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ORIGINAL PAPER

Schematic Functioning, Interpersonal Dysfunctional Cycles and Cognitive Fusion in the Complementary Paradigmatic Perspective: Analysis of a Clinical Sample

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Abstract
Previous research has shown that transdiagnostic variables, such as dysfunctional schemata, interpersonal cycles, and cognitive fusion, are strongly related to psychological disorders and mental health. In this sense, this study sought to clarify, identify, and differentiate to what extent *early maladaptive schemas, interpersonal dysfunctional cycles*, and *cognitive fusion* relate to each other and to determine what are their differential contributions to the *regulation of psychological needs, well-being, psychological distress*, and *symptomatology*. For this purpose, we assessed a clinical group (n = 58) and found strong associations between schemas, interpersonal cycles, and cognitive fusion within a composite model. These transdiagnostic variables predicted the regulation of psychological needs. Overall, where there is a high presence of schemas, dysfunctional cycles, and psychological rigidity, the ability to the regulation of psychological needs decreases, which in turn decreases well-being levels and increases psychological distress and symptomatology. These results may be important to case conceptualization and clinical decision making focused on the patient's characteristics, styles of communication and needs.

Keywords Early maladaptive schemas · Dysfunctional interpersonal cycles · Cognitive fusion · Psychological needs · Mental health · Symptomatology

Introduction

Schematic Functioning and Early Maladaptive Schemas

Norcross and Lambert (2011) point out that 40% of the variance in psychotherapy are not currently identified or explained, while the other 60% are attributed to factors, such as patient variables (30%), therapist variables (7%), therapeutic relationships (12%), intervention methods (8%), and other factors (3%). In this sense, the quest for variables with integrative potential and explanatory character in the 30% of patient variables appears as a clinical need underlying case conceptualization and clinical decision making responsive to patient characteristics (Vasco 2005, 2018).

One of the most cited and clinically relevant variables with significant integrative potential in scientific literature is the notion of schema or schematic functioning (Rijo 2009; Vasco 2001, 2005). Schematic functioning refers to the functional character of the concept of *schema*, or mental structure, as one of the theoretical constructs most widely used in psychology to describe human behavior (Rijo 2009). In the diverse conceptualization of schema, we find the following definitions: *cognitive schemas* (Beck et al. 2004), *emotional schemas* (Greenberg and Pavio 1997; Leahy 2015), *dysfunctional interpersonal schemas and cycles* (Dimaggio et al. 2015; Safran and Murran 2000), and *early maladaptive schemas* (Young et al. 2003). However, the concept of schema may have other definitions, such as *irrational beliefs* (Ellis and Bernard 1985), *self-wounds* (Wolf 2005), and *social scripts* (Fiske and Taylor 1991).

All these definitions share common factors that lead to the idea of mental structure that is responsible for assigning meaning to events that drive human behavior. These mental structures are stable and are experience based. Following

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these ideas, Young, Klosko, and Weishaar (2003) developed the concept of *early maladaptive schemas* (schemas) that emphasize early dysfunctional schemata development since childhood. They gave them a central role in psychological disorder theory. Schema therapy is an integrative approach developed by Jeffrey Young that expands on traditional cognitive behavior therapy (CBT) by blending elements from CBT, attachment theory, and gestalt.

Young, Klosko, and Weishaar (2003), define *schemas* as pervasive mental structures containing cognitions (e.g., verbalizations and images), memories, emotions, and bodily sensations related to oneself and others that are formed in infancy or adolescence and developed throughout life. Schemas are broad, rigid, inflexible, and impermeable to experience. When schemas are activated, high levels of dysfunctional affect are triggered, causing emotional pain, psychological distress, interpersonal disturbances, and/or maladaptive coping behaviors (Young et al. 2003). The authors describe five categories (e.g., disconnection and rejection domain, impaired limits) and 18 schemas (e.g., abandonment/instability, mistrust/abuse, subjugation, high standards). Schemas may be viewed as transdiagnostic variables due to being the underlying core to different emotional and personality disorders. See *Schema Therapy* (Young et al. 2003) for a description of the complete theory.

