank & Frank, 1961). Identification of the interaction of the patient's interpersonal contribution to therapy with process features may be fundamental to improving psychotherapy outcome by systematizing responsive therapeutic strategies based on patients' relevant characteristics (Constantino et al., 2013).

These hypotheses, derived from the results of the study, could be empirically tested in future research. For example, it is possible to analyze in-session patterns of ruptures in the alliance and of therapist resolution strategies by observational methods, such as the Rupture Resolution Rating System (Eubanks, Muran, & Safran, 2015). This method allows investigating whether in working with patients who have overly nurturant problems, the therapist's in-session interpersonal responses to ruptures may predict corrective relational experiences (i.e., changes in the patient's interpersonal behaviors with the therapist), which may then predict better early and final outcome of the therapy.

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Finally, this study was conducted in Argentina, whereas previous studies on interpersonal problem profiles and alliance-outcome association have been conducted mostly in North America. Therefore, cultural difference must be taken into account when interpreting these results, especially considering that the interpersonal factor is one of the main differences between North American culture (where the interpersonal problems construct was developed) and Latin America. Cross-cultural studies have shown that Latin American countries are more collectivist than North American ones (Falicov, 2001). This means that they tend to be more connected to extended social groups, with a larger interpersonal network related to their identity (Spector et al., 2004), and have more permeable boundaries in their relationships, which are more interdependent than independent (Falicov, 2001). It is possible that this collectivistic nature contributed to the importance of the communal interpersonal dimension in this particular sample.

These cultural differences may strongly influence not only how psychopathological conditions are presented, but also how clinical practice is delivered and experienced by the patient. An exploratory cross-cultural study that compared patients' perception of therapy in the US and Argentina showed differences at several levels, such as reasons for consultation, preferences regarding therapist theoretical background, setting flexibility, and categories of changes identified (Jock et al., 2012). Furthermore, in more collectivist countries, patients may be more reticent to express dissatisfaction with the therapists or their behavior, because these represent authority figures (Iwakabe et al., 2013). This may explain why for Argentinian patients who presented with more problems of this nature, negotiation of the alliance, emphasizing the expression of negative feelings and thoughts, may be particularly important from a therapeutic perspective. Note further that studies conducted in Argentina demonstrated the importance of the

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alliance for achieving changes in patients (e.g. Roussos, Gómez Penedo, & Muiños, 2016), consistent with empirical research worldwide (Flückiger, Del Re, Wampold, & Horvath, 2018).

The study has several limitations that should be addressed in future research. First, the sample size was relatively small, and the patients' interpersonal problems were assessed only based on self-reported measures. Although the instrument used in this study is the one most widely used to measure the construct of interpersonal problems, results may varied if other informants, such as significant others, reported on the patients' relational difficulties. Future research could also benefit from assessing and triangulating different sources for identifying the patients' interpersonal problems at the individual level, and interpersonal profiles at the level of population of patients with emotional disorders. Second, interpersonal problems were measured after the first sessions of treatment instead of at baseline. Although the results at these two time points may vary, because the interpersonal problems construct is a stable one, it is unlikely to have meaningful changes in them after one session of therapy. Thus, IIP scores after the first session may be an adequate proxy of patients' baseline interpersonal problems. Third, as it is generally the case in most clinical settings, patients' diagnoses were not based on structured formal instruments, but relied on the therapist's clinical judgement, based on DSM criteria. Because this may limit the reliability of the diagnoses, future research should replicate these findings using a structural process for making emotional disorder diagnoses. Furthermore, although there is nothing to suggest that comorbid personality disorders in this study differed from the ones presented in the literature, we have no systematic assessment of personality disorders in the sample to ensure that this is so. This is another limitation, because patients who display personality issues are the ones with the greatest interpersonal problems and with the most difficulties developing successful alliance negotiation. Future studies would need to replicate

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these findings assessing personality disorders systematically, and checking whether this variable further moderates the effects reported in this study. Fourth, the treatments studied were naturalistic therapies, but were delivered at a private treatment center using the a SFBT approach, limiting the extent to which the results may be generalized to others forms of therapy or contexts. Furthermore, as sessions were not video-recorded, it was not possible to measure adherence, and to study or control for its effect. Future research would need to investigate whether these interpersonal clusters and their effect on early process can be replicated in other types of treatments or in more structured therapeutic settings. Finally, the study of the contribution of patients' interpersonal profiles was limited to the early stages of therapy. Although the importance of early processes and changes in the early sessions of therapy have been widely reported and empirically supported (e.g., Lutz et al., 2014; Rubel et al., 2015), future research needs to establish whether the beneficial effects reported for early changes are maintained through the termination and follow-up periods of treatment.

