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ORIGINAL PAPER

Relations Between Maternal Coping Socialization, Adolescents' Coping, and Symptoms of Anxiety and Depression

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Abstract

This study examined the associations among maternal socialization of coping, adolescents' coping, and adolescents' symptoms of anxiety and depression. A sample of 120 adolescents (45% female; $M = 12.27$; 66.7% White, 25% African American, 2.5% Asian American, 5.8% Latino or Hispanic American) and their mothers completed a series of questionnaires in a cross-sectional, multi-informant study. Findings indicate that maternal coping suggestions and adolescents' coping were both related to adolescents' anxiety/depression symptoms. Specifically, maternal socialization of secondary control coping messages was negatively correlated with adolescents' symptoms of depression and anxiety. Adolescents' use of secondary control coping emerged as the most robust correlate of symptoms, such that the use of secondary control coping was associated with fewer symptoms. The relationship between adolescents' coping strategies and their symptoms of anxiety/depression was associated with the extent to which mothers encouraged specific types of coping. Specifically, when mothers' socialization of secondary control coping was low, there was a negative association between adolescents' use of secondary control coping and symptoms. Furthermore, exploratory analyses suggest that specifically encouraging females to use secondary control coping strategies is adaptive, but how much daughters use secondary control coping has the strongest association with reduced internalizing symptoms. Collectively, the current findings indicate that there is an association between maternal coping suggestions and adolescents' symptoms of anxiety and depression, and there is a stronger association with adolescents' coping. Findings emphasize a need for researchers to further clarify the association of maternal coping suggestions with youth coping and adjustment as they navigate interpersonal stressors encountered during adolescence.

Keywords Coping · Parenting · Socialization · Stress · Peer relationships

Highlights

- This study examined the relationship between parental socialization of coping, adolescents' coping, and internalizing symptoms using a multi-informant design.
- Results suggest that the interaction between maternal coping socialization and adolescent coping is associated with internalizing symptoms.
- Study results suggest that adolescents' use of adaptive coping strategies has the strongest association with their symptoms.

Adolescence is a developmental period characterized by increased exposure to stress in several life domains and a concomitant increase in risk for several types of internalizing and externalizing problems (Grant et al. 2004). Of particular salience is a marked increase in exposure to peer stress, such as social exclusion or conflict with peers, which co-occurs with a rise in time spent with peers separate from adults (e.g., Sontag et al. 2008). As a consequence,

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adolescence represents an important time for the development of effective emotion regulation skills and strategies for coping with interpersonal stress. These strategies, including problem solving, acceptance, and cognitive reappraisal require complex cognitive skills that emerge in adolescence. An important factor that is thought to be involved in shaping and influencing how adolescents cope with stress is the type of coping socialization they receive from their parents. This process, referred to as the socialization of coping, involves a parent's explicit coaching or modeling of coping strategies for adolescents and a growing body of research suggests that it may play a crucial role in not only the development of effective coping strategies, but also in adolescents' internalizing symptoms (Abaied and Rudolph 2010a, 2011). Accordingly, we examined the relationship between maternal socialization of coping, adolescent coping with peer stress, and adolescents' symptoms of anxiety and depression.

Chronic stress is a significant risk factor for the etiology of a wide range of internalizing and externalizing problems (Grant et al. 2003, 2004; Kushner 2015; Zandstra et al. 2015). Furthermore, particular types of stress may be especially pertinent depending on an individual's developmental level. Notably, ongoing difficulties in peer relationships, such as conflict, social exclusion, or rejection by peers, is a salient source of stress for adolescents (Conley and Rudolph 2009; Davila et al. 1995; Ladd et al. 2019). Adolescents experience a broad range of intensity and severity of peer stressors, ranging from daily hassles (e.g., interactions with rude peers) to more severe events, such as peer victimization. During adolescence, peer relationships become a critical component of social support systems and relationships as youth become increasingly independent from parents and family (Bukowski et al. 2011; Sontag et al. 2008; Wong et al. 2020). Time spent separately with peers also increases dramatically, further emphasizing the importance of peer relationships (Abaied and Rudolph 2011). As such, chronic stress in peer relationships poses a heightened threat to youth, potentially contributing to increased symptoms of depression and anxiety (e.g., Coiro et al. 2017; Flynn and Rudolph 2007; Gazelle and Rubin 2019; Sontag et al. 2008).

There is a large body of research indicating that the association between stress and psychopathology is mediated and moderated in part by the ways in which youth cope with stress and regulate their emotions (Compas et al. 2017; Eisenberg et al. 2010). Engagement coping strategies, which include both primary control coping strategies (e.g., problem solving, emotional expression) and secondary control coping strategies (e.g., cognitive reappraisal, acceptance), are associated with fewer internalizing symptoms and increased positive mood (Compas et al. 2017). In contrast, disengagement coping strategies (e.g., avoidance, denial) are associated with increased internalizing and externalizing psychopathology (Compas et al. 2017). Collectively, the use of coping strategies that are matched to the demands of specific contexts provides a crucial foundation for facilitating adaptation in youth exposed to acute and chronic peer stress.

