

# Maladaptive Perfectionism and Interpersonal Problems: The Mediating Effect of Emotional Dysregulation in a Clinical Population

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## Abstract

Perfectionism and emotional dysregulation have both been indicated as risk factors for interpersonal problems. The present study examined the associations among perfectionism, emotion dysregulation and interpersonal problems in a clinical population. The sample was composed of 391 outpatients from a variety of private treatment centres, undergoing to receive cognitive behavioral therapy. Participants completed self-report questionnaires assessing perfectionistic tendencies, difficulties in emotion regulation, interpersonal problems, and symptoms of anxiety and depression. The purpose of this study was to examine emotion dysregulation as a potential mediator in the relationship among perfectionism and interpersonal problems. Results indicated that general emotion dysregulation statistically mediated the relationship between the Concern over Mistakes and excessive Doubting about Actions and interpersonal problems. In addition, the relationship between higher maladaptive perfectionism and greater interpersonal problems; the association between maladaptive perfectionism and dysregulated emotional strategies; the relation of perfectionism, interpersonal problems, and emotion dysregulation with the severity of symptoms of anxiety and depression were all confirmed. Implications for treatment and future research directions are discussed.

**Keywords:** Perfectionism; Interpersonal problems; Emotional dysregulation; Emotional disorders; Mediation

## Introduction

Perfectionism was initially proposed as an unidimensional disposition focusing on intrapersonal aspects and reflecting unremitting striving for unreasonably high standards and assessing one's worth based on accomplishment [1,2]. Nowadays the most commonly accepted definition of perfectionism implies the fact that perfectionism is a multidimensional personality variable involving the need to be or appear to be perfect [3], encompassing both personal and interpersonal aspects concept and entailing adaptive and maladaptive forms [4].

Moreover, perfectionism has been defined as the setting of excessively high standards of performance together with the tendency to make overly critical self-evaluations and concerns regarding others' evaluations [5]. According to Frost and colleagues' conceptualization [5], perfectionism is characterized by 6 dimensions, namely high Personal Standards (PS), excessive Concern over Mistakes (CM), excessive Doubting about Actions (DA), high Parental Expectations (PE), high Parental Criticism (PC), Organization (O). Successive results [6,7] evidence that CM and DA converge into the same factor (CMD) as well as PE and PC (PEPC).

The several instruments evaluating the dimension of perfectionism are combined to form two independent dimensions: Perfectionistic Strivings or positive or adaptive perfectionism, and Perfectionistic Concerns or negative or maladaptive perfectionism [4, 8-11]. In the Frost conceptualization, the dimensions of Maladaptive perfectionism were: the excessive Concern over Mistakes, the excessive Doubting about Actions, the high Parental Expectations, and high Parental Criticism, instead,

the adaptive dimensions comprise the high Personal Standard and the Organization [5]. While positive or adaptive perfectionists tend to have high personal standards and low concerns, unhealthy or maladaptive perfectionists is a composite of high standards and high concerns over mistakes, need for approval, rumination, and perceived parental pressure. It involves experiencing anxiety about doing things incorrectly, failing to meet standards, being judged by others, and worrying about performance [4,8,9,12]. Adaptive perfectionism has been found to be linked to psychological well-being, active coping styles, achievement, academic performance, perceived social support, satisfaction with life, and positive mood [13], whereas maladaptive perfectionism has been associated with higher psychological distress, negative characteristics and outcome as low self-esteem, negative affect, anxiety, depression, suicidal ideation [4,14,15] and social-relational problems [3,16-18]. In clinical samples, perfectionism has also been indicated as a risk factor of psychopathology that, if not treated, persists after remission of the symptoms, and predicts the recurrence of the disorders or maintenance [4]. Moreover, maladaptive perfectionists reported high levels of stress and poor emotional adjustment (i.e., higher levels of hopelessness and depression), which may be due to poor emotion regulation [4,19-23]. Many studies provided evidence for the relationship between maladaptive perfectionism and psychological dysfunctions support for a possible mediational role of emotional dysregulation [23].

In the relational domain, the problem is that perfectionists have core beliefs as "I'm not lovable unless I'm perfect," or "I'm either perfect or I'm worthless" and will struggle to reach perfection and will not be satisfied

with anything less. Perfectionism is an interpersonal and intersubjective phenomenon, involving the perfectionist's experience of other people's expectations and judgments [24].