Notwithstanding these limitations, the present study identifies two distinct interpersonal profiles not related to mental health diagnoses in a sample of transdiagnostic individuals, suggesting the ability of such profiles to serve as transdiagnostic markers. The profiles were found to predict the importance of alliance negotiation for early treatment outcome. Future studies should use randomized controlled trials that manipulate alliance negotiation (e.g., by means of therapist training in enhancing alliance negotiation; Safran et al., 2011) to investigate causality and underlying mechanisms.

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Table 1.

Total sample and cluster structural summary parameters and circular statistics

	Total sample (<i>n</i> = 96)	Cold cluster (<i>n</i> = 54)	Overly Nurturant cluster (<i>n</i> = 42)
Structural summary parameters			
<i>Angle</i>	11.98°	165.67°	357.38°
<i>Elevation</i>	.98	1.08	.84
<i>Amplitude</i>	.19	.43	.96
<i>R²</i>	.82	.84	.90
Circular statistics			
<i>Circular mean</i>	5.25°	174.68°	358.38°
<i>Circular variance</i>	82.18°	63.37°	27.87°
<i>95% circular CIs</i>	[348.81°, 21.69°]	[157.78°, 191.58°]	[349.95°, 6.82°]

Note. CIs = Confidence intervals.

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Table 2.

Summary of the unconditional, main effects, and interactive effects models

Fixed Model Effects	OQ.45 score after session four		OQ.45 rate of change		Alliance negotiation within-patient effect on OQ.45 scores	
	γ	SE	γ	SE	γ	SE
<i>Unconditional Model</i>						
Intercept	1.53***	0.06	-0.05***	0.01	-	-
<i>Main Effects Model</i>						
Intercept	1.62***	0.08	-0.05**	0.02	-	-
Cluster	-0.21	0.12	-0.02	0.03	-	-
<i>Interactional Model with CNF</i>						
Intercept	1.63***	0.08	-0.04*	0.02	0.06*	0.03
Cluster	-0.18	0.12	-0.02	0.03	0.07†	0.04
CNF	-0.08	0.11	0.01	0.02	-0.04	0.03
Cluster X CNF	-0.11	0.18	-0.08*	0.04	0.10†	0.06
<i>Interactional Model with FNS</i>						
Intercept	1.62***	0.08	-0.05**	0.02	-0.07*	0.04
Cluster	-0.22†	0.12	-0.02	0.03	0.04	0.05
FNS	-0.28*	0.13	0.01	0.03	-0.12	0.07
Cluster X FNS	0.36	0.26	0.01	0.06	0.13	0.13

Note. Cluster centering: Cold= 0, Overly Nurturant = 1,*** $p < .001$, ** $p < .01$, * $p < .05$, † $p < .10$

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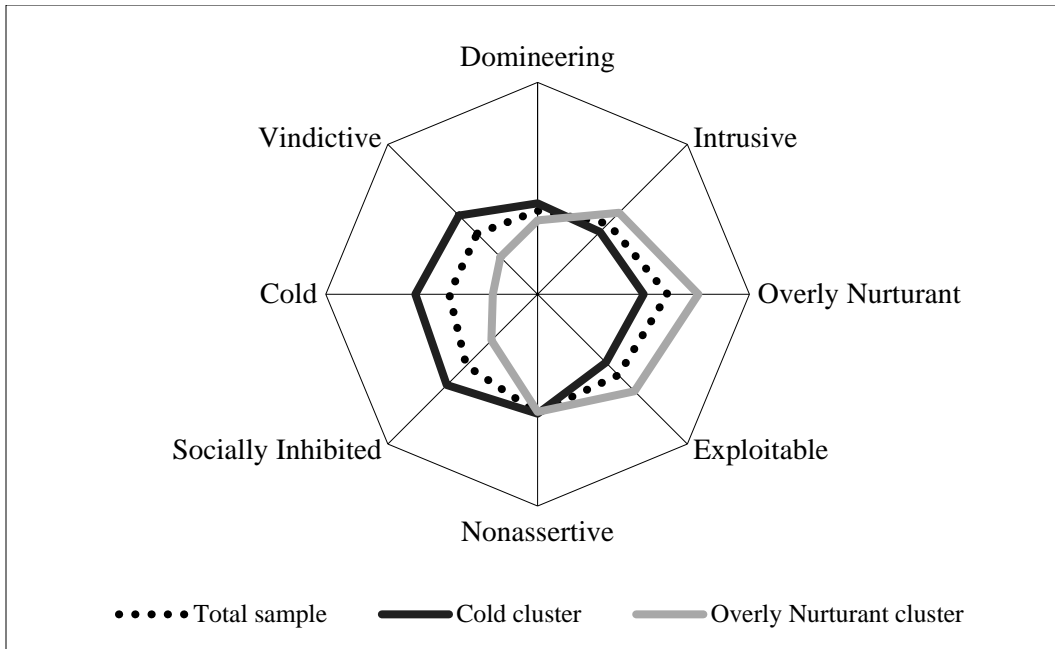