Parents may either buffer or exacerbate the effects of stress by communicating messages to adolescents about potentially adaptive or maladaptive coping and emotion regulation strategies, either through explicit coaching or modeling such strategies. This process, referred to as the socialization of coping, may have a significant influence on youth adjustment, potentially as a function of the inherent support, investment, and interest conveyed by the parent when they engage in coaching coping behaviors (Abaied and Rudolph 2010b). For instance, parental secondary control coping suggestions have been shown to predict fewer internalizing symptoms in youth, while disengagement coping suggestions are associated with heightened depressive symptoms (Abaied and Rudolph 2010a; Stanger et al. 2018). The impact of these coping suggestions may be most impactful when youth encounter heightened levels of peer stress (Abaied and Rudolph 2010a). This may be due to the fact that during adolescence, youth frequently engage in unsupervised time with peers, and thus are tasked with independently navigating and coping with peer conflict, which may tax their coping resources (Abaied and Rudolph 2011). In part to compensate for their still-developing ability to cope independently, youth who experience peer stress may rely more upon external guidance and resources, including parents' coping suggestions. Accordingly, parental socialization of coping may not only be associated with the type of coping strategies that youth use in response to stress, but also their subsequent internalizing and externalizing symptoms. Further, the combination of parents' coping socialization and adolescents' own coping efforts may be important in understanding adolescents' adjustment. Considering the support offered by parents, it is possible that the association between adolescents' own coping efforts and internalizing symptoms may be stronger in the context of higher levels of parental coping socialization. In other words, the relationship between adolescents' use of a specific type of coping and adolescents' internalizing problems may be stronger when mothers provide more coping suggestions and, in turn, their adolescents use more of these strategies in response to peer stress.

Previous research on the socialization of coping during adolescence can be built on in several important ways. First, while prior studies have examined the interaction between engagement coping and behavioral avoidance (a type of disengagement coping) on youth's symptoms of psychopathology (e.g., Abaied and Rudolph 2010a), it is unclear if the relationship between adolescent coping and

internalizing symptoms is moderated by the extent to which mothers socialize their adolescents to cope. For instance, the association between the use of a particular type of coping (e.g., primary control coping) and adolescents' internalizing symptoms may be stronger when adolescents use those strategies in the context of high levels of socialization of that type of coping. Second, prior research examining the relationship between maternal coping suggestions, youth coping, and internalizing symptoms have aggregated subtypes of engagement coping into one broad category (e.g., Abaied and Rudolph 2010a, b, 2011; Monti et al. 2014). There is evidence from these studies that engagement coping suggestions are associated with fewer symptoms of psychopathology. However, extensive research demonstrates that engagement coping is comprised of primary control and secondary control coping strategies (e.g., Compas et al. 2017). Thus, it is unclear if socializing both primary and secondary control coping strategies is effective in the context of peer stress. Third, research regarding the impact of socializing disengagement coping strategies has yielded mixed findings. For instance, Abaied and Rudolph (2010a) examined the interactive effect of maternal socialization of coping and child stress on psychopathology in a sample of predominately White (74.2%) youth (M age = 12.41) from a range of socioeconomic backgrounds. They found that encouraging disengagement coping strategies predicts increased depressive symptoms in youth who are experiencing heightened levels of stress. However, these findings were only significant for youth who received low (but not moderate or high) levels of engagement coping suggestions (Abaied and Rudolph 2010a). Alternatively, recent research in a slightly younger (M age = 9.02), predominately White (93.2%) sample suggests that disengagement coping suggestions may be protective against externalizing problems for youth (Stanger et al. 2018). Accordingly, the impact of socializing disengagement coping strategies warrants further examination.

To address these issues, we used a multi-informant design to investigate the contributions of maternal coping suggestions to youth coping and anxious/depressed symptoms. First, we expected that maternal primary and secondary control coping suggestions would be negatively correlated with their adolescents' anxious/depressed symptoms, while maternal disengagement coping suggestions would be positively correlated with their adolescents' symptoms of anxiety and depression. Second, given prior research demonstrating the relationship between maternal coping suggestions, adolescents' coping strategies, and subsequent internalizing symptoms in youth (Abaied and Rudolph 2010a, 2011; Stanger et al. 2018), we hypothesized that the relationship between adolescent coping and anxious/depressed symptoms would be associated with the degree to which parents socialize their adolescents to cope with peer stress. Specifically, we expected that under conditions of high levels of maternal coping engagement suggestions, adolescents would employ more primary and secondary control coping strategies, and thus, experience fewer symptoms of depression and anxiety. Alternatively, we anticipated that increased behavioral avoidance coping suggestions would interact with their adolescents' use of disengagement coping strategies to predict increased anxious/depressed symptoms. All hypotheses were tested using cross-informant (i.e., using self-report of coping and mother-report of symptoms) analyses. In addition, to ensure a homogenous sample of parental socialization of coping, we focused our analyses on maternal coping suggestions.

Method

Participants

The sample included 120 mothers ($M = 41.60$ years, SD = 6.23) and their adolescents (45% female) between the ages of 9 and 15 years old ($M = 12.27$, SD = 1.89). Adolescents identified as 66.7% White, 25% African American, 2.5% Asian, and 5.8% Latino or Hispanic. Mothers identified as 68.3% European American, 25.8% African American, 2.5% Asian, and 3.4% Latino or Hispanic. With regard to maternal education, 60% of mothers reported earning at least a college degree, 6.6% had a high school degree or less, and 33.3% reported completing some college or technical schooling. The majority of mothers were either married or co-habiting (64.2%). The range of annual income in the sample was <$10,000 to >$100,000, with a median income of $65,000.

