Psychological Flexibility and Self-Compassion: Contributions of Gender and its Association with Adolescent Depression

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Abstract

Background: In adolescence, depression is a very impairing and recurrent condition. So it is crucial to identify variables that may contribute to its effective prevention and/or treatment. Self-Compassion and Psychological Flexibility have been pointed to as factors with an important role in the treatment of depression and in predicting recovery. However few studies have addressed these factors in depressed adolescents, and even fewer have studied the patterns of its association according to gender. *Aim(s)*: The main aim of this research is to examine the relationships between depression, self-compassion and psychological flexibility, taking also into account the contribution of gender, in a sample composed of depressed and non-depressed adolescents. *Methods and Results*: The samples are comprised by adolescents aged between 14 and 18 years, 388 from the general population (non-clinical sample) and 25 which were clinically depressed (clinical sample), and were collected in Portuguese schools, hospitals, and private clinics. Depressed and non-depressed adolescents significantly differ in regard to self-compassion and psychological flexibility. In the clinical sample, as expected, we found lower scores in the positive dimensions of self-compassion and of psychological flexibility, presenting higher scores of experiential avoidance. The results also show that gender significantly contributes to the relationship between depressive symptoms and some of these variables, suggesting a moderating effect of gender. *Conclusions*: Some possible explanations for these associations are presented, as well as clinical implications for prevention and treatment programs.

Keywords: Self-compassion, Psychological Flexibility, Depression, Gender Differences, Moderation

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1. Introduction

Depression is a substantial health issue among adolescents. Several studies have found rates of clinical depression among adolescents between 3% and 8% (Apter, Kronenberg, & Brent, 2005; Merry, McDowell, Hedrick, Bir, & Muller, 2004). Furthermore, depression rarely occurs without comorbid mental health problems, which can be as high as 40% to 95% (Parker, & Roy, 2001).

Adolescence is a critical period for the onset of depressive episodes, since the first major lifetime depressive episode tends to occur between the ages of 15 and 18 (Kessler, Avenevoli, & Merikangas, 2001). Also, it is in this age range that the observed gender differences become evident, both in prevalence and incidence of major depression. Until around the age of 13 to 15 years, similar rates are observed for boys and girls, until girls begin to show a disproportionate increase in depression (Hyde, Mezulis, & Abramson, 2008). However, we know little about why this shift occurs, nor how girls and boys might respond differentially to prevention and treatment (Merry, McDowell, Hedrick, Bir, & Muller, 2004). Addressing this issue is of major significance, in order to contribute to addressing the important question of what works best for whom.

Some variables or processes have been largely associated with mental health. Emotional stability has traditionally been considered a key component of psychological health and well-being (Costa, & McCrae, 1980; DeNeve, & Cooper, 1998). Although well adjusted people may appear to be highly stable, recent research suggests that it is actually their ability to continually modify and adjust their emotional responses to environmental changes that underlies their resilience (e.g., Waugh, Thompson, & Gotlib, 2011). Adaptability in emotional responding can be related to both psychological flexibility and self-compassion. Psychological flexibility can be seen as a general capacity for dynamically responding to fluctuating situational demands, which has been identified as a major determinant of mental health (Kashdan, & Rottenberg, 2010). Likewise, self-compassion provides kindness and understanding in the face of life's disappointments, providing emotional stability when the individual is confronted with failure or personal inadequacies (Neff, & Germer, 2013).

Psychological Flexibility

Psychological flexibility, however, has been neglected as a cornerstone of health, because of its complexity, being a construct difficult to define (Kashdan, & Rosenberg, 2010). It refers to a number of dynamic processes that unfold over time. "This could be reflected by how a person: (1) adapts to fluctuating situational demands, (2) reconfigures mental resources, (3) shifts perspective, and (4) balances competing desires, needs, and life domains" (Kashdan, & Rosenberg, 2010, p. 866). In the face of its theoretical background of functional contextualism (Biglan, & Hayes, 1996), definitions of psychological flexibility have to incorporate repeated transactions between people and their environmental contexts (Kashdan, & Rottenberg, 2010). Generally speaking, psychological flexibility is the ability to contact the present moment more fully as a conscious human being, and to change or persist in behavior when this serves valued ends (Hayes, Luoma, Bond, Masuda, & Lillis, 2006). In correlational meta-analyzes conducted by Hayes and colleagues (2006), the principle of psychological flexibility, as measured by the AAQ (Acceptance and Action Questionnaire), appears associated with improvement of quality of life in adults. Psychological flexibility has also been correlated with lower levels of mental illness (Bond, & Bunce, 2003; Donaldson-Feilder, & Bond, 2004).

On the other side, inflexibility is a major theme in depression (Rottenberg, 2005). Given that depression often involves inflexible responses, Rottenberg (2005) has argued that depression can be seen as a syndrome where a severe mood disturbance interrupts ongoing motivated activity. Rottenberg, Gross and Gotlib (2005) called this phenomenon emotion context insensitivity. Mostly, psychological inflexibility refers to "the rigid dominance of psychological reaction over chosen values and contingencies in guiding actions" (Bond, Hayes, Baer, Carpenter, Guenole, Orcutt, Waltz, & Zettle, 2011, p. 678), regardless of its context. Specifically, this general maladaptive regulation process is marked by behavioral efforts to control and prevent unwanted psychological experiences, combined with excessive investment in the literal content of thoughts. Although these efforts can be beneficial in some situations or contexts, they can often be prejudicial in others, leading to greater distress and functional impairment (Hayes, Villatte, Levin, & Hildebrandt, 2011).

