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The role of emotion regulation in the relationship between empathy and internalizing symptoms in college students

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ABSTRACT

Empathy is the ability to adopt another person's perspective and experience the thoughts and emotions of that individual. Existing literature has demonstrated that high levels of affective empathy may represent a risk factor for the development of internalizing symptoms in college students. The mechanisms underlying the possible relationship between empathy and psychopathology, however, are not yet understood. This study aimed to examine difficulties in emotion regulation as one possible mediator of the relationship between empathy and internalizing symptoms in a large sample of college students. Six hundred and sixteen male and female college students completed a series of self-report questionnaires measuring empathy, difficulties in emotion regulation, and symptoms of depression, anxiety, and stress. Findings revealed that difficulties in emotion regulation mediated the relationship between affective empathy and internalizing symptoms, after controlling for participants' year in college and gender. These results suggest that the development and practice of emotion regulation skills in college students may represent one important component of skill-oriented preventive interventions and health promotion programs buffering against the development of internalizing symptoms in those young adults who tend to demonstrate high levels of affective empathy.

Empathy can be defined as one's ability to adopt another person's perspective and experience the thoughts and emotions of that individual (Davis, 1996). Recent research suggests that empathy is a multi-faceted construct involving two major domains: cognitive empathy and affective empathy. Cognitive empathy involves an individual's ability to imagine another person's perspective and requires an accurate understanding of what that person is thinking or feeling (Birnie, Speca, & Carlson, 2010). In contrast, affective empathy is conceptualized as an individual's ability to connect with another person's emotional state (Birnie et al., 2010). In affective empathy, the empathizing individual may take on the other person's emotions and experience those emotions him or herself (Davis, Luce, & Kraus, 1994). Thus, whereas cognitive empathy is characterized by accurately adopting another person's perspective, the capacity to affectively empathize is defined by one's emotional response, triggered by another individual's emotional experience. Neurobiological research demonstrates that cognitive and affective empathy represent two distinct neural systems with separate anatomical substrates (Morelli, Rameson, & Lieberman, 2014; Nummenmaa, Hirvonen, Parkkola, & Hietanen, 2008; Shamay-Tsoory, Aharon-Peretz, & Perry, 2009), suggesting that these domains of empathy can be understood as unique processes and should be examined individually.

Empathy has long been viewed as a desirable characteristic, positively associated with prosocial and compassionate behaviors, as well as adaptive interpersonal functioning, and negatively associated with aggressive acts, behavioral problems, and major depressive disorder (e.g., Chow, Ruhl and Buhrmester (2013), Cusi, MacQueen, Spreng and McKinnon (2011), Spinella, (2005), Verhofstadt, Buysse, Ickes, Davis and Devoldre (2008)). However, recent literature suggests that the relationship between empathy and mental health is complex. Whereas some research has demonstrated negative associations between empathy and mental health problems (e.g., Chow et al. (2013), Spinella (2005); Verhofstadt et al. (2008)), other studies have failed to find relationships between certain domains of empathy and psychopathology (e.g., Hughes, Gullone and Watson (2011)), and still other research suggests that dimensions of affective empathy, specifically, represent risk factors for the development of internalizing disorders, including depression and anxiety (Blair, 2005; Gambin & Sharp, 2016, 2018; Gawronski & Privette, 1997; Neumann, Chan, Wang, & Boyle, 2016; Schreiter, Pijnenborg, & Rot, M., 2013; Shu, Hassell, Weber, Ochsner, & Mobbs, 2017; Silton & Fogel, 2010; Thoma et al., 2011; Tone & Tully, 2014; Zahn-Waxler, Cole, & Barrett, 1991). In their work,

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Tone & Tully (2014) describe empathy as a "risky strength," wherein moderate levels of empathy are psychologically adaptive, but both low and high levels of empathy, along with cognitive dysregulation, may be associated with depressive symptoms (Tully, Ames, Garcia, & Donohue, 2016).

