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DISPOSITIONAL MINDFULNESS, SELF-CONCEPT AND PSYCHOLOGICAL SYMPTOMS: BIDIRECTIONAL PREDICTIVE ASSOCIATIONS IN CHILDREN AND ADOLESCENTS

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Abstract

Several studies have indicated that dispositional mindfulness (DM) predicts better mental health in adolescents. The current study expands previous research by examining the reciprocal longitudinal associations between DM facets and psychological problems. In addition, the potential mediating role of self-concept (SC) dimensions is examined. A sample of 832 adolescents aged between 11 and 18 completed measures of DM, SC, and internalizing and externalizing problems in two waves six months apart. DM did not predict changes in psychological problems. However, in general, psychological problems predicted lower DM, some facets of DM predicted an increase in SC dimensions, and SC predicted higher scores on DM and fewer externalizing problems. In addition, acting with awareness mediated the relationship between externalizing problems and two SC dimensions. Findings highlight the beneficial role of having a positive SC for some dimensions of DM, and vice versa.

KEY WORDS: *dispositional mindfulness, internalizing symptoms, externalizing symptoms, self-concept, children, adolescents*.

Resumen

Varios estudios han indicado que la atención plena (*mindfulness*) disposicional (APD) predice una mejor salud mental en los adolescentes. El presente estudio amplía la investigación previa al examinar las asociaciones longitudinales recíprocas entre las facetas de MD y los problemas psicológicos. Además, se examina el posible papel mediador de las dimensiones de autoconcepto (AC). 832 adolescentes de entre 11 y 18 años completaron medidas de MD, AC y problemas interiorizados y exteriorizados en dos tiempos de medida separados por seis meses. La APD no predijo cambios en problemas psicológicos. Sin embargo, los problemas psicológicos predijeron en general niveles más bajos de APD, algunas facetas de APD predijeron un aumento en las dimensiones de AC, y AC predijo mayores niveles de APD y menos problemas exteriorizados. Además, actuar con conciencia medió la relación entre los problemas exteriorizados y dos dimensiones de AC. Los resultados destacan el papel beneficioso de tener un AC positivo para algunas dimensiones de APD, y viceversa.

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PALABRAS CLAVE: *atención plena disposicional, síntomas interiorizados, síntomas exteriorizados, autoconcepto, niños, adolescentes*.

Introduction

Adolescence is a critical period of change, in which some adolescents develop psychological internalizing and externalizing problems (Compas et al., 1989; Kim et al., 2003). Therefore, it is important to identify resilience factors that prevent the development of psychological problems in youth.

Dispositional Mindfulness (DM) has been defined as *the consciousness that emerges through paying attention intentionally in the present moment, and in a nonevaluative way, to things as they are* (Williams et al., 2007, p. 47). DM is a capacity that everyone can have to a greater or lesser extent (Brown & Ryan, 2003). DM can be beneficial and act as a protector against the development of several psychological problems (e.g., Tomlinson et al., 2018; Valiente-Barroso et al., 2021). Although there are few studies with adolescent samples, the protective nature of DM in youth has also been found (e.g., Calvete et al., 2014; Calvete, Morea, et al., 2018; Ciesla et al., 2012; Cortazar & Calvete, 2019).

DM is a complex construct that involves several facets (Baer et al., 2006; Bishop et al., 2004; Cortazar et al., 2020). For instance, Baer et al. (2006) found that DM was composed of five dimensions that involve different capacities such as: *Observing*: noticing sensations, perceptions, thoughts, and feelings; *Describing:* labeling internal experience with words; *Acting with awareness*: focusing on the present without distractions; *Non-judging of inner experience*: not judging one's own internal experience; and *Non-reactivity to inner experience*: not reacting to internal experience.

Following the multifaceted conceptualization of DM, a few longitudinal studies have examined the associations between the above dimensions and psychological problems in adolescents, with mixed results. Most studies indicate that Acting with awareness predicts fewer internalizing (e.g., Calvete, Morea, et al., 2018; Ciesla et al., 2012; Cortazar & Calvete, 2019; Royuela-Colomer & Calvete, 2016) and externalizing problems (e.g., Cortazar & Calvete, 2019) and that Non-reactivity predicts less depression over time (Royuela-Colomer & Calvete, 2016). The results for Observing are inconclusive. A previous study indicated that this facet predicts fewer externalizing symptoms (Cortazar & Calvete, 2019). However, several studies indicate that Observing can be maladaptive in non-meditator youth samples (e.g., Royuela-Colomer & Calvete, 2016). Finally, regarding the Non-judging and Describing facets, neither of them directly predicted less depression (Ciesla et al., 2012; Cortazar & Calvete, 2019) or fewer externalizing symptoms (Cortazar & Calvete, 2019).