This knowledge suggests that, in depression, interventions designed to boost skills related to psychological flexibility are important. It is expected that as the skills related to psychological

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flexibility flourish, people become more versatile and more able to commit attention and energy to meaningful interests and values (Hayes, Strosahl, & Wilson, 1999), therefore, getting protected for future relapses.

Self-Compassion

Research on self-compassion is new in psychology, having a little more than ten years of work (Yarnell, Stafford, Neff, Reilly, Knox, & Mullarkey, 2015). According to Neff (2003), self-compassion is composed of three components: Self-Kindness versus Self-Judgment, a sense of Common Humanity versus Isolation, and Mindfulness versus Over-Identification when confronting negative self-relevant thoughts and emotions. In interaction, these combined components create a self-compassionate frame of mind. Self-Kindness refers to the ability to be caring and understanding with oneself, instead of being critical or judgmental, offering soothing and comfort to the self in times of suffering. Common Humanity involves recognizing that all humans are imperfect, fail, and make mistakes. It connects one's own flawed condition as part of a larger human condition, so that greater perspective is taken when difficulties arise. Mindfulness is a balanced awareness of one's present moment experience or painful feelings rather than over-identifying with the negative aspects of one's life. Compassion can be extended toward the self when suffering occurs through no fault of one's own—when the external circumstances of life are simply difficult to bear. Self-compassion is equally relevant, however, when suffering stems from one's own mistakes, failures, or inadequacies. One of the most consistent findings in the research literature is that self-compassion is inversely related to psychopathology (Barnard, & Curry, 2011). In fact, a recent meta-analysis (MacBeth, & Gumley, 2012) found a large effect size when examining the link between self-compassion and depression, anxiety, and stress across 20 studies. In addition, empirical evidence suggests that self-compassion is associated negatively with depressive symptoms, being also a strong predictor of depression recovery (Neff, 2003; Neff, 2005; Neff, Kirkpatrick, & Rude, 2007). Self-compassion appears to facilitate resilience by moderating people's reactions to negative events (Leary, Tate, Adams, Allen, & Hancock, 2007). Self-compassionate people are less likely to ruminate about or else suppress their negative thoughts and emotions (Neff, 2003).

The importance of the study of gender differences

Despite the lack of consistent studies, with no studies conducted in adolescents, there is reason to hypothesize gender differences in self-compassion (Yarnell, Stafford, Neff, Reillyb, Knoxb & Mullarkey, 2015). For instance, in the context of the study of compassion, the norm of self-sacrifice (prioritizing the needs of others over their own) is more familiar to women, which may impact their ability to give themselves compassion (Raffaelli, & Ontai, 2004). Women tend to be more critical of themselves than males (DeVore, & Pritchard 2013). Thus, there is reason to believe that women are more likely to lack self-compassion than men. However, there are also reasons to believe that the reverse is true. Since self-compassion involves actively soothing and comforting oneself when suffering is experienced (Neff, 2009), women seem to be more prepared for that than men (Raffaelli, & Ontai, 2004). In fact, research indicates that adherence to masculine gender norms, related with socialization patterns emphasizing emotional restrictiveness and stoicism (Levant, 2011), is associated with lower levels of self-compassion (Reilly, Rochlen, & Awad, 2014).

In regard to studies of gender differences on psychological flexibility, no systematic studies on the contribution of gender in its relationship to depression, or overall mental health, specifically in adolescents, are found in literature. Nonetheless, having in count the studies available on the relationship between inflexibility and depression, it would be important to explore if there are differences between boys and girls on psychological flexibility and if gender moderates its relationship with depression.

Therefore, despite the overall lack of studies of this nature with adolescents, it is expected that there are gender differences in self-compassion and psychological flexibility, as well as different patterns of its association with clinical depression. If so, this would have research and clinical implications regarding how and to whom self-compassion and psychological flexibility should be taught, using specifically developed therapies for promoting these skills (e.g., Therapy of Acceptance and Commitment; Compassionate Mind Training).

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Present Study

The purpose of the present study was to investigate gender differences in self-compassion and psychological flexibility in Portuguese adolescents, and explore its contribution to depression. Having in count the lack of studies among adolescents concerning gender differences in the relationships between depression, psychological flexibility and self-compassion, no specific hypotheses were made. An exploratory study was, then, carried out, in order to simultaneously examine differences on these variables between non-clinical and clinical samples (non-depressed vs depressed adolescents) and to analyze gender differences in these variables and in the associations between them, within the framework of moderation analyses.

2. Methods

2.1. Participants

The total sample consists of 413 adolescents, aged between 14 and 18 years old (M=5.97, SD=1.32) collected in Portuguese schools, hospitals and private clinics. Of these, 249 are females (60.3%) and 149 males (39.7%). This so called total sample is comprised by 388 adolescents from the general population (normal sample) and by 25 adolescents, which are clinically depressed (clinical sample). Adolescents from the clinical sample were selected using the diagnostic interview Kiddie-Sads-Present and Lifetime Version (K-SADS-PL; Kaufman, Birmaher, Brent, Rao, & Ryan, 1996; Portuguese version by Matos, Marques, & Salvador, 2015).

2.2. Procedure

After guaranteeing authorizations of national data protection authorities that regulate the application of surveys in schools and of ethical health commissions of hospitals from de central region of Portugal, authorizations from schools' directors and from directors of mental health services were obtained. Adolescents and parents (in the case of underage teens) were required to sign inform consents prior to their participation in the study.