Fonseca (2012) found negative correlations between schemas and the regulation of psychological needs. These correlations are between defectiveness/shame and social isolation/alienation within the psychological needs of control, tranquility, and self-esteem. Ünal (2012) explained that schemas pertaining to the disconnection and rejection domain were associated with higher levels of psychological symptoms and lower levels of life satisfaction. Moreover, schemas are associated with childhood trauma and negative parenting styles (Bach et al. 2017), psychiatric symptomatology (Taylor et al. 2016), aggressive mood styles (Dobois et al. 2013), depression (Renner et al. 2012), personality disorders (Lobbestael et al. 2008), and interpersonal problems (Thimm 2013). Bernstein (2005) argues that schemas are interpersonal in nature, but this research is sparse. There is a theoretical and empirical gap between the study of schemas and interpersonal issues, such as dysfunctional cycles (Thimm 2013). Our study aims to fill this gap.

Interpersonal Dysfunctional Cycles

The concept of *interpersonal dysfunctional cycles* (interpersonal cycles) derives from interpersonal schema theory in which interpersonal cycles are defined as intersubjective processes that take place in the social scene between individuals, resulting from interpersonal schemas that are rigid, inflexible, generalized, and impermeable to experience (Dimaggio et al. 2015; Safran and Murran 2000; Scarvalone et al. 2005).

Interpersonal cycles are positively associated with depressive disorders, low self-esteem, relational disabilities, and histrionic, narcissistic and paranoid personality disorders (Dimaggio et al. 2017; Scarvalone et al. 2005). Thus, Dimaggio et al. (2007), describe specific interpersonal cycles for specific personality disorders, such as invalidation/alarm cycle in borderline personality disorder, superior/inferior cycle in narcissistic personality disorder and subservient/sado-masochistic cycle in dependent personality disorders. However, more research is needed to deepen and clarify these associations. Interpersonal cycles are also related to a history of sexual abuse (Körner et al. 2004). A great similarity between schemas and interpersonal cycles is the rigidity that characterizes them (Dimaggio et al. 2015; Young et al. 2003). By definition, the presence of these constructs is associated with psychological inflexibility (Dimaggio et al. 2015; Young et al. 2003). However, the relationships between schemas, interpersonal cycles, and cognitive fusion have never been studied despite their theoretical association.

Cognitive Fusion

The cognitive fusion construct derives from the model of psychological inflexibility and experiential avoidance of acceptance and commitment therapy (ACT; Hayes et al. 2011), which is a heuristic form of defining mental rigidity. Incidentally, rigidity/inflexibility is one of the psychopathology diagnostic criteria of the *Diagnostic and Statistical Manual of Mental Disorders-5* (APA 2013). Fischer, Smout, and Delfabbro (2016) found that psychological flexibility fully mediated the effect of schemas on psychopathology, but schemas did not mediate the effect of psychological flexibility on psychopathology. In this sense, more research is needed to understand the roles of these constructs. Moreover, cognitive fusion has been associated with shame and depression (Dinis et al. 2015), social anxiety and depressive symptomatology (Gillanders et al. 2014), and evaluation of physical image from eating disorders (Ferreira et al. 2014). Cognitive fusion may also be seen as a deficit in a metacognitive process, such as *differentiation*, which is associated with personality disorders (Dimaggio et al. 2017).

As stated before, schemas, interpersonal cycles and cognitive fusion are associated with psychological needs, psychological distress, and symptomatology (Fischer et al. 2016; Fonseca 2012; Thimm 2013). Although they have been studied separately, these constructs have never been integrated into a coherent theoretical model capable of articulating them adequately and heuristically. In this sense, we used the Paradigmatic Complementarity Metamodel (Vasco

2001, 2005; Vasco et al. 2018) to articulate, organize, and systematize these different variables into a coherent and integrated framework.