Although the above studies provide results about the predictive role of DM in psychological problems in youth, very few studies have evaluated the reciprocal associations between these variables. That is, some DM facets can predict lower levels of psychological problems but, at the same time, psychological problems could predict lower levels of DM. Such reciprocal relationships can be expected

from theoretical approaches that highlight the reciprocal influences between psychological symptoms, vulnerabilities, and resilience factors (Hankin & Abramson, 2001; Masten et al., 2005). Although most of the studies have focused on bidirectional associations between vulnerabilities and symptoms, bidirectional associations between psychological problems and resilience factors have also been proposed (Calvete, Las Hayas, et al., 2018). Research on this topic in relationship with DM facets is scarce and mixed. For example, Petrocchi and Ottaviani (2016) examined longitudinal relationships between DM facets and depressive symptoms in university students, finding that depressive symptoms at baseline were negatively related to some DM facets at follow-up (i.e., Describing and Non-judging). In the same line, Raphiphatthana et al. (2016) evaluated longitudinal reciprocal predictions of three psychological problems (i.e., negative affect, hyperarousal, and anhedonia) and DM facets in university students. They found that, in addition to a significant negative predictive path from Acting with awareness to anhedonia, negative affect predicted less Non-reactivity and Non-judging one month later. The longitudinal study by Elhai et al. (2018) found that depression/anxiety sensitivity predicted less Acting with awareness (measured by the Mindful Attention Awareness Scale; Brown & Ryan, 2003). Finally, Jury and Jose (2018) found that depressive symptoms predicted an increase of general DM from Time 2 to Time 3 but not from Time 1 to Time 2. These previous results together show an unclear view of the potential reciprocity between DM and psychological problems.

Another issue to elucidate refers to the mechanisms by which DM protects one from psychological problems. Rumination and emotion regulation have been the focus of several studies. For example, some longitudinal studies have found that rumination mediated the relationship between some DM facets and depressive symptoms in adults (Jury & Jose, 2018) and adolescents (Ciesla et al., 2012; Royuela-Colomer & Calvete, 2016). Another variable that could mediate the relationship between DM and psychological problems is self-concept (SC) (Crescentini & Capurso, 2015). SC is an individual's perception of him/herself (Shavelson et al., 1976), and it is a potential component for affective and behavioral regulation (Markus & Wurf, 1987). SC is a complex construct, which has many dimensions (Linville, 1987; Markus & Nurius, 1986), including academic, physical, and social SC (Esnaola, et al., 2008; Garcia & Musitu, 1999; Shavelson et al., 1976). In previous studies, adolescents who had received a mindfulness-based intervention obtained better scores in several measured SC dimensions in comparison with those who did not receive this intervention (Franco et al., 2011; Gómez-Odriozola et al., 2019). Studies on the mediating role of SC in the relationship between DM and psychological problems are scarcer. Self-esteem is an affective or evaluative component of SC that defines how the person feels about him/herself. Cross-sectional studies have found that self-esteem partially mediated the relationships between Acting with awareness and anxiety and depressive symptoms (Bajaj, Robins, et al., 2016), between Acting with awareness and positive affect, negative affect, and mental well-being in university students (Bajaj, Gupta, et al., 2016), and between general DM and impulsive behavior (Dhandra, 2020). However, longitudinal evidence is necessary to determine the potential role

of self-concept in the association between mindfulness and psychological problems. Moreover, the role of self-concept as a predictor of mindfulness remains unexplored. Just as the relationships between mindfulness and psychological problems can be reciprocal, mindfulness and self-concept could show two-way relationships, with mindfulness predicting a more positive self-concept and a more positive self-concept predicting better mindfulness skills.

The first aim of this study was to longitudinally examine bidirectional relationships between DM facets and internalizing and externalizing problems. In keeping with the findings of previous studies, DM facets were expected to predict fewer internalizing and externalizing problems. In addition, internalizing and externalizing problems were expected to predict lower DM facets.