Regarding the sample collected in schools, self-report instruments were applied in classroom context, in the presence of researchers. To the students who reported high levels of depression (cut-off point 19 on Children´s Depression Inventory), the K-SADS-PL interview was administered individually, in an appropriate and private space. Subjects recruited from the hospitals and private clinics were directed by their child psychiatrist to the study and were then interviewed by the researchers in the same conditions as students selected in schools, after which filled the self-report protocol. Researchers were psychotherapists with more than five years of clinical experience, which had specific training in the administration of the interview.

2.3. Measures

Children's Depression Inventory (CDI; Kovacs, 1985; Portuguese version by Marujo, 1994). The CDI is a self-report instrument composed of 27 items rated on a three-point *Likert* scale that evaluates depressive symptomatology in children and adolescents, aged between 6 and 18 (Kovacs, 1992). It consists of 27 items that feature three response possibilities and the individual must indicate the one that best describes how he felt in the past two weeks. Total score ranges between 0 and 54 points and a higher score indicates a higher severity of depression. In the original version of the scale, Kovacs (1985) demonstrated good psychometric qualities of the instrument, in terms of internal consistency, with Cronbach's alphas (α) between .83 and .94, and in terms of test-retest reliability. In the Portuguese version, Marujo (1994) and later Dias and Gonçalves (1999), found high Cronbach's α values (between .80 and .84). However, these authors could not find the 5 factors described by Kovacs (1985), obtaining an one-dimensional structure. In the present investigation an alpha of .87 was found for the total score of the CDI, revealing good internal consistency.

Self-Compassion Scale (SELF-CS; Neff, 2003; Portuguese version by Castilho, & Pinto-Gouveia, 2011). The Self-Compassion Scale is a self-report measure composed by 26 items that measure six

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components: Self-Kindness (ability to be kind and understandable to oneself), Mindfulness (balanced awareness and acceptance of one's own feelings and painful feelings), Common Humanity (understanding one's own experiences as part of a larger human experience), Self-Judgment (to be critical and punitive of oneself), Over-Identification (Over-Identification with negative feelings and thoughts) and Isolation (understanding one's own experiences as different and part of an inadequate self). Each item is rated on a five-point *Likert* scale according to how frequently the individual acts towards himself in difficult times (1= "Almost never" to 5="Almost always"). The total self-compassion score can be obtained by reversing the score of the negative subscale items (i.e. Self-Judgment, Isolation, and Over-Identification) and then compute a total mean. Subscale scores are obtained by calculating the mean of subscale's items responses. The original scale revealed to possess a very good reliability, with a Cronbach's α value of .92 (Neff, 2003). For the scales, the following Cronbach's α values were obtained in the original study of the scale: Self-Kindness .78, Mindfulness .75, Common Humanity .80, Self-Judgment .77, Over-Identification .81 and Isolation .79. In the Portuguese version of this scale (Castilho, & Gouveia, 2011), a good internal consistency was also found: .89 for the total scale; Self-Kindness .84, Mindfulness .73, Common Humanity .77, Self-Judgment .82, Over-Identification .78 and Isolation .75. In the present study we found similar Cronbach's α values. For the total self-compassion score, the Cronbach's α value was .89. The subscales also revealed good internal consistency: Self-Kindness .80, Mindfulness .69, Common Humanity .86, Self-Judgment .82, Over-Identification .82, and Isolation .82.

Acceptance and Action Questionnaire-II (AAQ-II, Bond, Hayes, Baer, Carpenter, Orcutt, Waltz, & Zettle, 2011; Portuguese version by Pinto-Gouveia, Gregório, Dinis, & Xavier, 2012). The scale consists of 7-items and reflects the single domain of psychological inflexibility with higher scores indicating greater psychological inflexibility, or experiential avoidance. Subjects rate how true each statement is for them on a 7-point *Likert* scale ranging from 1 (never true) to 7 (always true). By inverting the items, one can obtain a measure of psychological flexibility, which was the domain used in this study. Therefore, in the present study, higher scores represent higher levels of psychological flexibility. In their study, Bond and colleagues (2011) found a Chronbach's alpha mean of .84, across six samples (ranging between .78 and .88). In the Portuguese version of this instrument authors obtained a Chronbach's alpha of .90. In the present study, a high value of internal consistency was also found, $\alpha = .93$.

2.4. Analytical Strategy

Data analysis was conducted using the *Statistical Package for Social Sciences* (SPSS, version 22.0 for Windows). A chi-square was computed to investigate if differences between clinical and non-clinical groups resulted from gender differences on distribution of subjects for both samples. To test differences between groups in the set of variables under study, namely non-clinical vs clinical samples and male vs female, Multivariate Analyses of Variance (MANOVA) were performed. In order to explore specific gender differences on the subscales of self-compassion (the only multidimensional variable), Student t-tests were used. The moderator effect of gender in the relationship between self-compassion, and its subscales, psychological flexibility and depressive symptoms in adolescents, was analyzed using hierarchical multiple regressions. Moderation occurs when the nature of the relationship between the predictor variable and the criterion variable differs in its strength or sign, in the presence of a third variable, the moderator. Statistically, a moderating effect would be seen if any regression coefficient of the interaction term was statistically significant (Hayes, 2013).

3. Results

3.1. Differences between non-clinical and clinical samples

Clinical and non-clinical groups were equivalent regarding gender distribution [$\chi^2_{(2)}$=.362; p=.547), so differences between clinical and non-clinical groups did not result from gender differences on distribution of subjects for both samples.