The theoretical and empirical literature supporting a positive link between primarily affective empathy and internalizing symptoms points to certain situations, or specific kinds of empathic reactions, that may be associated with symptoms of depression, anxiety, and/or stress in some individuals. The conditions under which an empathizer may experience symptoms of depression, anxiety, or stress, include: (a) when the other individual's distress is extremely aversive; (b) when the empathizer takes on the other individual's perspective to an excessive degree; (c) when the empathizer ruminates about his/her own role in the other individual's distress; or (d) when the empathizer experiences negative thoughts or feelings of guilt when confronted by the other individual's distress (Gambin & Sharp, 2016; Tone & Tully, 2014). Additionally, some researchers argue that an empathizer's excessive sensitivity to an individual's distress may in part contribute to vulnerability to psychopathology (Zahn-Waxler, Cole & Barrett, 1991). Personal distress (alternatively labeled empathic distress or empathic stress) is an affective empathy response conceptualized as the self-focused distress that some individuals experience in response to others' suffering and which, in turn, may be associated with internalizing symptoms. Specifically, when empathizing individuals experience personal distress, they take on the other person's negative affect to an excessive degree, often resulting in depression, anxiety, and withdrawal from interpersonal situations (Gambin & Sharp, 2016, 2018; Grynberg, Luminet, Corneille, Grèzes, & Berthoz, 2010; Neumann et al., 2016; O'Connor, Berry, Weiss, & Gilbert, 2002; Zahn-Waxler & Van Hulle, 2012; for a review, see Schreiter et al., 2013).

To illustrate the way in which certain affective empathic reactions may be positively associated with internalizing symptoms, we may imagine a college student's reaction in observing a peer confronting a difficult interpersonal situation. The empathic observer may respond in a variety of ways. In one scenario, the student imagines how the peer feels, viewing the situation from the peer's perspective, which results in empathic concern and prosocial altruistic behaviors directed towards the peer (Batson, 2009). In a second scenario, the student imagines how he or she would respond in the peer's situation, or how the student has experienced these situations in the past, either of which may result in the observer experiencing emotional pain him/herself. In the latter case, the observer has personally adopted the other individual's distress (Batson, 2009), initiating the experience of personal distress, which may trigger the empathizer to withdraw from the peer interaction and possibly from future potentially distressing interpersonal situations. These feelings and the resulting isolation may lead to symptoms of depression, anxiety, or guilt (Gambin & Sharp, 2016; Klimecki & Singer, 2012; Schreiter et al., 2013; Tone & Tully, 2014).

Despite literature supporting a positive association between affective empathy and internalizing symptoms (e.g., Tully et al., 2016), particularly in situations in which the empathizer seems overly identified with the emotional experience of the other individual, the mechanisms of this relationship are not well-understood. Emotion regulation, defined as the process of initiating, modulating, inhibiting, and maintaining one's emotions, may mediate the association between empathy and internalizing symptoms in college students. The constructs of empathy and emotion regulation share a central focus of emotional understanding. Empathy is defined by one's accurate understanding of others' emotional experiences, in some cases adopting another individual's perspective, and in emotion regulation, understanding one's own emotions is a necessary precondition to the ability to control one's emotional expression (Frith & Frith, 2003).

The connection between heightened, perhaps excessive, empathy and emotion dysregulation in some individuals may be understood through the lens of affective empathy. Specifically, an empathizing individual's intense negative emotional reaction triggered by a strong affective empathic connection with an individual in distress, suggests emotional dysregulation in the empathizer. The empathizer in this situation is demonstrating difficulty appropriately inhibiting or modulating his or her negative emotional reaction to the other individual's distress (Kaźmierczak, Pastwa-Wojciechowska, & Błażek, 2013). As such, excessive affective empathy, prompting personal distress, could be hypothesized to trigger emotional dysregulation, which in turn could result in internalizing symptoms. However, whereas existing literature has documented an association between deficits in empathy and emotional dysregulation (Davidson, Putnam, & Larson, 2000; Konstantareas & Stewart, 2006; Samson, Huber, & Gross, 2012), and theoretical literature has argued that heightened empathy may result in emotion dysregulation (Schipper & Petermann, 2013), few empirical studies have examined the possible indirect effect of empathy on internalizing symptoms through poor emotion regulation, despite calls for research investigating these relationships (Schipper & Petermann, 2013).