The second aim was to examine whether the associations between DM facets and psychological problems were accounted for by SC dimensions. Considering previous research that evaluated the role of self-esteem, it was expected that SC dimensions would mediate the relationship between DM and psychological problems. Finally, reciprocal predictive associations between DM facets and SC dimensions were explored. It was hypothesized that these associations would be bidirectional.

Method

Participants

The initial sample comprised 832 children and adolescents aged between 11 and 18 *($M_{age=}$* 14.66 years, *SD*= 1.75). Of this sample, 655 participants (338 girls, 51.6%) completed the measures six months later (retention rate= 78.73%). The participants were pupils at six urban schools (four public and two private) in Araba and Bizkaia (Spain). Their socioeconomic level was calculated following the criterion recommended by the Spanish Society of Epidemiology (2000), with the following results: 13.3% low, 15.5% low-medium, 29.1% medium, 16.3% high-medium, and 25.7% high.

Instruments

a) *Five Facet Mindfulness Questionnaire* (FFMQ; Baer et al., 2006). DM was assessed with the Spanish version of the FFMQ adapted to adolescents (FFMQ-A; Royuela-Colomer & Calvete, 2016). The FFMQ is a self-administered questionnaire that measures the five facets of mindfulness through 39 items, rated on a Likert scale ranging from 1 (*never or rarely true)* to 5 (*very often or always true)*. The facets include: Observing (eight items; e.g., "I pay attention to sounds, such as clocks ticking, birds chirping, or cars passing "), Describing (eight items; e.g., "I can easily put my beliefs, opinions, and expectations into words"), Acting with awareness (eight items; e.g., reverse-scored item: "When I do things, my mind wanders off and I'm easily distracted"), Non-judging (eight items; e.g., one reverse-scored item: "I criticize myself for having irrational or inappropriate emotions"), and Non-reactivity (seven items; e.g., "I

perceive my feelings and emotions without having to react to them"). Cronbach's alpha coefficients were: Observing α= .75, .79; Describing α= .75, .77; Non-judging α= .86, .88; Acting with awareness α= .82, .86; Non-reactivity α= .68, .72, at Time 1 (T1) and Time 2 (T2), respectively.

b) *Self-Concept Form 5* (AF5; Garcia & Musitu, 1999)**.** SC was assessed using the AF5 in the version of Cerrato et al. (2011), which assesses: Academic SC (six items; e.g., "I do my homework well"), Social SC (six items, with two reverse-scored items; e.g., "I make friends easily"), Family SC (six items, with two reverse-scored items; e.g., "I feel that my parents love me"), and Physical SC (six items; e.g., "I take good care of my physical health"). Although the original questionnaire uses a scale between 1 and 99 points, in this study, the items were rated on a Likert scale ranging from 1 (*never or almost never)* to 5 (*always or almost always)* to unify the response style with that of the other questionnaires used in the study. Cronbach's alpha coefficients were: academic SC α= .88, .89; social SC α= .66, .69; family SC α= .86, .85; physical SC α= .82, .82, at T1 and T2, respectively.

c) *Youth Self- Report* (YSR; Achenbach & Rescorla, 2001). Internalizing and externalizing symptoms were assessed using a Spanish adaptation of the YSR (Sandoval et al., 2006). The YSR is a self-administered questionnaire that measures different symptoms through 113 items, which are answered on a scale ranging from 0 *(not true in the last six months*) to 2 (*very often or often true in the last six months*). Two large subscales were used to conduct this study: internalizing symptoms (somatic complaints and anxious/depressed symptoms; 23 items), and externalizing symptoms (aggressive behavior and rule-breaking behavior; 32 items). In the present study, Cronbach's α coefficients were: internalizing symptoms α= .85 (T1) and .84 (T2), and externalizing symptoms α= .89 (T1 and T2).

Procedure

After obtaining the directors' approval, the children's parents were notified with an informed consent to authorize or reject the participation of their children in the study. Only 10 parents (1.21%) did not give their consent. Responses were anonymous and a code known only by the participant was used to link their answers over the two waves of the study. The participants completed the measures in the classroom, taking between approximately 40 and 60 minutes to complete them. To ensure clear understanding of the questions, there was always a researcher present in the classroom during data collection. Preacher & Coffman's (2006) calculator was used in order to do a power analysis. The power in the present study was 99.8% for a sample of 832 participants. The Ethics Committee of the University of Deusto approved this study.