Paradigmatic Complementarity Metamodel

The Paradigmatic Complementarity Metamodel is an integrative model that seeks to establish and define a broad, comprehensive, and differentiating view of clinical phenomena in psychotherapy affirming itself as a privileged tool for this effect (Vasco 2005; Vasco et al. 2018). Psychological needs are a core construct in the adaptation theory of this integrative metamodel. Vasco et al. (2018) define psychological needs as states of disequilibrium caused by a lack or excess of certain psychological nutrients that is signaled emotionally and, when working adequatedly, promote inner and outter action leading to the establishment of a new equilibrium. Thus, adaptation, well-being, psychological distress, and symptomatology depend on the calibration capabilities of the various systems (cognitive/interpretative, emotional/experiential, somatic/physiological and motivational/behavioral) interconnected with the regulation of psychological needs (Conceição and Vasco 2005; Vasco et al. 2018).

Within this integrative psychotherapy paradigm research, we relied on the transdiagnostic and metatheoretical clinical variables described so far. We aim to study the relationships between *early maladaptive schemas, dysfunctional interpersonal cycles*, and *cognitive fusion* in light of the *paradigmatic complementarity metamodel* to understand the relationship, differential weights, and their contributions to the *regulation of psychological needs, well-being, psychological distress*, and *symptomatology*. Our research intends to produce and make explicit knowledge of the differential weights of variables potentially responsible for the development and maintenance of psychological disorders. We aim to identify and expand patient variables (30%) within clinical relevance thereby contributing to the decrease of 40% of the unexplained variances (Norcross and Lambert 2011).

Research Issues and Hypothesis

According to this integrative metatheoretical conceptualization, we hypothesize that schemas are harmful structural contents of the self (Young et al. 2003) and interpersonal cycles are the relational intersubjective processes that stem from pathogenic schemas (Dimaggio et al. 2015; Safran and Murran 2000). In this sense, cognitive fusion is the rigid and inflexible form of the relationship between the self and the person's mental processes (Hayes et al. 2011). Therefore, it is important to understand the relative contributions of these variables in the regulation of psychological needs, well-being, psychological distress, and symptomatology.

Within the present research, the following issues arise: Hypothesis 1: Schemas, interpersonal cycles, and cognitive fusion are strongly associated with each other and between the regulation of psychological needs, well-being, psychological distress, and symptomatology. Hypothesis 2: Schemas and cognitive fusion predict the regulation of psychological needs. Hypothesis 3: The regulation of psychological needs predicts well-being, psychological distress, and symptomatology. Hypothesis 4: Through interaction, schemas, interpersonal cycles, and cognitive fusion predict the regulation of psychological needs. Hypothesis 5: There are significant differences in the interaction between schemas, interpersonal cycles, and cognitive fusion and the regulation of psychological needs, well-being, psychological distress, and symptomatology.

Method

Inclusion Criteria and Participants

Clinical sampling consisted of 58 participants: 13 males (22.4%) and 45 females (77.6%). The age of the men varied between 20 and 67 years (M = 27.77, SD = 7.27) and the age of the women ranged between 18 and 77 years (M = 29.07, SD = 11.64; see Table 1). The inclusion criteria included being over 18 years old, speaking Portuguese as a native language, and being in treatment for psychological symptoms and or a mental disorder.

Materials

Young Schema Questionnaire (YSQ-S3)

Schemas were evaluated through the adapted Portuguese version (translated and adapted by Pinto Gouveia et al. 2005, revised) of the YSQ-S3 (Young 2005, cited by; Rijo 2009). The YSQ-S3 is a self-reporting questionnaire consisting of 90 items that seek to assess to what extent the individual owns schemas. The response format is a 6-point Likert scale (1–6 values). Cronbach's alpha of the present study was determined to be excellent ($\alpha = 0.967$).

Interpersonal Relational Patterns Questionnaire (IRPQ)

The interpersonal dysfunctional cycles were evaluated using the Portuguese version (Martins 2016) of the IRPQ (Kurth and Pokorny 1999). The IRPQ consists of 72 items quoted on a 5-point Likert scale (1 = strongly agree to 5 = strongly