In contrast to the limited empirical research investigating the relationship between empathy and emotion dysregulation, there is a substantial body of literature supporting the relationship between emotional dysregulation and internalizing psychopathology (e.g., Cole, Luby, & Sullivan (2008), McLaughlin, Hatzenbuehler, Mennin and Nolen-Hoeksema (2011)), including depression (Aldao, Nolen-Hoeksema, & Schweizer, 2010; Berking & Wupperman, 2012), anxiety (Martin & Dahlen, 2005; McLaughlin et al., 2011), and stress (Martin & Dahlen, 2005). Some literature, including a recent meta-analysis (Aldao et al., 2010), suggests that maladaptive emotion regulation strategies are even more positively predictive of internalizing symptoms (e.g., depression and anxiety), than healthy emotion regulation strategies are negatively predictive of internalizing symptoms (Aldao & Nolen-Hoeksema, 2012; Aldao et al., 2010). Individuals who display poor emotion regulation skills are more likely than others to ruminate on negative thoughts and feelings, experience guilt, and engage in poor cognitive reappraisal, leading, perhaps, to symptoms of anxiety and depression (Cisler, Olatunji, Feldner, & Forsyth, 2010; Ehring, Tuschen-Caffier, Schnülle, Fischer, & Gross, 2010).

Given theoretical and empirical support for the association between affective empathy and emotion dysregulation, as well as for the link between emotion dysregulation and internalizing symptoms, emotion regulation difficulties mediate the relationship between affective empathy and internalizing symptoms in college students. An individual's excessive empathy may predict difficulty modulating emotional reactions to others' distress, which may in turn be associated with the empathizer feeling depressed or anxious (Tully et al., 2016).

These questions are of particular importance at this time, as colleges and universities are documenting increased rates of mental health problems among their students (Marcotte & Levesque, 2018). Evidence suggests that these are global trends; researchers and clinicians from institutions of higher education across the world are recording greater symptoms of depression, anxiety, and substance use disorders among their college and university students (Holm-Hadulla & Koutsoukou-Argyraki, 2015; Prince, 2015). These impairments are particularly concerning given that mental health problems in college have been shown to negatively impact students' academic success (Prince, 2015). Further, these difficulties have far-reaching implications, as psychopathology in emerging adulthood increases the risk of problems later in life (Ferdinand, Blüm, & Verhulst, 2001). Research in this area suggests that mental health problems during college could contribute to a negative psychological trajectory long-term. Despite increased rates of mental health problems among college students, the literature indicates that preventive interventions and skill building health promotion efforts among the college student population are underdeveloped (Conley, Durlak, & Dickson, 2013).

Taken together, further research is warranted to examine whether emotion dysregulation may help partially explain the relationship between empathy and internalizing symptoms in college students. If

supported, emotion regulation skills could represent one specific, critical target of prevention and intervention efforts among college students. The current study aims to contribute to and extend existing literature by examining the relationships among cognitive and affective empathy, emotion regulation difficulties, and internalizing symptoms – comprising symptoms of depression, anxiety, and stress – in a sample of college students. Drawing on previous literature, we hypothesized that affective empathy would affect internalizing symptoms indirectly through emotion regulation. Specifically, we predicted that higher levels of affective empathy would be associated with greater emotion regulation difficulties, which, in turn, would predict higher levels of internalizing symptoms. Our model predicted that difficulties with emotion regulation would partially explain the relationship between affective empathy, specifically, and internalizing symptoms.

1. Methods

1.1. Participants

Six hundred and sixteen college students participated in this study. To be eligible to participate in the study, students were required to: (1) be over the age of 18, and (2) be currently enrolled in a small, liberal arts college in either Boston, MA or Georgetown, KY, where the study took place. Almost 82% of the sample was female (N = 502; 81.5%). The average age of participants was 19.24 years (SD = 1.37). Nearly half of the participants were freshmen in college (48.4%; N = 298); 23.5% (N = 145) of the participants were sophomores; 16.6% (N = 102) of the participants were juniors; and 11.4% (N = 70) of the participants were seniors. The majority of participants identified as Caucasian (81.3%), followed by Latino/Hispanic (6.5%), Asian or Asian American (4.7%), African American (3.7%), and other race/ethnicity (3.6%).