Data analyses

Little's MCAR test indicated that missingness was not random, $\chi^2(265)= 429$, $p< .001$. Those who did not participate in the second wave scored lower on Acting with awareness ($t= 3.09$, $p= .002$, $d= 0.26$), Non-judging ($t= 3.42$, $p< .001$, $d= 0.29$), Academic SC ($t= 5.00$, $p< .001$, $d= 0.43$), and Family SC ($t= 3.34$, $p= .001$, $d= 0.30$) and higher on externalizing ($t= -5.54$, $p< .001$, $d= -0.52$) and internalizing symptoms ($t= -2.70$, $p= .007$, $d= -0.23$) and age ($t= -9.11$, $p< .001$, $d= -0.77$). Therefore, we used the Full Information Maximum Likelihood (FIML) method to manage missing values with LISREL 8.8. The hypothesized model included cross-sectional associations between all the study variables at T1 and T2, autoregressive paths from the variables at T1 to the same variables at T2, and cross-lagged predictive paths from T1 to T2 variables.

The goodness-of-fit model was evaluated using the comparative fit index (CFI), the non-normative fit index (NNFI), and the root mean square error of approximation (RMSEA). Generally, CFI and NNFI values of .90 or higher reflect a good fit, and RMSEA values lower than .06 indicate an excellent fit (Hu & Bentler, 1999). All data are available at the Open Science Framework (https://osf.io/9m3bv/).

Results

Descriptive statistics and correlation coefficients

Table 1 displays the descriptive statistics, correlations, and cross-sectional covariance coefficients between all the variables of the study. DM facets were in general negatively associated with internalizing and externalizing symptoms at T1 and T2, except for Observing, which was positively associated with internalizing symptoms. At the same time, the DM facets were in general positively associated with SC dimensions; and the SC dimensions were negatively associated with internalizing and externalizing symptoms at T1 and T2.

Predictive model

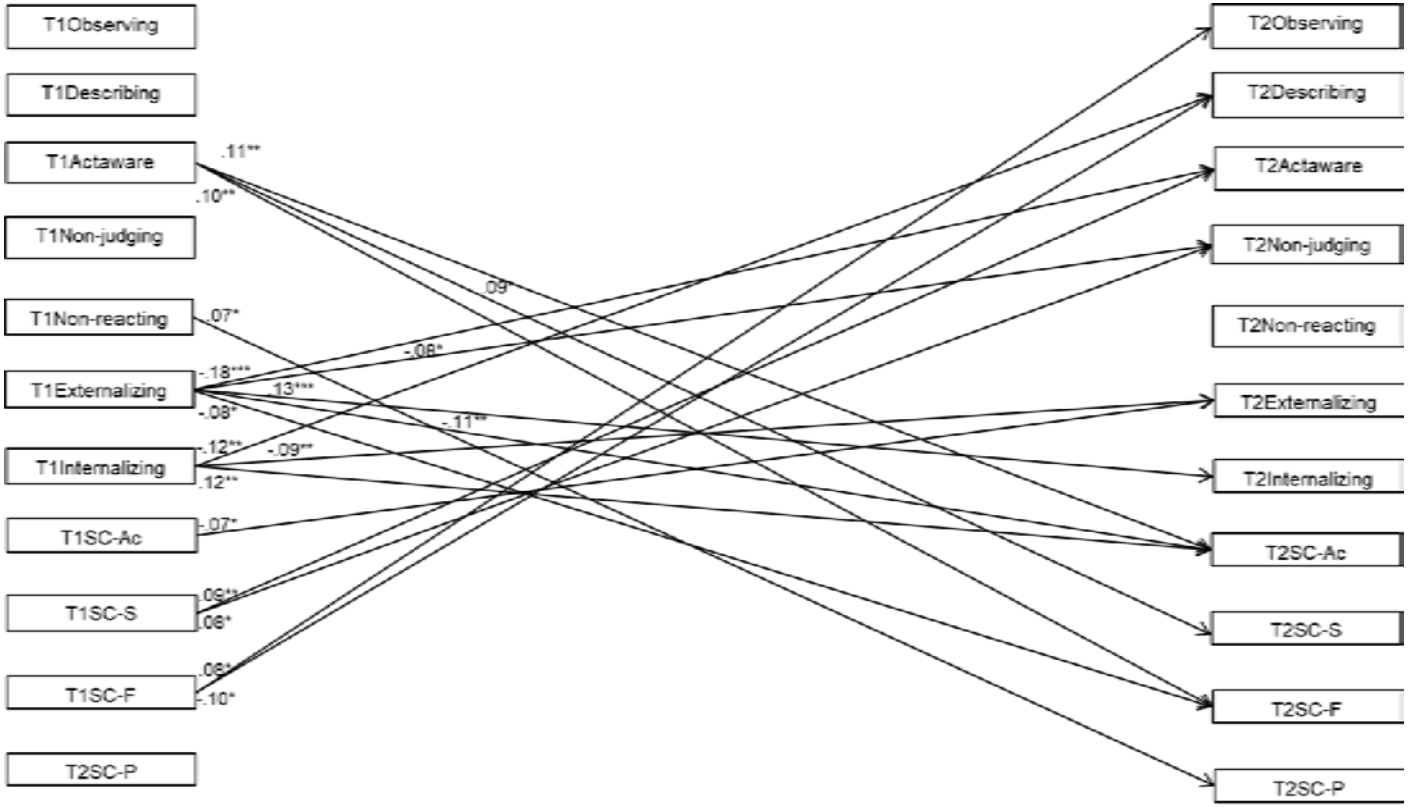
At the longitudinal level, all the autoregressive paths were statistically significant, indicating the stability of these variables over the six-month follow-up, and were: .56, .50, .54, .55, .45, .81, .55, .57, .54, .54 and .68 for Observing, Describing, Acting with awareness, Non-judging, Non-reacting, Externalizing symptoms, Internalizing symptoms, Academic SC, Social SC, Family SC and Physical SC, respectively. Figure 1 displays the cross-lagged regressive coefficients of the model that were statistically significant. The DM facets did not directly predict psychological problems over time. However, externalizing symptoms predicted less Acting with awareness and Non-judging, and internalizing symptoms predicted less Describing.