Table 1 Characterization of the clinical sample

N	58
Age	
M	28.78
SD	13.278
Minimum	18
Maximum	77
Gender	
Male	13 (22.4%)
Female	45 (77.6%)
Scholarship	
4 years	5 (8.6%)
6 years	3 (5.2%)
9 years	8 (13.8%)
12 years	23 (39.7%)
Bachelor's	15 (25.9%)
Master's	4 (6.9%)
Psychotherapy	
Yes	50 (86,2%)
No	8 (13.8%)
Diagnostic	
Major depressive disorder	17 (29.3%)
Distimic	12 (20.7%)
Bipolar disorder	8 (13.8%)
Depressive episode	6 (10.3%)
Anxiety disorder	5 (8.6%)
Borderline personality disorder	4 (6.9%)
Obsessive–compulsive disorder	3 (5.2%)
Delirium disorder	3 (5.2%)
Comorbidity with personality disorder	
Yes	10 (17.2%)
No	48 (82.8%)
Psychotherapy	
Yes	50 (86.2%)
No	8 (13.8%)
The phase of the therapeutic process*	
Beginning	11 (19%)
Medium	18 (31%)
End	20 (34.5%)

*9 missing values (15.5%)

disagree) divided by three dimensions. Cronbach's alpha of the present study was acceptable (α = 0.826).

Cognitive Fusion Questionnaire (CFQ)

The CFQ (Gillanders et al. 2014; Portuguese translation and adaptation by; Gouveia et al. 2013) is composed of seven items that evaluate cognitive fusion. Each item is rated on a 7-point Likert scale (1 = never true to 7 = always true). Higher scores are suggestive of a higher cognitive fusion presence. Cronbach's alpha in the present study was acceptable (α = 0.892).

Needs Satisfaction Regulation Scale (NSRS-43)

The regulation of psychological needs was evaluated using the NSRS-43 (Conde et al. 2012), a self-report instrument developed from a literature review of the psychological needs conceptualized in seven dialectical polarities (Vasco et al. 2018). This instrument has 14 subscales referring to each pole's needs. The response format is an 8-point Likert scale. Internal consistency was excellent (α = 0.997).

Mental Health Inventory (MHI)

Mental health was assessed using the Portuguese version (Ribeiro 2001) of the MHI (Ware et al. 1979). The MHI is a measure of general psychological well-being and distress. This instrument is a self-report questionnaire with 38 items on a Likert scale of five or six values. Total scale Cronbach's alpha was excellent at α = 0.939 (α = 0.911 for psychological distress and α = 0.938 for well-being).

Brief Symptom Inventory (BSI)

To evaluate the symptomatology, the BSI (Derogatis 1993; Portuguese version by; Canavarro 1999) was used. The BSI is a self-report inventory composed of 53 items on a 5-point Likert scale response (0 = never to 4 = many times) to evaluate psychopathological symptoms. Internal consistency was considered excellent (α = 0.972).

Procedures

Participants were tested individually. The sample was collected at the Centro Hospitalar Lisboa Ocidental and at the Clínica Psiquiátrica de São José in Portugal. All participants were asked to give informed consent, and there was no compensation for participating in the study. This research was approved by the ethics committee of the Faculty of Psychology of the University of Lisbon.

Data Analysis

Descriptive statistics were used to sample characterization. To test associations between variables, we used the Pearson product–moment correlation coefficient (Hypothesis 1). To explore the predictive value of structural variables (schemas, interpersonal cycles, cognitive fusion) in psychological needs, we used simple linear regressions (Hypotheses 2 and 3). We used stepwise multiple linear regression to test hierarchical interactions between

schemas, interpersonal cycles, and cognitive fusion and its predictive value on the regulation of psychological needs (Hypothesis 4). Lastly, we used logistic regression analysis to test the odds of a composite model of schemas, interpersonal cycles, and cognitive fusion in psychological needs, well-being, distress, and symptoms (Hypothesis 5). Statistical analyses were performed using IBM SPSS Statistics version 23.

Results

Table 2 presents means, standard deviations, and amplitude (min–max) of schemas, interpersonal cycles, cognitive fusion, psychological needs, well-being, psychological distress, and symptoms.