1.2. Procedure

This study was announced in psychology courses at the two participating institutions. Interested individuals provided informed consent for participation and completed an online survey lasting approximately thirty minutes. Participants received a debriefing document following their participation. Students enrolled in specific psychology courses received course credit or extra credit for participating in this study. This study was conducted under full institutional review board approval at each of the two participating institutions.

1.3. Measures

1.3.1. Demographic questionnaire

This brief self-report questionnaire designed by the study authors collected demographic information, including participant gender, ethnicity, and college year.

1.3.2. Difficulties in emotion regulation scale (DERS; Gratz & Roemer, 2004)

The DERS is a 36-item scale measuring difficulties with emotion regulation. The DERS is divided into six subscales. In this study, an overall summary score of difficulties in emotion regulation was examined. Items are rated on a Likert scale ranging from “almost never” to “almost always.” This measure includes items such as, “I experience my emotions as overwhelming and out of control.” The measure has demonstrated strong internal consistency, construct and predictive validity, and test-retest reliability in a 4- to 8-week interval (Gratz & Roemer, 2004). In this study, Cronbach's alpha was 0.95, suggesting excellent reliability.

1.3.3. Questionnaire of cognitive and affective empathy (QCAE; Reniers, Corcoran, Drake, Shryane, & Völlm, 2011)

The QCAE is a 31-item scale measuring cognitive and affective empathy. This study examined the Cognitive Empathy and Affective Empathy subscales. Items are rated on a 4-point Likert scale ranging from “strongly agree” to “strongly disagree.” The cognitive empathy subscale includes items such as, “Before criticizing somebody, I try to imagine how I would feel if I was in their place.” The affective empathy subscale includes items such as, “I often get emotionally involved with my friends’ problems.” The measure has demonstrated strong psychometric properties (Reniers et al., 2011). In this study Cronbach's alpha was 0.90 for the Cognitive Empathy subscale and 0.77 for the Affective Empathy subscale, indicating robust reliability.

1.3.4. Depression, anxiety, and stress scale (DASS; Lovibond & Lovibond, 2004)

The DASS is a widely-used 42-item self-report questionnaire measuring symptoms of depression, anxiety, and stress experienced over the past week. Each of the three subscales (i.e., Depression, Anxiety, and Stress) within the DASS has 14 items, which can be combined for an overall summary score of internalizing symptoms. This study examined the overall summary score. Items from this measure include, “I felt sad and depressed,” “I felt scared without any good reason,” and, “I was in a state of nervous tension.” The measure is well-validated (Lovibond & Lovibond, 2004). In this study Cronbach's alpha was 0.96, indicating excellent reliability.

1.4. Data analyses

Statistical analyses were performed using SPSS 23.0. Prior to analyses, all data were statistically examined for accuracy of data entry, missing values, and fit between the distributions and the assumptions of multivariate analysis. One case was removed due to missing data. Each variable was examined for normality through tests of skewness and kurtosis and using visual inspection. To improve linearity and reduce skewness, square root transformations were applied to the mildly skewed DASS summary score variable and the DERS summary score variable. Descriptive data for the variables of interest are presented in Table 1.

We first conducted one-way analyses of variance (ANOVAs) and t-test analyses to examine the contribution of possible covariates. Specifically, one-way ANOVAs were conducted to examine whether cognitive and affective empathy, difficulties in emotion regulation, and internalizing symptoms differed by participant year in college or participant ethnicity. We examined college year to rule out the possibility that any relationships among the constructs of empathy, emotion regulation, and internalizing psychopathology were related to participants’ age or maturity as they progressed through college. Additionally, t-tests were conducted to examine whether our variables of interest differed for men and women.

Table 1
Descriptive data for cognitive empathy, affective empathy, difficulties with emotion regulation, and internalizing symptoms (N = 613).

Variables	*M (SD)*	*Skewness*[a]	*Kurtosis*[b]
QCAE cognitive empathy subscale score	59.71 (8.38)	−0.28	−0.12
QCAE affective empathy subscale score	35.25 (5.36)	−0.24	0.19
DERS summary score[c]	86.03 (23.75)	0.59	0.20
DASS summary score[c]	33.42 (22.45)	1.06	0.98

Note. QCAE = Questionnaire of cognitive and affective empathy. DERS = Difficulties in emotion regulation scale. DASS = Depression, anxiety, and stress scale.