Table 1
Descriptive statistics, correlation and cross-sectional covariance coefficients between all the study variables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
1.T1O	1	.22**	-.10**	-.27**	.41**	.04	.13**	.11**	.05	.06	.06											
2.T1D	.23**	1	.26**	.16**	.36**	-.09*	-.17**	.22**	.23**	.15**	.27**											
3.T1AA	-.10**	.26**	1	.40**	-.04	-.43**	-.35**	.47**	.20**	.31**	.29**											
4.T1NJ	-.27**	.16**	.40**	1	-.11**	-.32**	-.47**	.19**	.14**	.26**	.25**											
5.T1NR	.41**	.36**	-.04	-.11**	1	-.02	-.02	.15**	.10**	.09*	.17**											
6.T1Ext	.04	-.09*	-.43**	-.33**	-.02	1	.46**	-.44**	-.09*	-.45**	-.24**											
7.T1Int	.14**	-.17**	-.35**	-.47**	-.02	.46**	1	-.17**	-.27**	-.31**	-.36**											
8.T1SC-A	.11**	.22**	.47**	.18**	.16**	-.45**	-.16**	1	.26**	.45**	.42**											
9.T1SC-S	.05	.23**	.20**	.14**	.11**	-.08*	-.27**	.26**	1	.35**	.43**											
10.T1SC-F	.06	.15**	.31**	.26**	.09**	-.44**	-.30**	.45**	.35**	1	.36**											
11.T1SC-P	.07	.27**	.28**	.24**	.18**	-.24**	-.35**	.41**	.43**	.36**	1											
12.T2O	.60**	.14**	-.05	-.19**	.30**	.02	.12**	.11**	-.01	.07	.06	1	.12**	-.13**	-.25**	.24**	.04	.15**	.01	-.01	-.01	.02
13.T2D	.15**	.57**	.24**	.19**	.29**	-.15**	-.23**	.21**	.19**	.10*	.24**	.20**	1	.02	.01	.20**	-.03	-.04	.07**	.05*	.04	.04
14.T2AA	-.02	.19**	.64**	.32**	.03	-.41**	-.30**	.37**	.19**	.23**	.23**	-.15**	.21**	1	.22**	-.12**	-.10**	-.11**	.12**	.06*	.11**	.06**
15.T2NJ	-.19**	.14**	.29**	.62**	-.04	-.27**	-.36**	.18**	.17**	.19**	.18**	-.37**	.16**	.45**	1	-.16**	-.09**	-.21**	.07**	.07**	.12**	.07**
16.T2NR	.29**	.30**	.05	.01	.50**	-.13**	-.11**	.17**	.06	.13**	.14**	.42**	.40**	-.05	-.14**	1	.01	.01	-.01	-.07*	-.09**	-.03
17.T2Ext	.01	-.09*	-.37**	-.22**	-.07	.78**	.29**	-.39**	-.07	-.35**	-.19**	.05	-.14**	-.43**	-.29**	-.10*	1	.20**	-.12**	-.07**	-.11**	-.08**
18.T2Int	.10*	-.14**	-.25**	-.33**	-.03	.38**	.64**	-.13**	-.21**	-.28**	-.29**	.23**	-.21**	-.33**	-.46**	-.06	.47**	1	-.07**	-.11**	-.12**	-.13**
19.T2SC-A	.14**	.20**	.39**	.11**	.18**	-.33**	-.06	.65**	.16**	.31**	.29**	.12**	.23**	.40**	.17**	.14**	-.42**	-.13**	1	.20**	.20**	.21**
20.T2SC-S	.03	.18**	.21**	.15**	.08*	-.10*	-.23**	.25**	.57**	.31**	.35**	-.01	.21**	.24**	.19**	.00	-.15**	-.28**	.35**	1	.25**	.24**
21.T2SC-F	.04	.13**	.27**	.15**	.08	-.34**	-.23**	.32**	.20**	.60**	.22**	.05	.13**	.30**	.22**	.02	-.38**	-.30**	.43**	.44**	1	.19**
22.T2SC-P	.08*	.20**	.23**	.22**	.19**	-.18**	-.25**	.26**	.30**	.27**	.71**	.06	.21**	.24**	.21**	.09*	-.22**	-.33**	.40**	.47**	.35**	1
M	2.82	3.16	3.50	3.67	2.71	0.35	0.42	3.56	3.80	4.28	3.42	2.72	3.20	3.54	3.80	2.67	0.31	0.39	3.59	3.84	4.33	3.46
SD	0.74	0.67	0.75	0.82	0.65	0.26	0.29	0.88	0.69	0.80	0.88	0.76	0.68	0.77	0.83	0.67	0.24	0.28	0.89	0.69	0.76	0.88
N	830	830	830	830	830	828	828	795	793	792	792	651	651	651	651	651	652	652	640	640	640	640