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A one-way between groups multivariate analysis of variance (MANOVA) was performed to explore differences between clinical and non-clinical samples in our set of dependent variables: depressive symptomatology, overall *self-compassion* (total score on SELF-CS), and *psychological flexibility*. Preliminary assumption testing was conducted to check for normality, linearity, univariate and multivariate outliers, homogeneity of variance-covariance matrices, and multicollinearity, with no serious violations noted.

Results showed a statistically significant difference between clinical and non-clinical samples on the combined dependent variables: $F_{(3, 409)}$ 38,66, p<.001; Wilks' Lambda=.78; partial eta squared.221.

When the results for the dependent variables were considered separately, the three variables reached a statistical significance, using a Bonferroni adjusted alpha level of .017: *self-compassion*, $F_{(1, 411)}$=63.29, p<.001, partial eta squared=.133; *psychological flexibility*, $F_{(1, 411)}$=44.18, p<.001, partial eta squared=.097; *depressive symptomatology*, $F_{(1, 411)}$=113.24, p<.001, partial eta squared=.216.

An inspection of the mean scores indicated that in clinical sample we found lower levels of *self-compassion* (M=13.74, SD = 0.60) than in non-clinical sample (M=18.67, SD=.153), as well as lower levels of *psychological flexibility* (M=21.68, SD=1.88 vs M=34.55, SD=.476). In the variable measured by the CDI, *depressive symptomatology*, subjects from clinical sample reported higher scores (M=25.32, SD=1.21) than subjects from non-clinical sample (M=12.04, SD=.307).

3.2. Gender Differences in depressive symptomatology, self-compassion and psychological flexibility

To explore gender differences in the same set of dependent variables (depressive symptomatology, overall *self-compassion*, and *psychological flexibility*) another MANOVA was performed. Preliminary assumption testing was conducted to check for normality, linearity, univariate and multivariate outliers, homogeneity of variance-covariance matrices, and multicollinearity, with no serious violations noted.

Results showed a statistically significant difference between males and females on the combined dependent variables: $F_{(3, 409)}$=16,65, p<.001; Wilks' Lambda=.89; partial eta squared=.109.

When the results for the dependent variables were considered separately, the three variables reached statistical significance, using a Bonferroni adjusted alpha level of .017: *self-compassion*, $F_{(1, 411)}$=19.88, p<.001, partial eta squared=.046; *psychological flexibility*, $F_{(1, 411)}$=36.26, p<.001, partial eta squared=.081; *depressive symptomatology*, $F_{(1, 411)}$=43.76, p< .001, partial eta squared=.096.

An inspection of the mean scores indicated that boys reported slightly higher levels of *self-compassion* (M=19.23, SD=2.82) than girls (M=17.81,SD=3.35), as well as higher levels of *psychological flexibility* (M=37.23, SD=9.36 vs M=31.49, SD=9.53). In the variable *depressive symptomatology*, measured by the CDI, females reported higher scores (M=14.56, SD=7.02) than males (M=10.24, SD=5.60).

3.2.1. Gender Differences in Self-Compassion subscales: Self-Kindness, Mindfulness, Common Humanity, Self-Judgment, Over-Identification and Isolation

Being these differences noted, were conducted further analyses in order to test specific differences in *self-compassion* subscales. Means and standard deviations for the total sample and t-test differences between males and females are presented on Table 1. Regarding the subscales, no significant differences for *Self-Kindness* and *Mindfulness* were found. Girls presented slightly higher results on the subscale *Common Humanity*, and presented significantly higher means on *Isolation*, *Self-Judgment* and *Over-Identification* than boys.

Table 1. *Gender Group differences in Self-Compassion sub-scales*

	Total (N = 413)		Girls (n = 249)		Boys (n = 164)		
Variables	*M*	*SD*	*M*	*SD*	*M*	*SD*	*t*
Self-Kindness	2.62	0.79	2.64	0.78	2.59	0.80	.629
Mindfulness	2.78	0.76	2.76	0.71	2.80	0.83	-.462

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C. Humanity	2.70	0.83	2.80	0.82	2.56	0.84	2.842*
Self-Judgment	2.56	0.92	2.76	0.91	2.27	0.87	5.480***
Over-Identif.	2.54	0.93	2.80	0.86	2.16	0.89	7.548***
Isolation	2.62	0.95	2.83	0.91	2.32	0.93	5.519***

**p≤0.05, ***p≤0.001.*

3.3. Analysis of Moderation

Taking into account the observed differences by gender, hierarchical multiple linear regressions were conducted to clarify the role of the gender, verifying the possibility of the existence of a moderating effect of gender in the relationship between *self-compassion* (SELF-CS), its subscales, as well as *psychological flexibility* (AAQ-II) and *depressive symptomatology* (CDI).

Before carrying out the analysis of moderation, the values of the predictor variables were standardized to reduce potential multicollinearity problems and so that interpretation of intercepts of the model was more simplified (Marôco, 2010). We also proceeded to the creation of a *dummy variable* for gender and interaction terms were created between each of the variables in study (*self-compassion* and its factors, *psychological flexibility*) and *gender* (*dummy variable*). To test the effect of the interaction term between the predictors (*self-compassion* and its subscales, and *psychological flexibility*) and moderator (*gender*) in the criterion (total CDI), eight separately moderation analyses were performed, using multiple regressions. Sequentially, the predictor was introduced in a first step; in a second step the moderator (*gender*) and in a third step the multiplicative term between the predictor and the moderator (interaction term). Afterwards, a graph in SPSS to better show the association between the variables was generated.