Table 2 Approximate means, standard deviations, and amplitudes to schemas (YSQ-S3), interpersonal cycles (IRPQ), cognitive fusion (CFQ), psychological needs (NSRS-43), well-being, psychological distress, and symptoms (BSI) (n = 58)

Variables	Clinical sample ($N = 58$)		
	M	SD	Min–Max
Early maladaptive schemas	2.74	.89	0–4.6
Cognitive fusion	4.87	1.33	1.9–6.7
Internalization/self-punishment*	3.48	.87	1.4–5
Self-care/integrity*	2.33	1.05	1.0–5
Psychological needs	5.28	.28	3–8
Psychological well-being	3.00	.90	1.1–6.0
Psychological distress	3.57	.80	2.1–5.7
Symptoms	1.43	.85	0–3.7

M mean, *SD* standard deviation

*Domains from the Interpersonal Relational Patterns Questionnaire (IRPQ)

Correlations

Through Pearson's correlation, we identified the degree of *association* between schemas, interpersonal cycles, cognitive fusion, psychological needs, well-being, psychological distress, and symptoms (Hypothesis 1). We found a strong positive correlation between schemas and cognitive fusion ($r = .500$, $p < .01$). We also found a strong positive correlation between schemas and *internalization/self-punishment* ($r = .576$, $p < .01$) and a medium negative correlation between schemas and *self-care/integrity* ($r = -.499$, $p < .01$), both from the Interpersonal Relational Patterns Questionnaire.

After these steps, we tested the degree of *association* within overall scores of schemas and cognitive fusion with the overall scores of psychological needs, well-being, psychological distress, and symptoms. We found a strong negative correlation ($r = -.701$, $p < .01$) between schemas and psychological needs (see Table 3).

Simple Linear Regressions

Through simple linear regression analysis, we analyzed to what extent schemas and cognitive fusion predict the variance of psychological needs. Next, we sought to understand the degree of variance of the prediction of psychological needs in well-being, psychological distress, and symptoms (Hypotheses 2 and 3).

First, we attempted to understand if the total score of schemas predicted psychological needs. We found that the overall score of schemas predicted 55.8% of the variance of psychological needs ($R^2 = .558$, $F = 70.819$, $p < .000$). Next, we attempted to understand if cognitive fusion predicted psychological needs. We found that it did not significantly predict psychological needs ($R^2 = .083$, $F = 5.093$, $p < .000$). Finally, we sought to understand whether the psychological needs predicted well-being, psychological distress, and symptoms. We found that the psychological needs predicted 45% of well-being ($R^2 = .452$, $F = 46.162$, $p = .000$), 22% of

Table 3 Correlations between global scores of the schemas (YSQ-S3), cognitive fusion (CFQ), psychological needs (NSRS-43), well-being, psychological distress, and symptoms (BSI) (n = 58)

Variables	Clinical sample ($N = 58$)		
	Psychological needs	Cognitive fusion	Early maladaptive schemas
Psychological needs	–	−.289**	−.701**
Psychological well-being	.672**	−.367**	−.541**
Psychological distress	−.483**	.546**	.489**
Symptoms	−.501**	.572**	.586 **

**p value < .01

psychological distress ($R^2 = .224$, $F = 17.070$, $p = .000$), and 23% of symptoms ($R^2 = .231$, $F = 18.727$, $p < .000$).

Stepwise Multiple Linear Regression

We used stepwise multiple linear regression to understand if schemas, interpersonal cycles, and cognitive fusion *in interaction* add explanatory additive value (differential weight) to predict the variance of psychological needs and symptoms (Hypothesis 4). We found an integrative model with four predictors that explain 71% of the variance of psychological needs, with *disconnection and rejection* domain of schemas as the variable with the most weight explanatory value for psychological needs ($R^2 = 70.6$, $F = 35.171$, $p = .000$; see Table 4).

For symptomatology, we found an integrative model with four predictors: *internalization/self-punishment* (29.2%), *response to the other-reactive formation* (36.7%), *overvigilance and inhibition* (47.1%) and *cogntive fusion* (52.2%, $R^2 = .522$, $F = 14.455$, $p < .000$).

Logistic Regression

Logistic regression was used to explore the differential effect of schemas, interpersonal cycles, and cognitive fusion along with psychological needs, well-being, psychological distress, and symptomatology (Hypothesis 5). We found that the variables that best explain the differences in the sample *(n* = 58) are *cognitive fusion* ($\hat{\beta} = -.233$, $p < .05$), *psychological needs* ($\hat{\beta} = -.057$, $p < .05$), and the *response to the object-reactive formation* ($\hat{\beta} = .034$, $p < .05$) when interacting.