Notes: O=Observing; D=Describing; AA=Acting with awareness; NJ=Non-judging; NR=Non-reactivity; SC-A=Academic self-concept; SC-S=Social self-concept; SC-F=Family self-concept; SC-P=Physical self-concept. Values over the diagonal represent the cross-sectional covariance standardized coefficients obtained in the path analysis; * p< .05, ** p< .01.

Figure 1
Statistically significant longitudinal paths between facets of mindfulness, externalizing and internalizing symptoms, and self-concept



Notes: SC-A=Academic self-concept; SC-S=Social self-concept; SC-F=Family self-concept; SC-P=Physical self-concept. Given values are standardized coefficients. *p< .05; **p< .01; ***p< .001.

Regarding the role of SC, Acting with awareness predicted an increase in Academic, Social and Family SC, and Non-reacting predicted an increase in Physical SC. At the same time, Academic SC predicted fewer externalizing symptoms. Externalizing symptoms predicted lower Academic and Family SC, and internalizing symptoms predicted higher Academic SC. Finally, Social SC predicted higher Acting with awareness and Non-judging, and Family SC predicted higher Observing and less Describing. A more parsimonious model was estimated excluding non-significant paths, with excellent fit indexes: FIML $\chi^2(32, N= 832)= 71$, $p< .001$, RMSEA= .038 (90% CI [.026, .050]), NNFI= .957, and CFI= .995. The model explained 34, 33, 44, 39, 23, 65, 43, 46, 35, 38, and 49% of the variance, respectively, of Observing, Describing, Acting with awareness, Non-judging, Non-reacting, externalizing symptoms, internalizing symptoms, Academic SC, Social SC, Family SC, and Physical SC at T2.

Furthermore, the above results suggest that Acting with awareness could mediate the relationship between externalizing problems and Academic and Family SC as externalizing problems predicted lower Acting with awareness and Acting with awareness predicted higher Academic and Family SC. The results of the Sobel test (1982) confirmed the significance of these mediational associations ($z= -2.58$, $p= .01$; $z= -2.36$, $p= .02$, respectively, for Academic and Family SC).

Discussion

Some theoretical models of psychopathology propose that the associations between psychological problems, vulnerability, and protective factors may be bidirectional (Masten et al., 2005). This study explored bidirectional associations between psychological symptoms, DM, and SC in children and adolescents.