Procedure

Mothers and adolescents were invited to participate in a study designed to better understand how mother-child dyads communicate about emotions and stress. Participants were recruited through a range of sources, including mass emails distributed through the Family Care Partners Database, a university-based study finder, and fliers placed in waiting rooms at public and private mental health clinics in a large southeastern metropolitan area. Participants who expressed interest in the study were contacted and subsequently screened via telephone by trained doctoral students in clinical psychology to determine eligibility. Exclusion criteria included a maternal history of schizophrenia, bipolar I, bipolar II, a pervasive developmental disorder, or intellectual disability in the adolescent. During one concurrent laboratory visit, the oldest eligible adolescent and mother completed a battery of questionnaires. Data collection for the study occurred over the course of a 14-month period.

The University Institutional Review Board approved all procedures. Families were compensated for the assessment and received a packet of information about parenting, parent-child communication, and the impact of parental depression on parenting.

Measures

Maternal depressive symptoms

Mothers completed the 21-item Beck Depression Inventory (BDI-II; Beck et al. 1996) to assess their current depressive symptoms within the past two weeks, including sadness, anhedonia, indecisiveness, appetite, guilt, and suicidality. Symptoms were rated on a 4-point Likert scale ranging from 0 to 3. Internal consistency in the present sample was $\alpha = 0.93$.

Anxiety/depression symptoms

The Child Behavior Checklist (CBCL; Achenbach and Rescorla 2001) was used to assess adolescents' symptoms of anxiety and depression within the past six months. The CBCL is a 118-item parent report of their adolescents' behaviors based on the rating of statements on a 3-point Likert scale (0 = *not at all true*, 1 = *somewhat true*, 2 = *very true*). The mixed Anxious/Depressed scale was used and presents a measure of adolescents' anxiety and depressive symptoms. The scale consists of 13 items and example items include: fears going to school; feels worthless or inferior; cries a lot; is nervous, high strung, or tense; and worries. The *T* score on the scale is presented in Table 1 for ease of comparison with norms. However, for all subsequent analyses, the raw score was used to maximize variance. The internal consistencies of the Anxious/Depressed scale of the CBCL in the current sample was $\alpha = 0.81$. Parent-report on adolescents' symptoms was utilized to provide a cross-informant design.

Table 1 Descriptive statistics for key study variables

Measure	*M*	SD	Min	Max
1. BDI-II maternal depressive symptoms	10.40	10.30	0	51
2. Adolescent anxious/depressed symptoms	55.06	7.38	50	86
3. RSQ adolescent primary control coping	0.19	0.05	0.08	0.31
4. RSQ adolescent secondary control coping	0.26	0.06	0.11	0.39
5. RSQ adolescent disengagement coping	0.16	0.03	0.09	0.24
6. SOC proportion of primary control	0.32	0.05	0.23	0.47
7. SOC proportion of secondary control	0.22	0.04	0.10	0.32
8. SOC Proportion of Behavioral Avoidance	0.16	0.03	0.08	0.22

BDI-II beck depression inventory-2, *RSQ* responses to stress questionnaire, *SOC* socialization of coping questionnaire

Adolescent coping responses

Adolescents completed the 57-item Responses to Stress Questionnaire—Peer Stress version (RSQ-PS; Connor-Smith et al. 2000) to assess their coping strategies in response to peer stress within the past 6 months. The RSQ-PS provides a domain-specific approach to sampling a variety of peer stressors, ranging in severity. Items include peer stressors involving romantic relationships (e.g., "Asking someone out and being turned down"), social exclusion (e.g., "Not being invited to do things with others"), friendships (e.g., "Having someone stop being your friend"), bullying (e.g., "Being teased/hassled by friends or other people"), and peer pressure (e.g., "Being pressured by others to do things you don't want to do"). Adolescents rate how much each of the experiences has been a problem for them in the past 6 months on a 4-point scale (1 = *not at all*, 2 = *a little*, 3 = *somewhat*, 4 = *very*). Respondents then rate how much they try to use different coping strategies (e.g., "I try not to feel anything") in response to these problems. Analyses in the present study focus on all three coping factors confirmed in factor analytic studies (e.g., Benson et al. 2011; Compas et al. 2006; Connor-Smith et al. 2000; Wadsworth et al. 2004): primary control coping (i.e., emotional modulation, problem solving, emotional expression), secondary control coping (i.e., acceptance, distraction, positive thinking, cognitive reappraisal), and disengagement coping (i.e., avoidance, denial, wishful thinking). To control for response bias in item endorsement, proportion scales were calculated by dividing the total score of each coping factor by the total score received on the RSQ (e.g., Vitaliano et al. 1987). Internal consistencies of adolescents' coping with peer-stress in the current study were: $\alpha = 0.87$ on primary control coping, $\alpha = 0.86$ on secondary control coping, and $\alpha = 0.76$ on disengagement coping.

Socialization of coping

The Socialization of Coping Questionnaire (SOC; Abaied 2010; Abaied and Rudolph 2010a, b) is a 24-item measure that was administered to the mother to examine the coping strategies they generally encourage their adolescent to use in response to peer stress. The development of the questionnaire was guided by the coping factor structure of the RSQ: primary control, secondary control, distraction (e.g., items from both the secondary control and disengagement scales), and behavioral avoidance (e.g., items from the disengagement scale) coping suggestions. Example items for the factors of interest included: deal with the situation