Most authors agree that the origins of perfectionism are in the childhood environment and in the messages adult caregivers give to children. For example, parents whose self-esteem rests on the accomplishments of their children will be disappointed, embarrassed, fearful, or even angry when the child makes a mistake. [25-29]. In their work, Frost and colleagues [5] affirmed that the essence of perfectionism is not striving for excellence, but rather, feelings of conditional self-acceptance. When perfectionist grew up in families where love and approval were conditional to be perfect, and mistakes are risky to rejection or loss of love from parents, perfectionism has a negative connotation [5]. Studies demonstrate that harsh and perfectionistic parenting [27] and insecure attachment [30,31] tend to be associated with the interpersonal components of perfectionism. This approach to developing an identity and strive for acceptance is considered dysfunctional, as the perfectionistic strategies employed conspire to further create distance and alienation from others [31]. The interpersonal components of perfectionism are significantly related to extreme sensitivity to the opinions of others, highly sensitive to criticism and the need to belong and be accepted, as well as interpersonal difficulties. The interpersonal components of perfectionism represent a personality style aimed at achieving stability, a sense of self and interpersonal acceptance via maintaining a facade of perfection [32].

Requiring perfection for acceptance and feeling one cannot achieve perfection thus creates an ongoing subjective sense of disconnection from others. Overall, the interpersonal components of perfectionism are associated with a number of interpersonal difficulties including hostility, intimacy problems, loneliness, poor social skills, more frequent negative interactions, peer victimization, and perceived lack of social support, in addition to the clinical outcomes mentioned above, which interfere with the formation and maintenance of interpersonal relationships [3,32-34].

Only a few studies have investigated the role of perfectionism in predicting interpersonal problems [16,17,35]. Results of these studies evidenced that higher level of negative perfectionism is associated with interpersonal problems or difficulties encountered when interacting with others both for men and women [16]. Maladaptive perfectionists attitudes were associated with profiles reflecting hostile-dominant and friendly-submissive interpersonal problems, whereas the adaptive perfectionists would exhibit low profile elevation indicative of interpersonal adjustment [17]. Moreover, excessive concern over one's errors and doubts about actions were predictive of interpersonal problems in patients with personality disorders [35].

Maladaptive perfectionism has been found to be correlated also with deficits in emotion regulation strategies [4,15,22,23].

Emotion regulation is a multidimensional construct that may be generally defined as a process that helps individuals modulate the experience and expression of emotions. Existing research shows that emotion regulation may be affected by both internal factors as well as external environment [36-38]. Caregivers have an important influence on regulating children's emotional states and emotion regulation develops in the context of the relationship between children and their caregivers [39-42]. Emotions regulations are central to social relationships. By having and expressing an emotion, we take a stance in the social world, express our concerns, and reveal our strategies, goals, and intentions to act [42].

Emotion regulation has been linked to mental health and well-being [36,43]. Difficulties in processing and regulating emotions, however, have been found to be associated with psychological dysfunction [36,44,45] such as eating disorders [46], substance and alcohol abuse [47,48], depression and anxiety [49-51], externalizing problems as ADHD,

Oppositional Defiant Disorder and Conduct Disorder [52,53], and borderline personality disorders [54,55].

Various studies have demonstrated the effect of perfectionism playing a significant role in predicting the severity, the creation, and prolongation of emotional disorders [56] mediated by dysfunctional emotional regulation strategies [23].

In perfectionism, worry and rumination involve self-focused thinking in which individuals tend to negatively appraise themselves, feelings, behaviors, situations, life stresses, and their ability to cope. The content of these repetitive negative thoughts typically involves themes of failure, doubts about actions, and uncertainty to achieve important personal goals [19,22,57].

In particular, rumination was associated with Doubts about Actions and Concern over Mistakes and individuals who experienced Parental Criticism tended to dwell on mistakes, potentially resulting in the development and maintenance of negative affect [4,15,57]. Moreover, Evaluative Concerns perfectionism, characterized by the tendency to perceive that others expect one to be perfect with additional self-evaluation regarding one's capacity to meet those standards, has been found to be associated with higher levels of emotional suppression. Individuals with high levels of maladaptive perfectionism tend to please people in order to gain acceptance from others [44].

The emotional reactivity refers to excessive emotional lability associated with frequent changes or swings in emotions and mood frequently present in perfectionistic people, also has been referred to an over-reactive strategy in which individuals amplify their negative feelings to elicit support from others and ensure the availability of others [58,59]. In support of this model, Wei and colleagues [60] found that the association among anxiety, negative mood, and interpersonal problems was mediated by emotional reactivity [60].

Despite the research studies evaluating the associations between perfectionism and emotion regulation, perfectionism and interpersonal problems, no studies so far have examined the relationship between the three variables.

In this study, a mediation model, conducted in four steps, is used to examine the relationships among perfectionism, emotion dysregulation, and interpersonal problems in a clinical population. The mediational model considers perfectionism as a predictor. on the basis of studies that consider it a personality trait [61], an aspect of cognition or behaviour that may contribute to the aetiology and maintenance of multiple psychiatric disorders [62], and an interpersonal style related to the need to appear perfect to other that could be the cause of interpersonal problems and fear related to social situation [3,63]. The emotional dysregulation was considered as a mediator because perfectionistic people referred poor strategies for coping with perceived distressing events and difficulties to access to a greater number of adaptive responses and to enhancing flexible and appropriate responses to various situations. Regulating emotions are crucial to avoid emotional over-reactivity that leads individuals to feel excessively negative emotions and mediate the ability to react to stress or in adequate manner [23]. Interpersonal problems were considered as an outcome because in literature were mostly influenced from maladaptive perfectionism [31,32] and dysregulated emotion strategies [3,44,63]. The role of emotional disorders (depression and anxiety) was statistically partial led out from the model, in order to eliminate the influence of the symptomatology from the relationships evaluated.