In contrast to previous studies (Calvete, Morea, et al., 2018; Ciesla et al., 2012; Cortazar & Calvete, 2019; Royuela-Colomer & Calvete, 2016), in the present study, the DM facets did not predict changes in psychological problems over time. However, psychological problems predicted a decrease in some facets of DM. Specifically, internalizing symptoms predicted less describing, and externalizing symptoms predicted less Acting with awareness and Non-judging. The results for internalizing symptoms are consistent with the previous study carried out by Petrocchi and Ottaviani (2016). However, some studies also found negative predictions of internalizing symptoms for other DM facets, such as Non-judging (Raphiphatthana et al., 2016), Acting with awareness (Elhai et al., 2018) and Non-reacting (Raphiphatthana et al., 2016). Overall, all these results suggest that when children and adolescents experience internalizing and externalizing symptoms, their mindfulness ability could be affected. Thus, they would have more difficulty describing their feelings, acting consciously, and accepting situations as they are.

Furthermore, this study adds information about the longitudinal associations between SC and DM. Some facets of DM (i.e., Acting with awareness and Non-reacting) predicted an increase in SC dimensions. These results are consistent with previous experimental studies in which higher scores were found in all SC dimensions after a mindfulness-based intervention (Franco et al., 2011; Gómez-Odriozola et al., 2019) and in cross-sectional studies that found significant

associations between DM and self-esteem (Bajaj, Gupta, et al., 2016; Bajaj, Robins, et al., 2016). Importantly, the present study extends current knowledge regarding the bidirectionality of these relationships, indicating that in general SC also predicts higher scores in DM. Specifically, Social SC predicted an increase in Acting with awareness and Non-judging. However, in contrast with the results for Social SC, Family SC played a mixed role, as it predicted an increase in Observing and a reduction of Describing. This result was unexpected because Describing is considered to be beneficial, whereas Observing is considered to play a role that is not beneficial in non-meditating samples.

As mentioned, although DM facets were cross-sectionally significantly associated both with internalizing and externalizing problems, they did not predict changes in psychological problems in this study. Therefore, the hypothesis that SC could mediate the predictive association between DM and psychological problems was not supported. However, externalizing problems predicted a decrease in Academic and Family SC through the mediation of decreased Acting with awareness. Moreover, externalizing problems were predicted by lower Academic SC, which suggests that children and adolescents with academic difficulties are at risk of developing externalizing problems (Moilanen et al., 2010).

Several limitations of the present study should be mentioned. First, only self-report measures were used for data collection, so it would be appropriate to add other methods such as, for example, parents or teacher's reports. Second, the rate of missingness was high, particularly among those participants who presented more psychological symptoms. This may be because the students changed grades between the first and second time of measurement, and it is to be expected that those adolescents with greater psychological problems may be those with higher rates of truancy, repeating grades, or even changing schools (McCarty et al., 2008). Although we used the FIML to manage missing values, future studies should improve the follow-up of the participants over time. Third, the present study focused on the contents of SC, that is, on the different SC dimensions. It would be interesting to add information measuring the structure of SC, that is, how the contents of the SC are organized (Campbell et al., 2003). Not only could the dimensions that are more beneficial for adolescents be evaluated, but also the importance of the organization of these domains (Hanley & Garland, 2017). Finally, the study only included two waves and three waves are preferable for mediational analyses (Cole & Maxwell, 2003).

Despite the limitations, this study also has some strengths. First, it is based on a multidimensional perspective of mindfulness and SC, so it allows evaluating specific associations between the dimensions of the two variables. In addition, this is one of the few studies that examines the associations between DM facets and externalizing problems. Moreover, the study extends previous research on DM by examining longitudinal and bidirectional relationships between the variables. This way, it adds new data to recursive models of psychopathology (Hankin & Abramson, 2001; Masten et al., 2005).

In conclusion, the present study's findings contrast with those obtained in previous works, indicating that DM facets are not predictors of changes in psychological problems in children and adolescents. Instead, findings suggest that

psychological problems predict poorer DM facets. In addition, some DM facets predicted an increase in SC dimensions. Furthermore, the results suggest that decreased Acting with awareness could mediate the relationship between externalizing problems and Academic and Family SC. In general, SC also predicts higher scores in DM and fewer externalizing problems, showing the beneficial role of having a positive SC for some dimensions of DM, and vice versa.

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