Table 2 Bivariate correlation matrix among key study variables

Variables	1	2	3	4	5	6	7	8	9
1. Adolescent age	–								
2. Adolescent gender	0.02	–							
3. RSQ adolescent PCC	0.16	−0.15	–						
4. RSQ adolescent SCC	0.21*	−0.05	0.20*	–					
5. RSQ adolescent DC	−0.12	0.09	−0.58***	−0.20*	–				
6. SOC proportion of PCC	−0.24**	0.18	−0.17	−0.17	0.06	–			
7. SOC proportion of SCC	0.07	−0.21*	0.01	0.06	−0.05	−0.08	–		
8. SOC proportion of behavioral avoidance	0.07	0.00	0.15	0.05	0.02	−0.39***	−0.68***	–	
9. Anxious/depressed symptoms	−0.12	0.29**	−0.08	−0.29**	0.07	0.13	−0.25**	0.09	–
10. Maternal BDI-II scores	−0.09	0.39***	−0.13	−0.18	0.12	0.03	−0.38***	0.22*	0.54***

RSQ responses to stress questionnaire, *PCC* primary control coping, *SCC* secondary control coping, *DC* disengagement coping, *SOC* socialization of coping, *BDI II* beck depression inventory-2

*$p < 0.05$; **$p < 0.01$; ***$p < 0.001$

head-on instead of ignoring it (i.e., primary control coping), and look for something good that is happening (i.e., secondary control coping). For each item, mothers rated on a 5-point Likert scale (1 = *not at all*, 3 = *some*, and 5 = *very much*) the extent to which they suggest to their adolescent to use the referenced coping strategy in response to a peer stressor. The internal consistencies of the coping factors were $\alpha = 0.80$ for secondary control coping messages, $\alpha = 0.78$ for primary control coping messages, and $\alpha = 0.76$ for behavioral avoidance coping messages.

Results

Descriptive Statistics

As shown in Table 1, adolescents' anxious/depressed symptoms were approximately half a standard deviation above the normative mean (*Mean T* score = 55.06). On the RSQ, the proportions of reported use of primary control, secondary control, and disengagement coping strategies are similar to that of prior studies (e.g., Jaser et al. 2007). On the SOC, mothers reported primarily primary control coping suggestions, followed by behavioral avoidance and secondary control coping strategies. Notably, there was considerable variability in maternal depressive symptoms at the assessment visit (Range = 0–51, $M = 10.40$, SD = 10.30). For reference, the following score ranges have been suggested for interpretation: 0–13 (*minimal*), 14–19 (*mild*), 20–28 (*moderate*), and 29–63 (*severe*; Beck et al. 1996). Adolescents reported a broad range of experiences with peer stress. Up to 57% of adolescents reported experiencing some form of bullying, 33% endorsed friendship problems (e.g., "Having someone stop being your friend"), 36% reported social exclusion, 36% endorsed the experience of peer pressure, and 2% reported experiencing stress in romantic relationships (e.g., "Asking someone out and being turned down").

Preliminary Analyses

Preliminary analyses were conducted to examine associations between the use of primary control, secondary control, disengagement coping and symptoms (Table 2). Adolescents' use of secondary control coping was significantly negatively correlated with mother-report of their symptoms ($p = 0.002$), such that adolescents who used more secondary control coping had fewer symptoms of depression and anxiety. However, adolescents' use of primary control and disengagement coping were not significantly correlated with symptoms.

Additional preliminary analyses were conducted to examine associations among adolescent coping, maternal socialization of coping, and symptoms across male and female adolescents. Correlation matrices were run separately by gender to test for patterns of associations. There were no significant gender differences in the associations between adolescents' coping and symptoms, or adolescents' coping and maternal socialization of coping. However, the socialization of secondary control coping was significantly correlated with anxious/depressed symptoms for females ($r = -0.49$, $p < 0.001$), but not for males ($r = -0.06$, $p = 0.64$). The difference between these correlations was statistically significant ($Z = -2.52$, $p = 0.01$).

In addition, analyses were conducted to test for possible racial and educational differences in adolescent coping and maternal socialization of coping. There were no significant educational differences in coping or socialization of coping. However, White mothers reported a higher proportion of socialization of primary control coping ($M = 0.32$,

SD = 0.05) compared to African American mothers (M = 0.30, SD = 0.04), $t(110) = -2.14$, $p = 0.04$.

Bivariate Correlational Analyses

Bivariate correlational analyses were conducted to test the first hypothesis regarding the associations of maternal socialization of coping and adolescents' anxious/depressed symptoms (Table 2). Consistent with the first hypothesis, adolescents' symptoms of depression and anxiety were significantly negatively correlated with maternal secondary control coping socialization messages ($p = 0.006$), such that mothers who encouraged greater use of secondary control coping strategies had children with fewer internalizing symptoms. However, socialization of primary control and disengagement coping were not significantly correlated with symptoms.

There were significant associations between the socialization of different types of coping. For instance, the socialization of secondary control coping strategies was negatively correlated with maternal behavioral avoidance suggestions ($p < 0.001$), such that mothers who encouraged greater use of secondary control coping strategies provided fewer behavioral avoidance suggestions. In addition, the socialization of behavioral avoidance was significantly negatively correlated with maternal primary control coping suggestions ($p < 0.001$).

Last, socialization of coping was also related to maternal depressive symptoms. For instance, the socialization of secondary control coping suggestions was negatively associated with depressive symptoms in mothers ($p < 0.001$), while socialization of behavioral avoidance was positively associated with maternal depressive symptoms ($p = 0.02$).

Multiple Linear Regression Analyses

A series of linear regression analyses (presented in Tables 3–5) were conducted to test the hypothesis that the relationship between adolescent primary control, secondary control and disengagement coping with anxious/depressed symptoms would be associated with the degree to which mothers socialize their adolescents to cope. For all analyses, maternal socialization messages and adolescent coping served as independent variables; child age, maternal depressive symptoms and child gender were included as covariates.