3.3.1. Study of the Moderating Effect of Gender in the Relationship between Self-Compassion (total score of SELF-CS) and Depressive Symptomatology in Adolescents

Hierarchical multiple linear regressions were conducted to study the moderating effect of gender in the relationship between overall *self-compassion* and adolescents' depressive symptomatology. Although overall *self-compassion* (β=-6.84; p<.001) and *gender* (β=-1.71; p<.001) were predictive of *depressive symptomatology*, no significant interaction effect was found (β=-.65; p=.065).

The same analyses were conducted for the six subscales of SELF-CS (*Common Humanity*, *Mindfulness*, *Self-Kindness*, *Self-Judgement*, *Isolation*, *Over-Identification*). Although the first two steps of the models for the subscales *Self-jugdment* (β=.589, p<.001; *gender*: β=-.168; p<.001), *Isolation* (β=.607, p<.001; *gender*: β=-.162; p<.001) and *Over-Identification* (β=.565; p<.001; *gender*: β=-.129; p<.005) were predictive of *depressive symptomatology*, in the third step of the model no significant interaction effect between these variables and gender was found. On the contrary, the three positive subscales yield a positive interaction effect with gender, and their results are described below.

3.3.2 Study of the Moderating Effect of Gender in the Relationship between Common Humanity (SELF-CS subscale) and Depressive Symptomatology in Adolescents

Gender was examined as a moderator of the relationship between *Common Humanity* and *depressive symptomatology*, through a multiple hierarchical linear regression.

In a first step, *Common Humanity* was entered resulting in a statistically significant model, [R^2=.019, $F_{(1,411)}$=8.161, p<.001]. In the second step, the variable *gender* originated a statistically significant model [R^2=.130, $F_{(2,410)}$=30.695, p<.001. Both *Common Humanity* and *gender*, isolatedly, were predictors of depressive symptomatology (*Common Humanity:* β=-.140, p=.004, gender: β=-.336, p<.001) (cf. Table 2). In the third step of the regression, the interaction term was inserted, producing a statistically significant model, with a significant increase in R^2 [R^2=.154, $F_{(3,409)}$=24.754, p<.001] and, therefore, observing an increase in the variability explained with regard to depressive symptomatology. A significant interaction effect was found (β=.201, p=.001) (cf. Table 3), explaining 15,4% of the variance in depressive symptomatology.

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This statistically significant coefficient of the interaction term indicated that the slope that predicts changes in depressive symptomatology according to the level of *Common Humanity* differed significantly depending on gender.

Table 2. *Regression coefficients for the three steps of the hierarchical multiple regression with Common Humanity (CM), Gender and the interaction term (N = 413)*

Model	Predictors	*R*	R^2	*F*	*ß*	*t*	*p*
1	Common Humanity	.140	.019	8.161	- .140	- 2.857	.004
2	Common Humanity	.361	.130	30.695	- .186	- 4.003	.000
	Gender				-.336	- 7.226	.000
3	Common Humanity	.392	.154	24.754	- .314	- 5.269	.000
	Gender				-.328	-7.119	.000
	CM*Gender				.201	- 3.365	.001

In order to interpret the moderating effect of gender in the relationship between *Common Humanity* and depressive symptomatology, a graphic of the results was computed (cf. Figure 1). Taking into account the main effects, it was possible to observe that higher levels of *Common Humanity* relate to less depressive symptoms. Regarding the interaction effect, we can say that when *Common Humanity* is low, boys presented lower levels of depressive symptoms compared to girls. Moderation suggests that for the same level of *Common Humanity*, girls tended to have more depressive symptoms than boys.

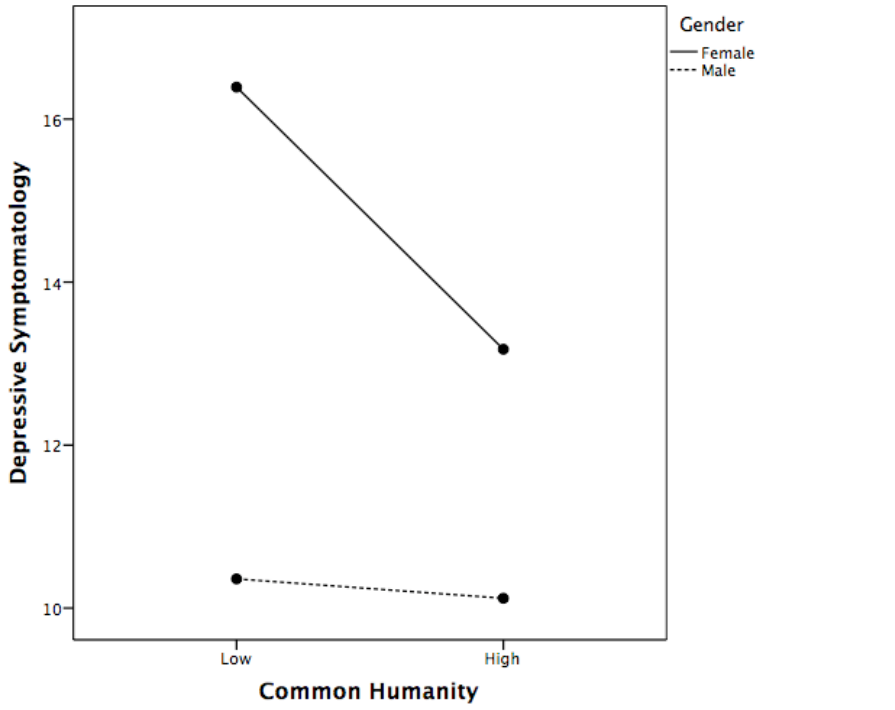

Figure 1. *Graphical representation of the gender moderator effect on the relationship between Common Humanity and depressive symptomatology*