It is hypothesized that (1) higher levels of maladaptive perfectionism would be positively related to higher levels of interpersonal problems. In addition, (2) higher levels of perfectionism would be positively associated with greater deficits in emotion regulation strategies dimensions. It is further hypothesized that (3) higher levels of negative perfectionism

and emotion dysregulation would be positively associated with higher severity of symptoms of anxiety and depression. Finally, it is expected that (4) emotion dysregulation would statistically mediate the relationship between perfectionism and interpersonal problems.

## Method

### Participants

Patients enrolled in the study amounted to 391 treatment seeking individuals, 164 male (mean age  $35.75 \pm 11.23$ ) and 226 female (mean age  $36.40 \pm 11.56$ ). The sample was composed of outpatients from a variety of private treatment centres, undergoing to receive cognitive behavioral therapy. After the first clinical interview with a cognitive behavioral psychotherapist, all participants had a written description of the study aims and an informed consent to fill out. After signing the consent form, the participants were asked to fill out the questionnaire within eyesight of the investigators. It took approximately 30 min to fill out the package. All the patients accept to participate in the study, no one refuses to fill in the screening test. The assessment was conducted at pre-treatment.

Patients with diagnoses of psychotic disorder, bipolar disorder, or alcohol or drug dependence were excluded from the study. All the other patients were included in the study, no particular inclusion criteria were used.

The work has been carried out in accordance with the Ethical Principles for Medical Research Involving Human Subjects of the World Medical Association (Declaration of Helsinki), and the study was approved by the Ethic Committee of the A.T. Beck Institute of Rome.

### Measures

The Frost Multidimensional Perfectionism Scale [5] (FMPS) a self-report questionnaire including 35 items scored on a 5-points likert-type scale ranging from “strongly agree” to “strongly disagree”. The questionnaire includes 6 subscales addressing the following aspects of perfectionism: concern over mistakes, doubts about actions, personal standards, parental expectations, parental criticism, and organization. The concern-over-mistakes subscale refers to a negative reaction to mistakes and perceptions of even minor errors as a failure. Doubts about actions refer to an over repeated doubting about the quality of one’s performance. Personal standards describe the tendency to set excessively high standards. Parental expectations and parental criticism refer to perceiving one’s parents as having high expectations or being excessively critical. Organization refers to concerns precision and order [5]. In the Italian version of the scale [7] the subscales CM and DA are included into a unique subscale (CMD) and the same is true for the subscales PE and PC, which are part of a subscale indicated PEPC. Psychometric properties are shown good internal consistency, Cronbach’s alpha of subscale ranging from .76 to .87 [7]. In the present sample the Cronbach’s alpha of subscale was: CMD .88; PEPC .85; PS .82; O .79.

The Difficulties in Emotion Regulation Scale [64] (DERS; Italian version [65]) is a 36 item self-report measure developed to assess clinically relevant difficulties in emotion regulation. Items are scored on six scales: Non-acceptance of Emotional Responses (Non-acceptance); Difficulties Engaging in Goal-Directed Behavior (Goals); Impulse Control Difficulties (Impulse); Lack of Emotional Awareness (Awareness); Limited Access to Emotion Regulation Strategies (Strategies); and Lack of Emotional Clarity (Clarity). Participants are asked to indicate how often each of the 36 items applied to them on a 5-point Likert scale ranging from 1 (almost never) to 5 (almost always). Subscale scores were obtained by summing corresponding items. The total score was calculated summing subscale scores. Higher scores on the DERS indicate greater difficulties in emotion regulation. The full measure and its subscales were found to have good internal consistency, test-retest reliability, and construct validity in the

adult [64] and in the adolescent sample [66]. In the present sample, Cronbach’s alpha of subscale ranging from .83 to .91 and the total score was .91.

The Inventory of Interpersonal Problems-32 (IIP-32, [67]) is a 32-item measure with eight subscales reflecting different interpersonal problems. It provides a measure of under and over developed interpersonal strategies. Twenty questions measure aspects that are difficult for the person to do. The phrase ‘It is hard for me to’ is followed by, for example, ‘say no to other people’ or ‘show affection to other people’. A further 12 questions follow the phrase ‘The following are things that you do too much’; examples include ‘I open up to people too much’ or ‘I want to be noticed too much’. A five-point response format is utilized starting from 0 ‘not at all’ to 4 ‘extremely’. A full-scale score can be calculated with higher scores indicating more severe interpersonal problems. Eight subscale scores can also be calculated for the following factors. The IIP-32 subscales have demonstrated adequate internal consistency in outpatient and non-clinical samples [67]. In the present study, the Cronbach’s alpha was .88.