Regression analyses predicting adolescent anxious/depressed symptoms from adolescents' use of primary control coping and maternal primary control coping suggestions are presented in Table 3. Each step in the model reached significance. However, there were no main effects of adolescent primary control coping or socialization of primary control coping in any of the steps. Further, the interaction variable of socialization of primary control coping with adolescents' use of primary control coping was not significant.

Regression analyses predicting adolescent anxious/depressed symptoms from adolescents' use of secondary control coping and maternal secondary control coping suggestions are presented in Table 4. There was a main effect for adolescents' use of secondary control coping ($p = 0.01$). When the socialization of secondary control coping was added into the model, this main effect remained significant. However, there was no main effect for the socialization of secondary control coping. When the interaction variable of socialization of secondary control coping with adolescents' use of secondary control coping was included in step 4, there was a main effect for socialization of secondary control coping ($p = 0.01$) and the main effect of adolescent coping remained significant ($p = 0.003$). In addition, there was a significant association between the interaction variable and adolescents' anxious/depressed symptoms ($p = 0.01$). Results of the regression analyses were plotted in PROCESS to better understand the nature of the interaction of maternal socialization of secondary control coping and adolescents' use of secondary control coping (Fig. 1). When mothers' socialization of secondary control coping was low ($b = -21.39$, $t(110) = -3.50$, $p < 0.001$), there was a negative association between adolescents' use of secondary control coping and symptoms. When mothers' socialization of secondary control coping was average ($b = -9.86$, $t(110) = -1.87$, $p = 0.06$) or high ($b = 1.58$, $t(110) = 0.20$, $p = 0.84$), adolescents' use of secondary control coping was unrelated to their anxious/depressed symptoms.

Regression analyses predicting adolescents' anxious/depressed symptoms from adolescents' use of disengagement coping and maternal behavioral avoidance suggestions are presented in Table 5. Each step in the model reached significance. However, there were no main effects of adolescent disengagement coping or socialization of behavioral avoidance in any of the steps. Further, the interaction variable of socialization of behavioral avoidance with adolescents' use of disengagement coping was not significant.

Due to significant gender differences in the relationship between socialization of secondary control coping and symptoms, exploratory analyses were conducted to test the associations among gender, socialization of secondary control coping, and adolescents' use of secondary control coping with anxious/depressed symptoms. The interaction between gender and adolescents' use of secondary control coping was not significant ($\beta = -0.33$, $p = 0.44$). However, the interaction between gender and socialization of secondary control coping was significantly associated with

Table 3 Association of the socialization of primary control coping and adolescents' use of primary control coping with anxious/depressed symptoms

	β	t	95% CI		p
			LL	UL	
Step 1	$F(3,112) = 15.78$***; adjusted $R^2 = 0.28$				
Adolescent age	−0.06	−0.69	−0.42	0.20	0.49
Adolescent gender	0.11	1.35	−0.37	1.95	0.18
Maternal BDI-II scores	0.53	6.61***	0.13	0.24	0.000
Step 2	$F(1,111) = 11.75$***; adjusted $R^2 = 0.27$				
Adolescent age	−0.05	−0.65	−0.42	0.21	0.52
Adolescent gender	0.11	1.36	−0.37	1.97	0.18
Maternal BDI-II scores	0.53	6.53***	0.13	0.24	0.000
Adolescent PCC	−0.02	−0.21	−14.14	11.44	0.84
Step 3	$F(1,110) = 9.90$***; adjusted $R^2 = 0.28$				
Adolescent age	−0.02	−0.28	−0.37	0.28	0.79
Adolescent gender	0.12	1.48	−0.30	2.04	0.14
Maternal BDI-II scores	0.53	6.57***	0.13	0.24	0.000
Adolescent PCC	−0.00	−0.02	−12.99	12.68	0.98
Socialization of PCC	0.12	1.44	−3.44	21.73	0.15
Step 4	$F(1,109) = 8.22$***; adjusted $R^2 = 0.27$				
Adolescent age	−0.02	−0.27	−0.37	0.28	0.79
Adolescent gender	0.12	1.49	−0.29	2.06	0.14
Maternal BDI-II scores	0.52	6.37***	0.13	0.24	0.000
Adolescent PCC	−0.24	−0.44	−107.16	68.53	0.66
Socialization of PCC	−0.03	−0.08	−53.88	49.96	0.94
Adolescent PCC × Soc of PCC	0.26	0.44	−218.45	342.04	0.66

BDI-II beck depression inventory-2, *PCC* primary control coping, *Soc of PCC* Socialization of primary control coping

***$p < 0.001$

symptoms ($\beta = 1.37$, $p = 0.007$). For females ($b = -28.81$, $t(113) = -2.58$, $p = 0.01$), there was a negative association between mothers' socialization of secondary control coping and symptoms. For males ($b = 9.73$, $t(113) = 1.04$, $p = 0.30$), maternal socialization of secondary control coping was unrelated to symptoms. In addition, the three-way interaction between maternal socialization of secondary control coping, gender, and adolescents' use of secondary control coping was significant ($\beta = 1.84$, $p = 0.03$). For males, the interaction between socialization of secondary control coping and the use of secondary control coping was unrelated to symptoms across all levels of maternal socialization. For females, the interaction between socialization of secondary control coping and the use of secondary control coping was significant specifically at low levels of maternal socialization ($b = -27.85$, $t(107) = -2.37$, $p = 0.02$), where mothers who encouraged less secondary control coping had daughters with fewer symptoms. Notably, the interaction between maternal socialization of secondary control coping and gender was unrelated to daughters' symptoms at average ($b = -14.08$, $t(107) = -1.79$, $p = 0.08$) and high levels of socialization ($b = -2.30$, $t(107) = -0.19$, $p = 0.85$).