Discussion

Research objectives have been achieved. We have identified and differentiated relationships of association, prediction, and interaction between *early maladaptive schemas, interpersonal dysfunctional cycles*, and *cognitive fusion* with the *regulation of psychological needs, well-being, psychological distress*, and *symptoms* in a clinical sample.

Table 4 Summary of the best model of multiple linear regression analysis to stepwise regression of a dependent variable of psychological needs (NSRS-43) (n = 58)

Predictors	R^2	β	t	*Sig.*
Disconnection and rejection	58.8	−.482	−5.110	.000
Self-care/integrity*	66.7	.260	2.829	.007
Internalization/self-punishment*	68.3	−.235	−2.437	.018
Response to the object-*reactive formation**	70.6	.163	2.269	.027

*Domains of the Interpersonal Relational Patterns Questionnaire (IRPQ)

First, the analysis showed that schemas (*disconnection and rejection, overvigilance and inhibition domains*), interpersonal cycles (*internalization/self-punishment*, *self-care/integrity* and *response to the object-reactive formation*) and cognitive fusion were strongly associated with psychological needs. According to our framework, we view psychological needs as the cornerstone of well-being and mental health, beyond diagnosis and cut across different theories (Vasco et al. 2018). These results may be the first ones to show a core cluster of variables highly associated with the regulation of psychological needs. In this sense, we can state that these variables tend to be structural when psychological disorders are conceptualized within a transtheoretical and/or transdiagnostic view (Vasco 2001, 2005). This is in line with previous research (Bach et al. 2017; Fischer et al. 2016; Sol and Vasco 2017; Thimm 2013), although our results emphasize a coherent articulation among the variables.

Second, the relationships of *association* and *prediction* among *schemas and psychological needs* may suggest that in individuals with severe psychological disorders and psychiatric diagnoses, there is a presence of *dysfunctional schematic content* (schemas) that could make difficult the *regulation of psychological needs* (Conceição and Vasco 2005; Fonseca 2012; Vasco et al. 2018; Young et al. 2003). Schemas may be the core variables associated with psychological needs, because schemas are the structures that contain representations from past maladaptive experiences related to the satisfaction of psychological needs (Bach et al. 2017; Conceição and Vasco, 2005; Young et al. 2003).

Third, in regards to *interpersonal dysfunctional cycles*, variables referring to others' behaviors and their defenses (*response to the object–reactive formation)* and the attributional process of the positive and negative meaning of relational experiences *(internalization/self-punishment, self-care/integrity)* emerged as important differential features. These results suggest that these psychological processes associated with human relationship patterns are important in *well-being, psychological distress*, and *symptomatology* (Körner et al. 2004; Scarvolone et al. 2005; Thimm 2013). Nevertheless, more research is needed to uncover how invalidation/alarm, superior/inferior or subservient/sado-masochistic cycles relates to schemas and psychological needs.

Fourth, *psychological needs* are associated and predict *well-being, psychological distress*, and *symptoms*, which is in line with previous studies (Conde et al. 2012; Sol and Vasco 2017). In this sense, our study stresses the importance of the conceptualization of psychological needs as a possible target variable to boost adaptive states.

Fifth, integrative models proved to be more robust against separate variables, which are particularly relevant in predicting *symptoms* and *needs*. In the explanation of the *symptomatology*, this may underlie a number of causalities among structural variables (Vasco et al. 2018). For example, an individual with a schema of *abandonment/instability*, associated with a *form* of rigid thinking (*cognitive fusion/impaired differentiation*), may tend to engage in *interpersonal dysfunctional cycles* that represent the other as threatening (*response to the object-reactive formation*). Within this *schematic functioning*, the individual may develop difficulties on the *regulation of psychological needs* and experience lower levels of *well-being* and higher levels of *psychological distress* and *symptomatology* (Conceição and Vasco 2005; Dimaggio et al. 2015; Young et al. 2003).