The Beck Depression Inventory (BDI-II [68]) is a commonly used 21-question measure of depression symptoms severity. Each item is scored 0 to 3, with lower scores representing lesser symptoms of depression. Total scores range from 0 to 63. A score greater than 13 corresponds to “clinically symptomatic” depression. In Italian sample, the BDI-II showed good internal consistency (Cronbach’s alpha 0.89) and good convergent and divergent validity [69]. In the present study, the Cronbach’s alpha was .89.

The State-Trait Anxiety Inventory Y (STAI-Y; [70]) was employed to investigate the level of anxiety. This inventory discriminates between state anxiety, temporary or emotional state anxiety, and trait anxiety, defined as a personality trait. The STAI-Y is divided into two sections, each composed of 20 four-point Likert items: STAI-Y1 assesses state anxiety while STAI-Y2 assesses trait anxiety. A meta-analysis demonstrates that the internal consistency of the instrument is adequate in anxious patient samples [71]. In the present study, the Cronbach’s alpha was .91.

### Statistical analysis

Baseline demographic variables were compared for gender using one-way ANOVA for continuous variable and chi-square tests for categorical variables. Pearson Correlation was carried out to explore the relationship between perfectionism and emotional regulation, perfectionism and interpersonal problems and perfectionism and severity of emotional disorders. Due to the multiple comparisons conducted, in order to control Type1 error, Bonferroni correction was used and the significance level was set at .025 and a Pearson  $r$  equal or greater than .30 was considered as a good correlation (from moderate to strong correlations; [72]). The mediational study hypotheses were tested using the moderated mediation package developed by Hayes [73] Hayes. The program estimates indirect associations (mediation) with a bootstrapping procedure to account for non-normal distributions in indirect effects. The program simultaneously tests whether indirect associations vary in strength based on the value of a moderating variable (moderation). All analyses were conducted in SPSS Version 23.

## Results

### Sample characteristics

The final study sample consists of 391 patients ranged from 17 to 69 years of age with a mean age of  $36.13 \pm 11.41$ . All participants were all Caucasian. The 67.3% were employed. With respect to education levels, the 43.6% had completed a university undergraduate degree, 5.4% had completed a postgraduate, 45% had completed a high school degree. In terms of marital status, 76.3% of patient were single or unmarried, 23.7% were married. To avoid the effect due to the sexual characteristics, patients were compared for gender on all measures described above. Demographic data comparing for gender are shown in table 1.

Since no statistically significant differences were found between males and females patients in all analysed parameters, the gender factor has been pooled out from the statistic.

### Association between perfectionism and interpersonal problems

The first research question involved exploring the relationship between perfectionism and interpersonal problems. Specifically, it was hypothesized that there would be a significant positive relationship between maladaptive perfectionism and interpersonal dysfunction. Pearson's correlations were conducted to examine this hypothesis. Correlations among variables are shown in table 2.

Results evidenced that the dimension of concerns over mistakes and doubt about action (CMD) was significantly correlated with some scale of the Inventory of Interpersonal Problems as domineering/controlling, cold/distant, socially inhibited, non-assertive, overly accommodating and self-scarifying, and also with the total of the scale (all  $p < .005$ ), demonstrating that higher CMD was related to greater interpersonal problems. Parental criticism and parental expectations (PEPC) was associated with higher amount of problems with others but not so strong to take in account it (none Pearson correlation  $\geq .30$ ).

No relevant correlations were found between Higher personal standard (PS) and interpersonal problems (none Pearson correlation  $\geq .30$ ). With respect to Organization (O) results shown that only socially inhibition was related to higher level of this type of perfectionism

### Association between perfectionism and difficulties in emotion regulation

The second research question investigated the relationship between perfectionism and difficulties with emotion regulation. It was hypothesized that higher levels of perfectionism would be positively correlated with higher levels of emotion dysregulation.

Pearson's correlations were calculated to examine the relationship between participants' perfectionism tendencies and emotion dysregulation. Table 3 provides the correlations among perfectionism dimension, DERS subscales and total DERS (Table-3).

As predicted, the maladaptive dimension of perfectionism CMD was significantly positively correlated with total DERS ( $r = .50, p < .001$ ). CMD was also significantly positively and strongly correlated with the difficulties engaging in goal-directed behaviour ( $r = .45, p < .001$ ), impulse control difficulties ( $r = .31, p < .001$ ), limited access to emotion regulation strategies ( $r = .43, p < .001$ ), lack of emotional clarity ( $r = .30, p < .001$ ) dimensions of the DERS. No relevant correlations were found between parental expectations and parental criticism (PEPC) and higher personal standard (PS) with difficulties in emotion regulation strategies (none Pearson correlation  $\geq .30$ ).