[a] Skewness Standard Error = 0.10.

[b] Kurtosis Standard Error = 0.20.

[c] Raw scores prior to transformation.

Table 2
Correlations between cognitive empathy, affective empathy, difficulties in emotion regulation, and internalizing symptoms ($N = 613$).

Variable	2	3	4
1. QCAE cognitive empathy subscale score	0.34***	−0.21***	−0.03
2. QCAE affective empathy subscale score	–	0.22***	0.26***
3. DERS summary score		–	0.72***
4. DASS summary score			–

Note. QCAE = Questionnaire of cognitive and affective empathy. DERS = Difficulties in emotion regulation scale. DASS = Depression, anxiety, and stress scale.
*$p < 0.05$; **$p < 0.01$; ***$p < 0.001$.

We then conducted bivariate correlations to examine the associations between the empathy subscales (i.e., cognitive empathy and affective empathy), difficulties in emotion regulation summary score, and internalizing symptoms summary score (see Table 2). Variables with correlations reaching significance at the bivariate level were included in our mediation analyses. We tested our hypotheses using mediation analyses examining the indirect effect of empathy on internalizing symptoms through difficulties in emotion regulation, controlling for relevant covariates. Mediation analyses were conducted using Preacher and Hayes' bias-corrected (BC) bootstrapping method (PROCESS, version 2.16.3), in which 5000 random samples from the data were extracted, and indirect effects were computed in each sample (Preacher & Hayes, 2004). This study used 95% BC confidence intervals. The mediation model was determined to be significant if the 95% BC confidence interval (CI) did not contain zero.

2. Results

2.1. Bivariate analyses

The ANOVA analysis examining year in college as a possible covariate revealed significant associations between year in college and affective empathy ($p < 0.05$), difficulties in emotion regulation ($p < 0.01$), and internalizing symptoms ($p < 0.05$). Year in college was not significantly associated with cognitive empathy ($p > 0.05$). Year in college was retained as a covariate in mediation analyses. The *t*-tests examining gender as a possible covariate demonstrated that both dimensions of empathy differed by gender ($p < 0.01$), as did difficulties in emotion regulation ($p < 0.01$), and internalizing symptoms ($p < 0.05$), with females reporting higher levels of cognitive and affective empathy, greater difficulties in emotion regulation, and more internalizing symptoms. Gender was included as a covariate in the mediation analyses. ANOVAs examining ethnicity as a possible covariate did not show any significant associations with any variables of interest ($p > 0.05$); thus, ethnicity was not included in further analyses.

Bivariate correlations between cognitive and affective empathy, difficulties in emotion regulation, and internalizing symptoms revealed that cognitive empathy was not significantly associated with internalizing symptoms ($r = -0.029$; $p > 0.05$), and thus cognitive empathy was removed from further analyses. All other variables of interest were correlated at the $p < 0.001$ level (see Table 2). Affective empathy was positively correlated with both difficulties in emotion regulation ($r = 0.215$; $p < 0.001$), and with internalizing symptoms ($r = 0.255$; $p < 0.001$). T difficulties in emotion regulation construct was positively associated with internalizing symptoms ($r = 0.723$; $p < 0.001$).

2.2. Mediation analyses

A mediation analysis revealed that affective empathy affected internalizing symptoms indirectly through difficulties in emotion regulation, even after accounting for participant year in college and gender. Specifically, individuals with higher levels of affective empathy also reported greater difficulty with emotion regulation ($b = 0.05$, $p < 0.001$, 95% BC CI [0.26, 0.64]), accounting for the effects of year in college and gender, and participants with greater difficulty with emotion regulation in turn reported higher levels of internalizing symptoms ($b = 1.08$, $p < 0.001$, 95% BC CI [0.99, 1.17]) (see Fig. 1). A 95% bias-corrected bootstrap confidence interval for the indirect effect based on 5000 bootstrap samples was entirely above zero, indicating that in our sample, the positive relationship between affective empathy and internalizing symptoms could be partially explained by difficulties in emotion regulation ($b = 0.05$, 95% BC CI [0.03, 0.07]; standardized $b = 0.13$, 95% BC CI [0.07, 0.18]).