Figure 1. Distribution of interpersonal problems within the circumplex, in the total sample, Cold cluster, and Overly Nurturant cluster.

INTERPERSONAL PROFILES IN EMOTIONAL DISORDERS

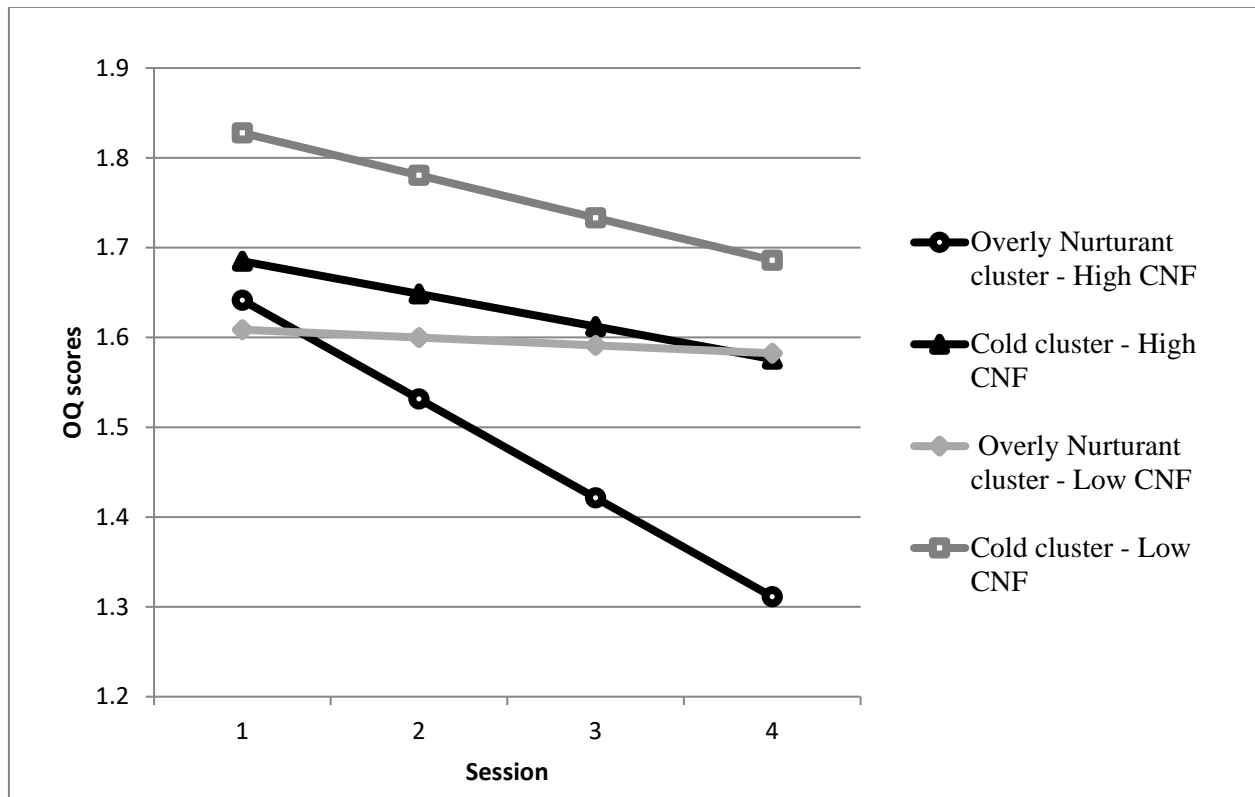


Figure 2. Evolution of the OQ.45 score during the first four sessions in high vs. low level of comfort with negative feelings (CNF; alliance negotiation), comparing the Cold cluster and the Overly Nurturant cluster. High and low levels of CNF were defined as ± 1 SD (0.71) from CNF sample mean (5.45).