Discussion

We utilized a multi-informant design to examine the associations among maternal coping suggestions, adolescents' coping with peer stress, and anxious/depressed symptoms. The findings suggest that maternal secondary control coping suggestions are associated with fewer adolescent anxious/depressed symptoms, but adolescents' own use of secondary control coping strategies had the most robust association with reduced symptoms of anxiety and depression in the regression analyses. Furthermore, this study expanded upon previous work, demonstrating that the relationship between adolescent coping and internalizing symptoms is associated with the degree to which mothers socialize their adolescents to use secondary control coping in response to peer stress.

Consistent with prior research, adolescents' coping strategies were significantly associated with their symptoms of

Table 4 Association of the socialization of secondary control coping and adolescents' use of secondary control coping with anxious/depressed symptoms

	β	t	95% CI		p
			LL	UL	
Step 1	$F(3,113) = 15.82$***; adjusted $R^2 = 0.28$				
Adolescent age	−0.05	−0.65	−0.41	0.21	0.52
Adolescent gender	0.11	1.42	−0.33	1.97	0.16
Maternal BDI-II scores	0.53	6.62***	0.13	0.24	0.000
Step 2	$F(1,112) = 13.64$***; adjusted $R^2 = 0.30$				
Adolescent age	−0.02	−0.19	−0.34	0.28	0.85
Adolescent gender	0.10	1.26	−0.41	1.85	0.21
Maternal BDI-II scores	0.50	6.31***	0.12	0.23	0.000
Adolescent SCC	−0.19	−2.30*	−22.51	−1.69	0.02
Step 3	$F(1,111) = 10.99$***; adjusted $R^2 = 0.30$				
Adolescent age	−0.01	−0.16	−0.33	0.28	0.88
Adolescent gender	0.10	1.31	−0.39	1.88	0.20
Maternal BDI-II scores	0.48	5.59***	0.11	0.23	0.000
Adolescent SCC	−0.19	−2.30*	−22.53	−1.67	0.02
Socialization of SCC	−0.07	−0.78	−21.04	9.19	0.44
Step 4	$F(1,110) = 10.66$***; adjusted $R^2 = 0.33$				
Adolescent age	−0.03	−0.40	−0.36	0.24	0.69
Adolescent gender	0.09	1.16	−0.46	1.76	0.25
Maternal BDI-II scores	0.45	5.38***	0.10	0.22	0.000
Adolescent SCC	−1.12	−2.95**	−121.47	−23.92	0.004
Socialization of SCC	−0.86	−2.64*	−136.39	−19.34	0.01
Adolescent SCC × Soc of SCC	1.27	2.52*	60.91	511.47	0.01

BDI-II beck depression inventory-2, *SCC* secondary control coping, *Soc of SCC* Socialization of secondary control coping

*$p < 0.05$; **$p < 0.01$; ***$p < 0.001$

anxiety and depression. Specifically, adolescents' use of secondary control coping was negatively correlated with anxious/depressed symptoms. In addition, there was a main effect for adolescents' use of secondary control coping on anxious/depressed symptoms, such that greater use of secondary control coping was associated with decreased symptoms. These findings are consistent with prior research demonstrating that when coping with peer stress, greater use of secondary control coping is related to fewer symptoms of anxiety and depression (e.g., Jaser et al. 2007). However, there was no significant association between adolescents' use of primary control or disengagement coping with symptoms.

Partial support was found for the first hypothesis, i.e., that maternal engagement coping suggestions would be negatively associated with their adolescents' anxious/depressed symptoms. In the bivariate correlational analyses, socialization of secondary control coping was significantly negatively correlated with adolescents' symptoms, such that mothers who encouraged greater use of secondary control coping had children with fewer symptoms of depression and anxiety. These findings are consistent with prior research suggesting that greater socialization of secondary control coping predicts decreased internalizing symptoms over time (Stanger et al. 2018).

It is notable that while maternal secondary control coping suggestions were associated with decreased symptoms, these findings emerged exclusively in the correlational analyses and were not significant in the multiple regression analyses. However, the association of adolescents' use of secondary control coping with symptoms was significant in both the correlational and multiple linear regression analyses, such that greater use of secondary control coping strategies predicted decreased symptoms of depression and anxiety. These findings suggest that secondary control coping is more adaptive for coping with interpersonal stress. This is in contrast with prior research suggesting that secondary control coping is most effective for dealing with uncontrollable stressors, while primary control coping is the most adaptive for dealing with relatively controllable stressors, such as peer stress (e.g., Jaser et al. 2007). However, there may be aspects of peer stress that are predominately uncontrollable, such as peer victimization. In

Table 5 Association of the socialization of behavioral avoidance and adolescents' use of disengagement coping with anxious/depressed symptoms