Organization was not significantly correlated with none dimensions of DERS.

	Men (n=164)	Women (n=226)	p
<b>Age</b>	35.75 ± 11.23	36.40 ± 11.56	n.s
<b>Educational Level (1 Low 4 Top)</b>	3.4 ± 0.7	3.5 ± 0.7	n.s.
<b>Marital status</b>			
• Unmarried	76.7%	76%	n.s.
• Married	23.3%	24%	
<b>Occupation</b>			
• Employed	71.3%	64.6%	n.s.
• Unemployed	27.4%	33.2%	
• Retired	1.2%	2.2%	

**Table 1:** Description of the men and women (Data are expressed as means or as percentage)

	CMD	PEPC	PS	O
<b>Domineering/Controlling</b>	<b>.329**</b>	.226**	.258**	.030
<b>Vindictive/Self-Centered</b>	.294**	.125*	.083	-.100
<b>Cold/Distant</b>	<b>.318**</b>	.142**	.147**	-.065
<b>Socially Inhibited</b>	<b>.397**</b>	.152*	.246**	<b>.311**</b>
<b>Non assertive</b>	<b>.488**</b>	.248**	.121	-.076
<b>Overly Accommodating</b>	<b>.377**</b>	.208**	.105	-.036
<b>Self-Sacrificing</b>	<b>.368**</b>	.218**	.221**	.064
<b>Intrusive/Needy</b>	.269**	.150**	.088	.026
<b>Interpersonal Problems Total</b>	<b>.567**</b>	.283**	.208**	-.047

**Table 2:** Correlations between dimension of perfectionism and Interpersonal Problems scale

\*\*Correlation is significant at the 0.01 level (2-tailed)

\*Correlation is significant at the 0.05 level (2-tailed)

Bold correlations were considered significant ( $p \leq .025$ ) and robust ( $r \geq .30$ )

	CMD	PEPC	PS	O
<b>Non acceptance</b>	.206**	.074	.137**	.005
<b>Goals</b>	<b>.451**</b>	.179**	.129*	-.008
<b>Impulse</b>	<b>.311**</b>	.167**	.106*	.017
<b>Awareness</b>	.083	.068	-.034	-.047
<b>Strategies</b>	<b>.432**</b>	.189**	.114*	-.032
<b>Clarity</b>	.296**	.136**	.105*	-.019
<b>Total DERS</b>	<b>.498**</b>	.246**	.174**	.003

**Table 3:** Correlations between dimension of perfectionism and difficulties in emotion regulation

\*\*Correlation is significant at the 0.01 level (2-tailed)

\*Correlation is significant at the 0.05 level (2-tailed)

Bold correlations were considered significant ( $p \leq .025$ ) and robust ( $r \geq .30$ )

### Association between perfectionism, emotion dysregulation, interpersonal problems and emotional disorders measures

The third research question examined the relationship between perfectionism, difficulties in emotion regulation, interpersonal problems and anxiety and depressive symptoms. It was hypothesized that higher levels of perfectionism, emotion regulation difficulties and interpersonal problems would be positively correlated with higher anxious and depressive symptomatology. Table 2 demonstrates the correlations between the various MPS, IIP, DERS subscales and BDI and STAI-Y total score. Results evidenced that greater level of maladaptive perfectionism (CMD and PEPC) were strongly associated with a higher severity of depressive symptoms, trait anxiety and only for CMD with state anxiety. Scores on the BDI and STAI-Y (trait and state) were significantly positively correlated with greater difficulties in emotion regulation. BDI and STAI-Y-trait scores were also significantly positively correlated with difficulties engaging in the goal-directed behavior, impulse control difficulties, limited access to emotion regulation strategies and lack of emotional clarity (all  $p < .01$ ). Moreover, results evidenced that the domains of interpersonal problems were significantly correlated with higher depressive and anxious trait symptomatology (all  $p < .001$ ) but not with state anxiety. Regarding the subscales depressive symptomatology was associated with non-assertive behavior, while the trait anxiety was associated with cold/distant, socially inhibited, non-assertive and self-sacrificing behavior (Table-4).