3. Discussion

This study investigated difficulties in emotion regulation as one mediator of a hypothesized positive association between affective empathy and internalizing symptoms in a large sample of college students. Specifically, following a predominantly theoretical literature base (e.g., Tone & Tully, 2014), we examined whether affective and cognitive empathy might affect symptoms of depression, anxiety, and stress indirectly, through difficulties in emotion regulation in college men and women. Consistent with our hypotheses, affective empathy was positively associated with internalizing symptoms, and this relationship was partially explained by difficulties in emotion regulation. This model was significant even after accounting for the effects of participants' year in college and gender.

Taken together, these findings indicate that a heightened identification with the emotional experience of another person, in some cases through feelings those emotions oneself, predicts symptoms of depression, anxiety, and stress, and this relationship is partially explained by the empathizing individual's difficulties with emotion regulation skills. The results suggest that college students who are highly affectively empathic are more likely to have difficulties modulating their emotional expression, and that this in turn predicts greater internalizing symptoms. Further, these findings cannot be solely attributable to gender, or to students maturing and developing greater emotion regulation and adaptive empathy skills over the course of their college careers. These findings support the incorporation of targeted emotion

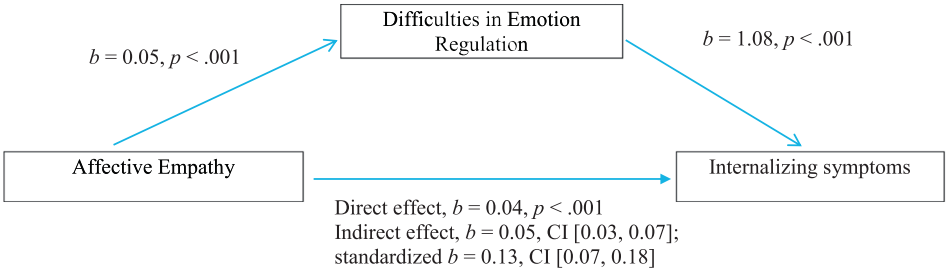

Fig. 1. Model of affective empathy as a predictor of internalizing symptoms, mediated by difficulties in emotion regulation and controlling for participant year in college and gender. The confidence interval for the indirect effect is a bias-corrected bootstrapped confidence interval based on 5000 samples. $N = 604$.

regulation training into preventive interventions aimed at college students at risk for the development of certain types of psychopathology.

Our findings did not reveal an association between cognitive empathy and depression, anxiety, and stress symptoms. Rather, our study's results support and extend the literature that specifically links the maladaptive aspects of affective empathy (e.g., the subdomain of personal distress) with internalizing symptoms (e.g., Neumann et al. (2016), Shu et al. (2017); Tone and Tully (2014)). It stands to reason that an individual who excessively empathizes with the negative emotions of another individual may, in taking on those difficult emotions, also experience symptoms of depression or anxiety. The extant literature has robustly demonstrated specific and unique associations between heightened affective empathy and internalizing symptoms (e.g., Gambin and Sharp (2016, 2018), Schreiter et al. (2013), Shu et al. (2017), Tone and Tully (2014)). Our findings supported this body of research in finding that even high levels of maladaptive cognitive empathy are not associated with psychopathology in the way that over-identifying with another individual's emotional experience is, particularly when compounded by difficulties managing and regulating one's emotions. Further, our findings provide additional confirmation that cognitive and affective empathy appear to be independent constructs (Nummenmaa et al., 2008; Shamay-Tsoory et al., 2009) and relate differently to other aspects of college students' emotional lives.

One explanation for the difficulties in emotion regulation partially explaining the association between affective empathy, specifically, and internalizing symptoms, relates to the way in which some individuals, commonly girls, are socialized to demonstrate affective empathy. Literature suggests that importance is afforded to girls' ability to identify, recognize, and respond to others' emotional reactions, and, perhaps for some people who empathize to an extreme, this may put these individuals at risk for the type of empathic stress that leads to internalizing symptoms (Keenan & Hipwell, 2005; Schreiter et al., 2013). The sequelae of these socialization practices in some young adults may be an over-identification with others' difficult emotions, poor development of emotion regulation skills, and, thus, a limited capacity to turn down that intensity of emotion, resulting in depression, anxiety, and stress. It may be that this degree of extreme affective empathy, predicting poor emotion regulation skills, leads to an empathy fatigue that is not present in cognitive empathy, a construct that is less emotionally connected, and in which emotion regulation skills are perhaps not as relevant. These questions should be pursued in longitudinal studies.