	β	t	95% CI		p
			LL	UL	
Step 1	$F(3,113) = 15.82$***; adjusted $R^2 = 0.28$				
Adolescent age	−0.05	−0.65	−0.41	0.21	0.52
Adolescent gender	0.11	1.42	−0.33	1.97	0.16
Maternal BDI-II scores	0.53	6.62***	0.13	0.24	0.000
Step 2	$F(1,112) = 11.76$***; adjusted $R^2 = 0.27$				
Adolescent age	−0.05	−0.65	−0.41	0.21	0.52
Adolescent gender	0.11	1.41	−0.33	1.97	0.16
Maternal BDI-II scores	0.53	6.55***	0.13	0.24	0.000
Adolescent DC	−0.00	−0.03	−17.24	16.76	0.98
Step 3	$F(1,111) = 9.35$***; adjusted $R^2 = 0.27$				
Adolescent age	−0.05	−0.60	−0.40	0.22	0.55
Adolescent gender	0.12	1.45	−0.31	2.00	0.15
Maternal BDI-II scores	0.54	6.58***	0.13	0.25	0.000
Adolescent DC	−0.00	−0.05	−17.48	16.59	0.96
Socialization of B.A.	−0.07	−0.81	−0.88	0.37	0.42
Step 4	$F(1,110) = 7.83$***; adjusted $R^2 = 0.26$				
Adolescent age	−0.05	−0.62	−0.41	0.21	0.54
Adolescent gender	0.12	1.46	−0.31	2.03	0.15
Maternal BDI-II scores	0.53	6.44***	0.13	0.25	0.000
Adolescent DC	−0.05	-0.27	−40.39	30.76	0.79
Socialization of B.A.	−0.09	-0.72	−1.36	0.63	0.47
Adolescent DC × Soc of B.A.	0.06	0.28	−164.04	217.47	0.78

BDI-II beck depression inventory-2, *DC* disengagement coping, *Soc of B.A.* socialization of behavioral avoidance

***$p < 0.001$

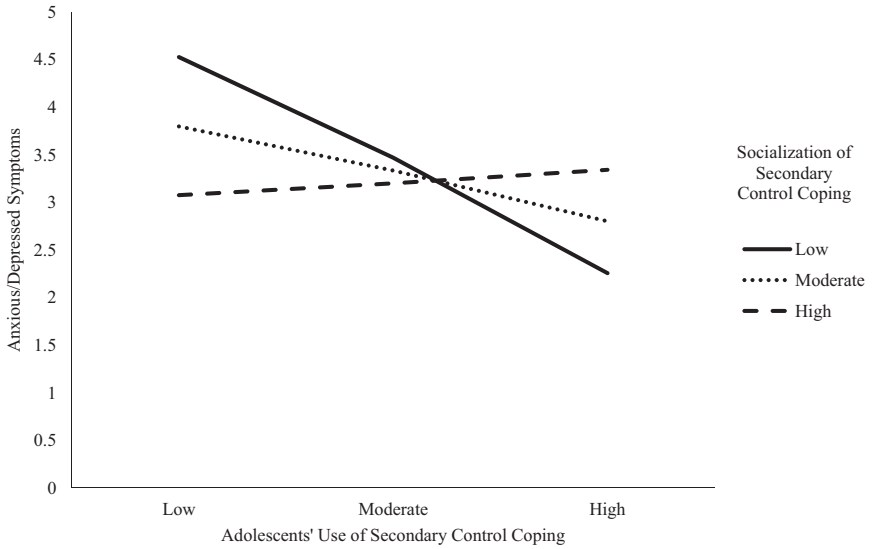

Fig. 1 Association of the Interaction Between the Socialization of Secondary Control Coping and Adolescents' Use of Secondary Control Coping with Anxious/Depressed Symptoms

these contexts, the use of secondary control coping strategies may be the most adaptive.

In addition, these findings suggest that the main effect of maternal coping suggestions on adolescents' adjustment appears to be better explained by adolescents' use of coping. There are a variety of possible interpretations of this finding. First, we utilized a cross-sectional design, and thus, cannot clarify if the impact of maternal coping suggestions

would be more pronounced over time. It is possible that the main effect of maternal socialization of coping was lost by examining its impact at a single point in time. In addition, while maternal socialization of coping is important for adolescents' coping development, adolescents may be receiving impactful coping suggestions in other contexts. For instance, adolescents may also be influenced by coping suggestions from their fathers, friends, and extended family members. Accordingly, maternal coping suggestions may not predict adolescents' adjustment in isolation. Lastly, there are additional moderators of interest that were not examined in the current study. For instance, we did not examine possible interactions between maternal coping suggestions and levels of peer stress, the socialization of different types of coping (e.g., how maternal engagement coping suggestions interact with disengagement coping suggestions to predict adolescent adjustment), or adolescents' gender. As some of these factors have been important predictors in prior research (e.g., Abaied and Rudolph 2010a), it is possible that more pronounced effects for maternal coping suggestions may have emerged under varying contexts of peer stress and/or types of coping suggestions. In addition, given our finding that the socialization of secondary control coping was negatively correlated with anxious/depressed symptoms for females, but not for males, future research should examine possible gender differences in these associations.

Although support was found for the third hypothesis, (i.e., that the relationship between adolescent coping and anxious/depressed symptoms would be associated with the degree to which mothers socialize their adolescents to cope), the direction of these effects was counter to what was expected. Specifically, we hypothesized that under conditions of high support (e.g., more maternal engagement coping suggestions), adolescents would use more effective coping strategies, and thus, experience fewer symptoms of anxiety and depression. With regard to secondary control coping, the interaction of adolescents' coping with maternal socialization of secondary control coping was associated with adolescents' adjustment. Specifically, at low levels of socialization, adolescents who used more secondary control coping strategies reported decreased symptoms of anxiety and depression (Fig. 1). Notably, this is the first study to examine the interaction between maternal coping suggestions and adolescent coping in association with their symptoms of depression and anxiety. Findings suggest that under lower levels of maternal socialization of coping, adolescents who utilize more effective coping strategies have lower symptoms of anxiety and depression. While in contrast with the original hypothesis, these findings may be indicative of the psychological well–being of adolescents who received greater coaching from their mothers. For instance, adolescents who received greater amounts of maternal coping suggestions may have already been experiencing heightened symptoms. In this context, mothers may have responded to their adolescents' distress by increasing the amount of coaching they provide.