### Modeling mediation relationships among perfectionism, interpersonal problems, and emotional dysregulation

To determine whether emotion dysregulation mediated the relationship between perfectionism and interpersonal problems in a clinical population, mediational analyses were performed by means of

		STAI-Y State	STAI-Y Trait	BDI
MPS	<b>CMD</b>	<b>.309**</b>	<b>.568**</b>	<b>.508**</b>
	<b>PEPC</b>	.181**	<b>.321**</b>	<b>.303**</b>
	<b>PS</b>	.067	.144**	.193**
	<b>O</b>	-.053	-.104	-.009
DERS	<b>Non acceptance</b>	.175**	.267**	.275**
	<b>Goals</b>	.274**	<b>.519**</b>	<b>.444**</b>
	<b>Impulse</b>	.241**	<b>.407**</b>	<b>.352**</b>
	<b>Awareness</b>	.140**	.225**	.252**
	<b>Strategies</b>	<b>.331**</b>	<b>.536**</b>	<b>.443**</b>
	<b>Clarity</b>	.195**	<b>.378**</b>	<b>.390**</b>
	<b>Total DERS</b>	<b>.310**</b>	<b>.577**</b>	<b>.499**</b>
IIP-32	<b>Domineering/Controlling</b>	.193**	.214**	.248**
	<b>Vindictive/Self-Centered</b>	.118*	.285**	.215**
	<b>Cold/Distant</b>	.141**	<b>.335**</b>	.261**
	<b>Socially Inhibited</b>	.134**	<b>.364**</b>	.264**
	<b>Non assertive</b>	.214**	<b>.406**</b>	<b>.359**</b>
	<b>Overly Accommodating</b>	.151**	.288**	.246**
	<b>Self-Sacrificing</b>	.160**	<b>.317**</b>	.273**
	<b>Intrusive/Needy</b>	.118*	.261**	.270**
	<b>Interpersonal Problems Total</b>	<b>.245**</b>	<b>.503**</b>	<b>.431**</b>

**Table 4:** Correlations between dimension of perfectionism, difficulties in emotion regulation, interpersonal problems and severity of anxious and depressive symptoms  
\*Correlation is significant at the 0.01 level (2-tailed)  
\*Correlation is significant at the 0.05 level (2-tailed)  
Bold correlations were considered significant ( $p \leq .025$ ) and robust ( $r \geq .30$ )

the PROCESS program [73]. PROCESS allows to specify covariates and multiple mediator variables in the same model and generates direct and indirect effects in mediation and moderated mediation models [73]. Since the sampling distribution of the indirect effect tends to be asymmetric [73,74]. PROCESS tests indirect effects by a nonparametric bootstrapping procedure. A further advantage of PROCESS is that a standard error estimator that does not assume homoscedasticity is available (HC3 estimator), providing some insurance that inference validity is not compromised by heteroscedasticity problems [73]. It was hypothesized that emotional dysregulation might mediate the relationship between perfectionism and interpersonal problems. Moreover, it was expected that CMD and PEPC (maladaptive dimensions of perfectionism) were the most contributing perfectionism measures to interpersonal problems and difficulties in emotional regulation joint distribution, hence these measures have been chosen as independent variables in our model. Two separate mediation models were computed to simultaneously test the hypothesis that Emotional Dysregulation (assessed with the Total score of DERS) would explain the relationship between the dimension of perfectionism (CMD, PEPC) and interpersonal problems (assessed with the Total score of IIP-32). The measures of emotional disorders (BDI, STAY-Y Trait, and State) were used as a covariate, in order to partial out the effect of both DERS and IIP-32 variances. Moreover, it was expected that the indirect associations between perfectionism (CMD, PEPC, and PS) and interpersonal problems would be significantly mediated by the emotional dysregulation.

Overall, the full mediation models accounted for significant variance in interpersonal problems predicted by CMD ( $R = .63$ ;  $R^2 = .39$ ;  $F_{5,367} = 45.65$ ;  $p < .001$ ), PEPC ( $R = .63$ ;  $R^2 = .40$ ;  $F_{4,367} = 65.78$ ;  $p < .001$ ).

The final model is depicted in Figure 1. In the Figure arrows from the covariate to other variables depict the mere presence of a variable in a model in order to partial out its effects from other associations of interest

[73], therefore the arrows connecting emotional disorders variables (BDI; STAI-Y State and Trait) with DERS and IIP-32 do not denote directional effects, but association between variables (Figure-1).