3.3.3 Study of the Moderating Effect of Gender in the Relationship between Self-Kindness (SELF-CS subscale) and Depressive Symptomatology in Adolescents

In a first step, *Self-Kindness* was entered as a predictor and, later, *gender* was entered. The variable *Self-Kindness* resulted in a statistically significant model, in the first step [R^2=.099, $F_{(1,411)}$=45.014, p<.001]. The variable *gender* originated, in step 2, a statistically significant model

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[R^2=.201, $F_{(2,410)}$=51.631, p<.001]. In the third step of the regression, the interaction term was inserted, producing a statistically significant model, with a significant increase in R^2 [R^2 =.233, $F_{(3,409)}$=41.478, p<.001] and, therefore, observing an increase in the variability explained with regard to depressive symptomatology in adolescents. Both *Self-Kindness* and *gender*, isolatedly, were predictors of depressive symptomatology (*Self-Kindness*:β=-.314, p<.001, gender:β =-.320, p<.001) (cf. Table 3). The analysis of the interaction term suggested the presence of a moderating effect of gender in the relation between *Self-Kindness* and depressive symptomatology (β=-.327, p<.001) (cf. Table 3). Thus, it was found that the interaction term was a significant predictor, explaining 23.3% of the variance in depressive symptomatology.

Table 3. *Regression coefficients for the three steps of the hierarchical multiple regression with Self-Kindness, Gender and the interaction term (N = 413).*

Model	Predictors	*R*	R^2	*F*	*ß*	*t*	*p*
1	Self-Kindness	.314	.099	45.014	- .314	- 6.709	.000
2	Self-Kindness	.449	.201	51.631	- .324	- 7.340	.000
	Gender				-.320	- 7.252	.000
3	Self-Kindness	.483	.233	41.478	- .327	- 7.552	.000
	Gender				-.318	-7.341	.000
	Self-Kindness*Gender				.179	4.137	.000

A graphic of the results was computed (Figure 2) to understand the moderator effect of *gender* in the relationship between *Self-Kindness* and adolescents' depressive symptomatology. Regarding the interaction effect, we can say that when *Self-Kindness* is low, boys presented lower levels of depressive symptoms compared to girls. Moderation suggests that for the same level of *Self-Kindness*, girls tend to have more depressive symptoms than boys.

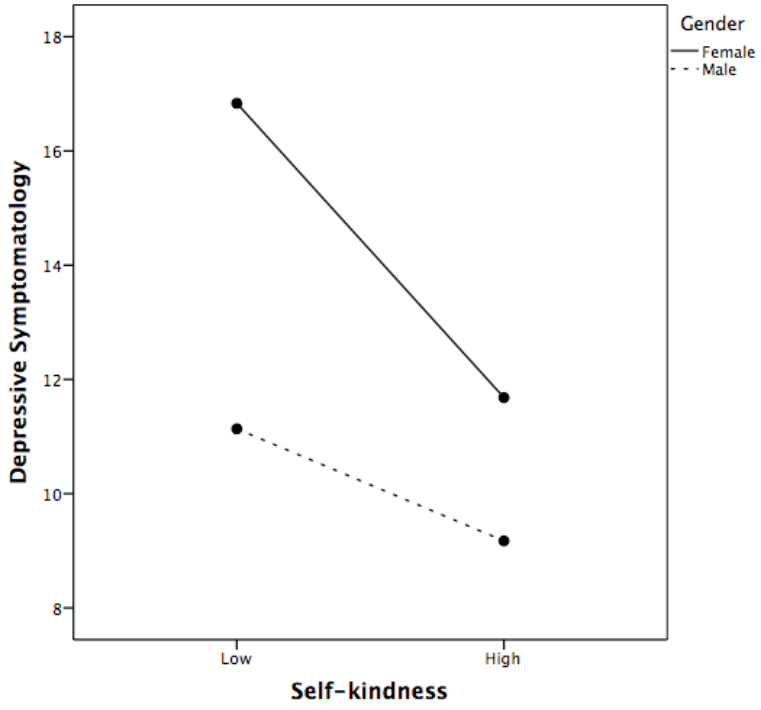

Figure 2. *Graphical representation of the gender moderator effect on the relationship between Self-Kindness and depressive symptomatology*

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3.4.1 Study of the Moderating Effect of Gender in the Relationship between Mindfulness (SELF-CS subscale) and Depressive Symptomatology in Adolescents

In a first step, *Mindfulness* was entered as a predictor and, later, gender was entered. The first step revealed a statistically significant model, [R^2=.067 $F_{(1,411)}$=29.405, p<.001]. The variable *gender* originated, in step 2, a statistically significant model [R^2 =.159, $F_{(2,410)}$=38.883, p<.001]. In the third step of the regression, the interaction term was inserted, producing a statistically significant model, with a significant increase in R^2 [R^2=.437, $F_{(3,409)}$=32.259, p<.001] and, therefore, observing an increase in the variability explained with regard to depressive symptomatology in adolescents. Both *Mindfulness* and *gender*, isolatedly, were predictors of depressive symptomatology (*Mindfulness*: β=-.258, p<.001, *gender*: β=-.304, p<.001) (cf. Table 4). In the third step of the model, the interaction term yield a significant interaction effect (β=.245, p<.001), explaining 19.1% of the variance in the depressive symptomatology.