Our findings contribute to the existing literature in several important ways. Whereas some existing research has demonstrated a positive association between empathy and psychopathology (Shu et al., 2017; Silton & Fogel, 2010; Tone & Tully, 2014), the extant literature is mixed, with other studies finding negative relationships between empathy and mental health problems (e.g., Chow et al. (2013), Cusi et al. (2011)). Our study provides additional support for the theory that heightened empathy, and specifically affective empathy, may have a positive relationship with depression, anxiety, and stress symptoms in college students.

Second, there is limited research examining mechanisms underlying the relationship between empathy and internalizing symptoms. One important recent study found emotion regulation difficulties to moderate the association between empathy and depression (Tully et al., 2016), and our study is the first that we are aware of to identify difficulties in emotion regulation as one mediator of the relationship between empathy and symptoms of depression, anxiety, and stress in college students. Our findings suggest that emotion regulation difficulties may partially explain the negative relationship between affective empathy and a range of symptoms of internalizing psychopathology in college students. These findings have key implications for the development of college-focused prevention and mental health promotion programs aimed at bolstering specific skills, including emotion regulation skills. As skill-oriented preventive interventions with college populations have demonstrated the greatest efficacy (Conley et al., 2013), these findings are of particular relevance.

4. Limitations

Several limitations of this work must be considered. First, although our sample was quite large, we had far fewer male participants than female participants. Future studies should attempt to replicate these findings with gender-balanced samples. Additionally, our sample consisted primarily of Caucasian participants, and additional research should examine these questions with more ethnically and racially diverse samples. It would be interesting to study possible cultural differences relating to cognitive and affective empathy, emotion regulation, and the ways in which these constructs may interface with internalizing symptoms in other cultures.

In addition, this was a cross-sectional study, and thus we cannot definitively state that affective empathy leads to emotion regulation difficulties, which in turn cause internalizing symptoms. Perhaps individuals with internalizing symptoms are more likely to demonstrate excessive affective empathy that may lead to empathic fatigue and emotion dysregulation (Klimecki & Singer, 2012; Oakley, Knafo, & McGrath, 2012). Alternatively, it may be that emotion dysregulation results in higher levels of personal distress when individuals are confronted by others' negative emotions, which in turn leads to internalizing symptoms (Eisenberg et al., 1996; Gambin & Sharp, 2016), Although existing theoretical and empirical literature supports our hypothesized trajectory of excessive affective empathy predicting psychopathology in part through difficulties with the modulation of one's emotional experience (Tully et al., 2016; Zahn-Waxler et al., 1991), the field would benefit from longitudinal research examining these questions over time in a diverse sample of male and female individuals.

Moreover, whereas our findings support negative sequelae of empathy in certain situations, this does not indicate that empathy is uniformly maladaptive; there are likely to be positive effects of high levels of empathy that were not examined in this study. For example, research finds that a high level of self-regulation is associated both with negative physiological sequelae as well as with fewer long-term behavioral or substance use problems (Brody & Ge, 2001). Future research should explore cognitive and affective empathy at different levels and in association with a range of possible outcomes in an attempt to develop a more nuanced understanding of its sequelae – both positive and negative – across settings and in diverse populations.

Our findings suggest that higher affective empathy in college students is associated with internalizing symptoms, and that this relationship is partially explained by poorer emotion regulation skills. The results of this study strengthen our understanding of empathy and have implications for psychological prevention and intervention programs. Teaching and practicing emotion regulation skills, particularly for college students who may be more likely to over-identify with the emotional experiences of others, could be beneficial in mitigating the risk of internalizing psychopathology and helping these individuals demonstrate externally-focused affective empathy that is altruistic, supportive, and, simultaneously, self-protective.

Declarations of interest

None.

Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:10.1016/j.mhp.2018.11.004.

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