## Discussion and Conclusion

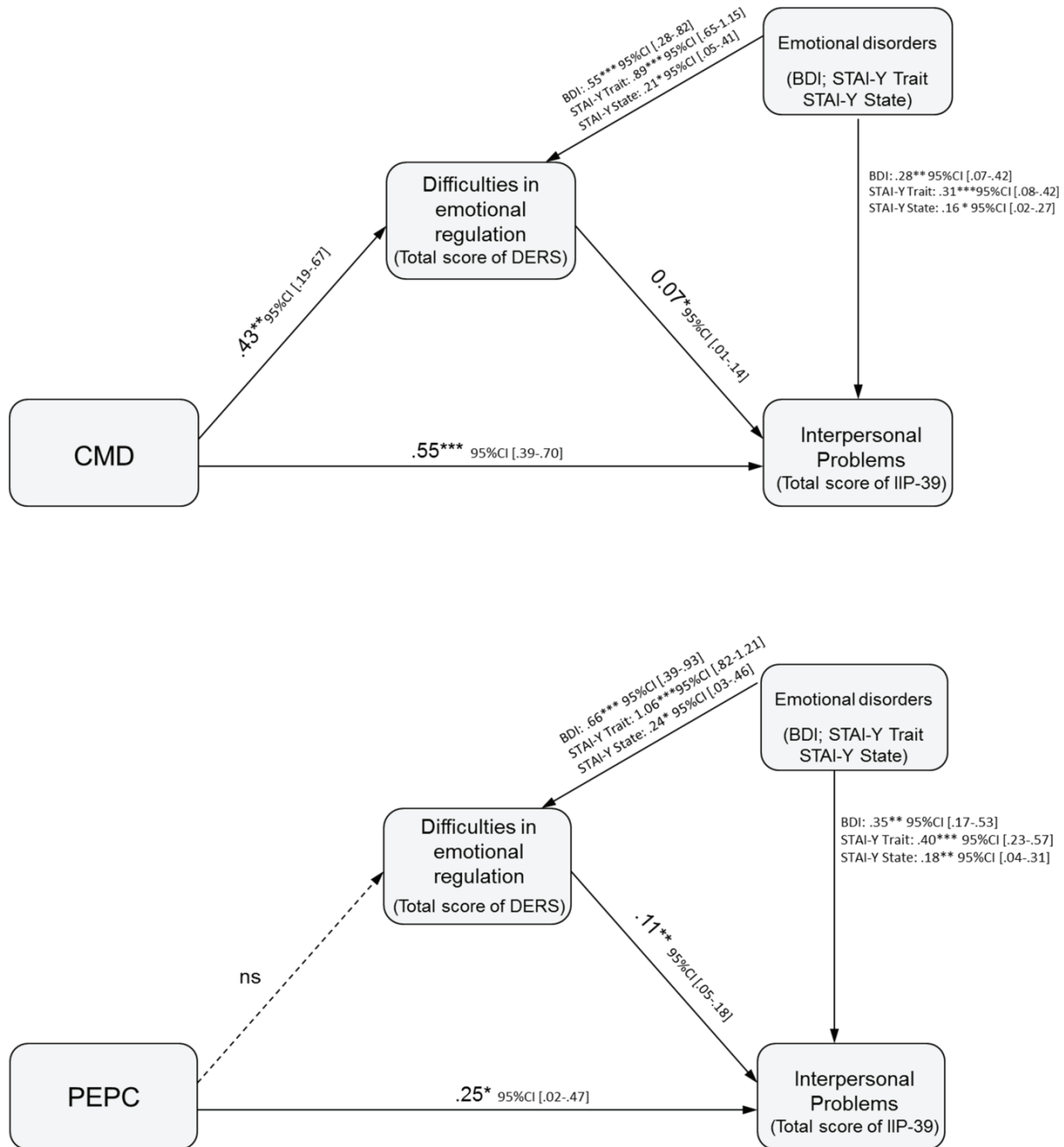
The aims of the current study were fourfold: (1) to examine the relationship between perfectionism and interpersonal problems; (2) to explore the association between perfectionism and emotion dysregulation; (3) to examine the relationship between perfectionism, interpersonal problems and emotion dysregulation with the severity of symptoms of anxiety and depression; and (4) to explore the mediating effect of emotion dysregulation in the relationship between perfectionism and interpersonal problems. Overall, the findings of the current study support the hypotheses that deficits in emotion regulation mediate the relationship between perfectionism and interpersonal problems. The results of the study are discussed in further detail and presented in order of analysis.

The first hypothesis involved analysing the relationship between perfectionism and interpersonal problems. Specifically, it was hypothesized that individuals with higher maladaptive perfectionistic tendencies would show greater problems in the relationship with others.

The findings of the present study were partially consistent with predictions. In particular, it was found that the subscales of perfectionism of concern over mistakes and doubt about actions were strongly significantly associated on several scales of IIP-32 and also with the total scale demonstrating a closely linked of interpersonal problems among individuals reporting higher levels of concern over mistakes and doubt about actions. Particularly, people reporting a higher level of concern over mistakes and doubt about actions appear too dominant, too cold and distant, hard to be sociable, hard to be assertive, too compliant and high in self-sacrifice. This finding seems to fit within the literature reporting that people high in perfectionistic concerns tend to experience many interpersonal problems [35,75,76]. Regarding parental expectations and parental criticism, results evidenced a weak link between interpersonal problems and a higher level of parental pressure. These dimensions are reported in literature as interpersonal dimensions [4], and the pressure of parents to be perfect seem to be predictive of difficulties in interaction with others [27,30,31], but outcomes of the present study do not confirm this results. However, even if not relevant the trend of correlations demonstrate that the perception of higher parental criticism and expectations were associated with higher amount of problems with others.