Table 4. *Regression coefficients for the three steps of the hierarchical multiple regression with Mindfulness, Gender and the interaction term (N =413).*

Model	Predictors	*R*	R^2	*F*	*β*	*t*	*p*
1	Mindfulness	.258	.067	29.405	- .258	- 5.423	.000
2	Mindfulness	.399	.159	38.883	- .251	- 5.552	.000
	Gender				-.304	- 6.723	.000
3	Mindfulness	.437	.191	32.259	- .419	- 6.871	.000
	Gender				-.306	- 6.870	.000
	Mindfulness*Gender				.245	4.017	.000

In the same way as before, in order to understand the moderating effect of gender in the relationship between *Mindfulness* and adolescents' depressive symptomatology, a graphic of the results was computed (cf. Figure 3).

Regarding the interaction effect, we can say that when *Mindfulness* is low, males present lower levels of depressive symptoms compared to the female gender. Moderation suggests that for the same level of *Mindfulness*, girls tend to have more depressive symptoms than boys.

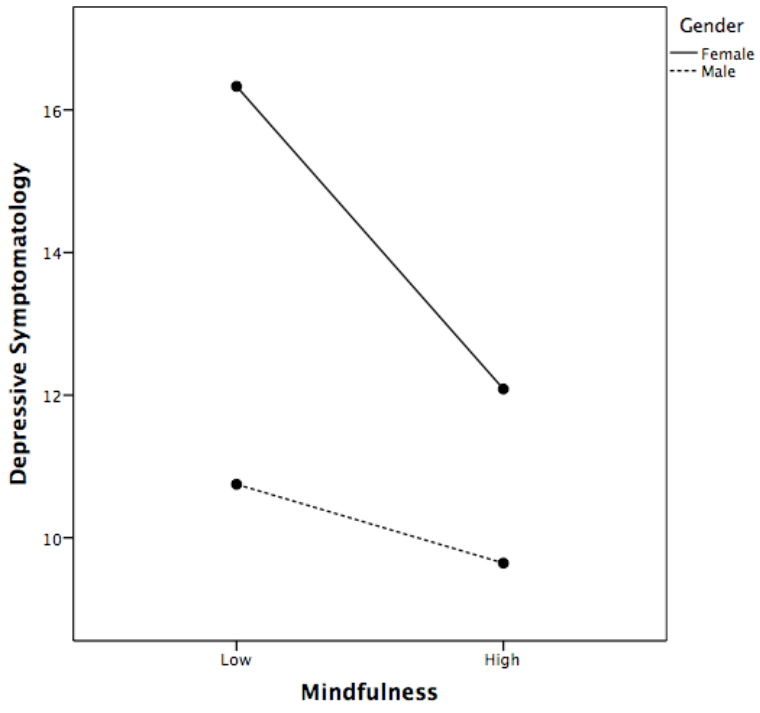

Figure 3. *Graphical representation of the gender moderator effect on the relationship between Minfulness and depressive symptomatology*

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3.3.4 Study of the Moderating Effect of Gender in the Relationship between Psychological Flexibility (measured by AAQ-II) and Depressive Symptomatology in Adolescents

A hierarchical multiple linear regression was conducted to study the moderating effect of gender in the relationship between *psychological flexibility* and adolescents' depressive symptomatology. Although *psychological flexibility* (β =-.665; p<.001) and *gender* (β=-.131; $p\leq$ .001) were predictive of depressive symptomatology, the interaction term (β=.054; p=.267) did not yield a significant effect.

4. Discussion

While research suggests strong associations of self-compassion (Yarnell, Stafford, Neff, Reilly, Knox, & Mullarkey, 2015) and psychological flexibility (Hayes, Luoma, Bond, Masuda, & Lillis, 2006) with mental health and well-being, few studies have clarified the nature of their associations with depression. On the other hand, gender norms may hinder the development of skills of self-compassion (Yarnell, Stafford, Neff, Reilly, Knox, & Mullarkey, 2015) and, therefore, also the enhancement of psychological flexibility. To date, however, research and interventions have not taken into account the potential gender differences in the study of self-compassion and psychological flexibility, particularly in adolescents, and the role of gender in the relationship between these variables and depression.

As expected, we found significant differences in these variables between non-clinical and clinical samples. Depressed adolescents presented less levels of self-compassion and of psychological flexibility that non-depressed adolescents. This is in line with the existing literature, which present significant negative associations between self-compassion and psychological flexibility and psYcopathology (Berking, Neacsiu, Comtois, & Linehan, 2009; Deci & Ryan, 2000; Hayes, Luoma, Bond, Masuda, & Lillis, 2006), particularly with depression (Zettle & Rains, 1989).

In this framework, it is important to notice that the inclusion, in this study, of depressed adolescents, was very important in order to increase our knowledge about depression, because comparing clinical with non-clinical samples is the best way to characterize a disorder, ensuring that cases with high levels of depressive symptomatology and fulfilling diagnostic criteria were also included.