Sixth, these results suggest that the integration of *constructs* from integrative psychotherapy (schema therapy—*early maladaptive schemas)*, with relational dynamic theory (interpersonal therapy—*interpersonal disfunctional cycles*) and a third generation of cognitive-behavioral approaches (acceptance and commitment therapy—*cognitive fusion*), may be relevant in terms of increasing the explanatory value of these variables regarding the *regulation of psychological needs, well-being, psychological distress*, and *symptoms*. In this sense, the integrative approach using different variables out of different theoretical orientations can be an asset in the conceptualization of precipitants and maintenance factors of psychological disorders. Thus, this is in line with the perspective of the *paradigmatic complementarity metamodel* (Vasco et al. 2018; Vasco 2001, 2018).

Seventh, in our sample, there were about 60% of the psychiatric diagnoses concerned with depressive disorders. This fact may have had an effect on the emerging systematic relations of *disconnection and rejection* domain, *interpersonal cycles* with the process of *internalization/punishment* and *response to the object-reactive formation*, and *cognitive fusion*. This makes it possible to verify that this set of variables constitutes a prototypical structural frame associated with depressive disorders, which is similar to the cognitive triad of depression where individuals have a negative view of the self, the other, and the future (Beck et al. 2004). Schemas of abandonment/instability, mistrust/abuse, emotional deprivation, defectiveness/shame and social isolation belongs to disconnection and rejection domain and may be view as the most dysfunctional ones (Young et al. 2003).

Eighth, regarding case conceptualization and clinical decision making, this research shows that the structural variables of personality (schemas, psychological inflexibility, interpersonal cycles, and psychological needs) may be important in explaining *symptomatology*. In this sense, we state that the use of these core variables may be useful as targets for psychological intervention in patients with high functioning (relatively adaptive regulation of psychological needs), with which a more regulatory intervention seems to be sufficient. However, we also emphasize that these core variables may also be most useful with patients for whom, in addition to regulation, a more transformational schematic work is required (Conceição and Vasco 2005; Dimaggio et al. 2015; Vasco et al. 2018; Young et al. 2003).

Finally, in terms of research relevance, variables of schemas, interpersonal cycles, cognitive fusion, and psychological needs, as well as variables of well-being, psychological distress, and symptoms, have been studied previously alone or with some degree of association (Fischer et al. 2016; Thimm 2013; Vasco et al. 2018). However, variable association, differentiation, and integration, to our knowledge, have not been done. But they are described in the scientific literature as clinically relevant.

Regarding the limitations of the present investigation, it is possible to make several considerations. First, the use of self-report measures circumscribe the responses to individuals' self-knowledge. An inherent condition for clinical populations is their heterogeneity in terms of disturbed variables, defense mechanisms, and symptomatology, and this may constrain participants' responses.

In future studies, it would be interesting to conduct a longitudinal study with the present variables in order to understand the sequential causalities in the emergence of their relations. It would also be interesting to deepen the level of explanation of the relationships between the variables under study, detailing the relationships between specific schemas, interpersonal cycles, symptomatology, and psychological needs.

Due to the quantity and complexity of the variables under study, it was not possible to investigate the core relationships among these constructs (e.g., correlations between schemas and specific needs, correlations between cognitive fusion and dimensions of symptomatology). However, in the future, we will explore the data we collected and analyze it in more depth.

Conclusion

In sum, it is expected that this work fits into the continuity of the integrated knowledge of complementary variables in promoting psychological disturbance relating to targets cleared of psychotherapeutic intervention. This work is aligned with and provides a transtheoretical and transdiagnostic integrative view of clinical psychology and psychotherapy. It is intended to identify the patient's core variables, contained in the 30% of the explained variance, with greater responsibility in the promotion of psychological disorders and, thus, contribute to the reduction of the 40% of the unexplained variance in psychotherapy outcome.

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Compliance with Ethical Standards

Conflict of interest The authors declare that they have no conflict of interest.

Ethical Approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. Our study was approved by Scientific Committee of Faculty of Psychology of University of Lisbon.

Informed Consent Informed consent was obtained from all individual participants included in the study.

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