Personal Standard and Organization was not associated with interpersonal difficulties. These results were consistent with the literature that considered Personal standard and Organization as an adaptive dimension of perfectionism, even if it is necessary taking account that the if the perfectionistic behavior is a drive to the interpersonal need to be accepted, perfectionism assumed negative connotations [5,24]. Organization is associated only with greater social inhibition. Though perfectionism focusing on the organization is a positive dimension, frequently interferes with the ability of the people to complete tasks effectively or enjoy leisure pursuits [77]. In our study, probably, patients with higher levels of the organization, which become a negative aspect, had the need to do everything in the right way. This cognition could deal with unrealistic approval needs of others and with the fear of rejection if they mistake, leading to avoidance of a social situation or social interaction.

The second research question investigated the correlation between perfectionism and emotion dysregulation. As expected, the maladaptive dimensions of perfectionism, concern over mistakes and doubt about



**Figure 1:** Mediation model with CMD and PEPC as independent variable, IIP-32 as dependent variable, DERS as mediator, and measures of anxiety (STAI-Y Trait and State) and depression (BDI) as covariate. Solid lines represent significant paths, broken lines non-significant paths. The regression coefficient b, significance and 95% Confidence Interval are reported for each significant path. \*p<0.05; \*\*p<0.01; \*\*\*p< 0.001

the action was significantly and positively correlated with deficits in emotion regulation, as measured by DERS. CMD was significantly positively correlated with total DERS, non-acceptance of emotional responses, difficulties engaging in the goal-directed behavior, impulse control difficulties, limited access to emotion regulation strategies, lack of emotional clarity. This finding is in keeping with previous research. In a sample of university students, Aldea and Rice [23] found that there was a significant association between maladaptive perfectionism and higher levels of emotion dysregulation. The authors conceptualized maladaptive perfectionism as an individual's tendency to set high standards of performance as well as to perceive that others hold excessive expectations

of the individual that lead to use maladaptive emotional strategies, as emotional hyperarousal and negative feelings and cognitions, for instance, the tendency to ruminate Personal standard and Organization was not correlated with emotional dysregulation probably because adaptive constructs. Studies demonstrate that positive perfectionism has been associated with positive affect, self-control and achievement and well-being [4].

The third research question examined the relationship between perfectionism, interpersonal problems and emotion dysregulation with emotional disorders. In particular, a positive correlation was

hypothesized to exist between perfectionism, difficulties in emotion regulation interpersonal problems and severity of symptoms of anxiety and depression.

Overall, it was found that emotion dysregulation, as measured by DERS, was significantly positively correlated with severity of symptoms of the severity of symptoms of anxiety and depression and weakly with state anxiety. This finding is consistent with literature demonstrating a role of emotional dysregulation in arising the severity of internalizing symptomatology [36]. Also, interpersonal problems domain were strongly linked among people referring higher level of severity of symptoms of trait anxiety and depression [78,79]. In literature, recent studies had evidenced that relationships with others are mediated by emotion regulation deficits in predicting the worst prognosis for emotional psychopathology [80,81]. In fact, models of psychopathology suggest that quality of interpersonal relationships is a key determinant of psychological well-being [82,83].

With regarding perfectionism, as expected, only the maladaptive dimension of concerns over mistakes and doubts about actions was stronger associated with higher severity of anxious and depressive symptomatology. These data fit with the literature considering perfectionism as a risk factor for developing psychological disorders, maintaining and exacerbating the symptomatology, predicting relapse and interfere with the treatment success [4,84,85].

The last mediational hypothesis was confirmed by results. Emotion dysregulation mediated the association between perfectionism and interpersonal problems. In particular, results of the analyses evidenced that CMD was the perfectionism dimension that provided the highest unique contribution to the joint variance of emotional dysregulation and interpersonal problems, even after depressive and anxious symptoms had been accounted for. Regarding the PEPC dimension, only a direct effect in predicting interpersonal problems was evidenced, but not the indirect effect mediating for emotional regulation strategies. Up to date, no studies compound these three variables, but in literature, the relationship among perfectionism and emotional regulation [4,15,22,23], perfectionism as a predictor of interpersonal problems [16,17,35] and the role of dysfunctional emotional strategies in predict difficulties in the relationship with others [80,81] are highly debated.

Even though the findings suggest that difficulties with emotion regulation might be an important element in understanding how perfectionism and interpersonal problems are related, the cross-sectional design does not allow for any firm conclusions to be made regarding causal relationships between the mediating and outcome variables. It is very important that this mediational relation was conducted in a clinical sample and not in general population. Therefore, future research should examine interpersonal problems along with perfectionism and emotion dysregulation over time in order to explore how perfectionists might develop relationship difficulties. Longitudinal studies of clinical samples would be especially informative. Another pitfall of this study is that results were not stratified for different diagnoses, but future studies need to assess if different patterns of relationships among the dimensions investigated could be observed in different pathological disorders.

Findings suggest that during the treatment of interpersonal problems associated with psychiatric disorders, clinical attention should be given to increase adaptive aspects of perfectionism, taking account the regulatory strategies of emotion and affects.

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