Another way to clear our understanding of a disorder is to explore gender differences. Since it is during adolescence that gender differences in the prevalence and incidence in depression tend to emerge (Hyde, Mezulis, & Abramson, 2008), to explore gender differences in variables that contribute to differentiate clinical and non-clinical subjects is of crucial importance, in order to develop interventions able to treat depression effectively and to prevent its recurrence. Regarding self-compassion, past research findings on gender differences have been inconsistent. Several studies have found that females have lower levels of self-compassion than males (Neff, 2003; Neff, Hseih, Dejitthirat, 2005; Neff & McGehee, 2010), while others have not found significant gender differences (Iskender, 2009; Neff, Pisitsungkagarn,& Hseih, 2008; Neff & Pommier, 2013). Our results are in agreement with the earlier studies, revealing a significant difference in the levels of self-compassion among males and females adolescents, with girls reporting lower levels of overall self-compassion than boys.

The study of gender differences concerning the subscales of the SELF-CS, revealed that highly significant differences were observed in regard to negative subscales (Self-Judgment, Isolation and Over-Identification), showing the girls higher values than boys. As to the positive subscales, no significant differences were found (Self-Kindness and Mindfulness subscales) except for a low statistic significant difference in the subscale Common Humanity, where girls also presented higher results. To our knowledge, no studies of gender differences regarding these subscales were yet made, so this study represents a first step in understanding these gender differences in self-compassion. We hypothesize that the gender differences observed in levels of overall self-compassion (where girls report lower results of self-compassion), could be especially related with the fact that girls are more critical and punitive of themselves, over-identify more with their feelings/thoughts and show a greater tendency to relate their experience to a inadequacy of their self. The fact that boys and girls did not differ on the majority of positive sub-scales of self-compassion is not surprising, since these are self-regulatory strategies that need adequate training to be promoted, and the promotion of these strategies is not characteristic of the Portuguese educational and cultural contexts, where educators tend to be

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excessively critical and punitive. Given this issue, these results cannot be generalized to other cultural environments, and must be replicated in other cultures.

All the variables in study are predictors of depressive symptomatology. Overall, self-compassion and its negatives subscales (Self-Judgment, Isolation and Over-Identification), as well as psychological flexibility, were predictors of depression, although gender did not moderate the strength of these relationships. However, for the positive subscales of SELF-CS, we found a moderator effect of gender. The data suggest that the interaction with gender was significant for the relationships between the subscales of Self-Kindness, Common Humanity and Mindfulness, and depressive symptomatology. As levels of Mindfulness, Common Humanity and Self-Kindness increased, depressive symptoms decreased for both genders, but in a more pronounced way for girls. This suggests that the enhancement of the skills of Mindfulness, Self-Kindness and the sense of Common Humanity could be especially important for girls and that it may protect them from depression.

Regarding psychological flexibility, our results suggested gender differences in adolescents. Therefore, boys presented significantly higher scores of psychological flexibility than girls. Psychological flexibility was further shown to be a negative predictor of depressive symptomatology, which is in line with the differences observed in our study between depressed and non-depressed adolescents. Regarding moderation analyses, gender did not show a moderator effect in the relationship between this psychological process and depressive symptomatology. Therefore, psychological flexibility was a predictor of depressive symptomatology, but in this relationship it was not found a buffering or exacerbating effect of gender. We believe that, in adolescence, the absence of this moderating effect of gender is not surprising. Taking into account the complexity, richness and importance of the psychological flexibility construct for mental health, we think that psychological flexibility is equally important for boys and girls in protecting them from depression. Additionally, at this developmental phase, psychological functioning patterns are not supposed to be very rigid. However, we expect to find a moderating effect of gender in adulthood, a time when psychological functioning patterns are already more rigid and women experience higher rates of depression, which may affect their adaptation to context demands. Future studies should continue to clarify the role of psychological (in)flexibility in depression, namely as a predictor or a consequence of depressive symptomatology (Kashdan, & Rottenberg, 2010), and mainly in adolescence because these studies are lacking in literature.

Implications for Research

The present research represents an important step in understanding gender differences in depression among adolescents. It studies variables that can explain the greater tendency of women to present depressive symptomatology and develop depression. Additionally, this study analyzes gender differences in SELF-CS dimensions for the first time. To our knowledge, this is also the first available research that explores the relationships between psychological flexibility, gender and depressive symptomatology in adolescents.

The results obtained are in line with research that suggests that interventions for depression should not only target psychological symptoms but should also underlying processes, such as psychological flexibility and emotional regulation strategies associated with self-compassion.

Gender differences found in this study showed the importance of the training of self-regulatory skills associated with self-compassion and of the enhancement of skills enrolling psychological flexibility, once they seem to have a protective impact on depression. On the other side, the training of skills of self-compassion seem to be more important among girls, regarding the moderating effect of gender observed for the positive dimensions of SELF-CS.

These results, however, must be replicated using a larger clinical sample, and more researches are needed, including longitudinal designs treatment studies, and enrolling other important variables, such as sociodemographic ones, like age, and educational and cultural factors that can influence gender differences in self-compassion and psychological flexibility, like parental practices and cultural beliefs associated.

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Acknowledgments

We would like to express our gratitude to all the participants that made this study possible and to FCT – Fundação para a Ciência e a Tecnologia (Portuguese Foundation for Science and Technology) that funded the study. This work is funded by an individual doctoral scholarship (FRH/BD/84252/2012, "Depression in Adolescence: a new intervention program"), by ERDF – European Regional Development Fund through the COMPETE Program (operational program for competitiveness) and by National Funds through the FCT within project "Prevention of depression in Portuguese adolescents: efficacy study of an intervention with adolescents and parents" (PTDC/MHC-PCL/4824/2012).

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