Exploratory analyses suggest that daughters who receive more secondary control coping suggestions have fewer symptoms. However, the three-way interaction suggests that while encouraging females to use these strategies is adaptive, daughters' symptoms are most strongly associated with how much they *use* secondary control coping. Namely, it appears that if females are already largely using secondary control coping, the effect of encouraging them to use these strategies diminishes. While it is unclear why this effect was specific to females, it is well-established that female adolescents are at a heightened risk for internalizing symptoms (e.g., Hankin and Abramson 2001; Hankin et al. 1998). Thus, using more typically effective forms of coping (e.g., secondary control coping) may have a stronger buffering effect in the presence of greater risk. These findings align with broader study implications that while there is a relationship between maternal coping suggestions and adolescents' internalizing symptoms, there is a stronger effect associated with the coping strategies that adolescents use. While maternal coping suggestions are important for the development of emotion regulation in youth, the coping strategies adolescents employ appear to have the strongest association with their psychological well–being. Exploratory analyses expand on these findings, providing novel evidence that the association of adolescent coping with internalizing symptoms may be bolstered or tempered by the level of coaching that female youth receive from their mothers.

We found no support for the second or third hypotheses for primary control and disengagement coping. Notably, the majority of studies on this topic (e.g., Abaied and Rudolph 2010a, b, 2011; Abaied et al. 2014; Monti et al. 2014) have not distinguished between the socialization of secondary and primary control coping, instead grouping them together as "engagement coping." This crucial distinction may clarify the lack of findings with regard to primary control coping, as primary and secondary control coping suggestions may have a differential impact on adolescents' adjustment. Further, we examined the relationship between maternal behavioral avoidance suggestions, adolescents' use of disengagement coping, and adolescents' adjustment. However, behavioral avoidance is a singular strategy within the larger category of disengagement coping. Thus, the effects associated with maternal behavioral avoidance suggestions may not be equivalent to that of disengagement coping suggestions more broadly. This may explain our lack of findings with regard to the interaction between maternal behavioral avoidance suggestions and adolescents' use of disengagement coping.

Limitations and Future Directions

The current study had several limitations that can be addressed in future research. First, because the study was cross-sectional, causal inferences cannot be made regarding the relations between maternal coping suggestions, adolescents' coping, and their adjustment. In light of findings suggesting that adolescents' use of secondary control coping is most adaptive in the context of lower levels of maternal coping suggestions, it would be useful to clarify if adolescents who received more coping suggestions were already experiencing heightened levels of anxiety and depression. In addition, effective coping may be contingent on the timing or perceived inevitability of the stressor. Extant research supports the utility of anticipatory coping, or efforts to manage the stress associated with imminent threats (Schwarzer and Luszczynska 2008). It is possible that mothers who socialize their children to cope in preparation for common stressors, such as conflict with peers, may impart a greater influence on their children's emotional development. Future research utilizing longitudinal designs is necessary to clarify if proactive maternal encouragement of secondary control coping strategies may be more adaptive for youth. Further, longitudinal designs would allow for temporal precedence and sequence to test mediation models among parental socialization of coping, adolescent coping, and adjustment (Maxwell and Cole 2007). Second, the socialization of coping measure used in the current study, the Socialization of Coping Questionnaire (Abaied 2010; Abaied and Rudolph 2010a, b), only examined socialization of behavioral avoidance as opposed to assessing disengagement coping suggestions more broadly. Confirmatory factor analyses have supported a three-factor structure including primary control, secondary control, and disengagement coping (e.g., Compas et al. 2006; Connor-Smith et al. 2000; Connor-Smith and Calvete 2004; Wadsworth et al. 2004; Yao et al. 2010). Within this framework, behavioral avoidance constitutes only a single strategy within the broader category of disengagement coping. As such, examining the relations between maternal behavioral avoidance suggestions and adolescents' use of disengagement coping more broadly may inadequately capture the impact of other disengagement coping suggestions (e.g., cognitive avoidance, wishful thinking, denial). In addition, the majority of prior research has failed to distinguish between the socialization of primary and secondary control coping suggestions (e.g., Abaied and Rudolph 2010a, b, 2011; Abaied et al. 2014; Monti et al. 2014). However, findings from a recent study that made this distinction suggest that primary control and secondary control suggestions may differentially influence youth adjustment (Stanger et al. 2018). Future research would benefit from a measure of socialization of coping that differentiates between primary, secondary, and disengagement coping.

Third, the current study used a self-report measure to assess maternal coping suggestions, which may be susceptible to social desirability bias. For instance, mothers may be more reluctant to report encouraging their adolescents to use less traditionally effective forms of coping, such as behavioral avoidance. Future research using observational, in-the-moment coaching may circumvent potential biases associated with self-report questionnaires. Fourth, the current study found preliminary evidence for racial/ethnic differences in the coping strategies that mothers socialize their adolescents to use in response to peer stress, although the effect was small in magnitude. Future research should focus on recruiting larger samples of underrepresented populations to better understand coping socialization in the context of race, ethnicity, and parent educational attainment. Fifth, in efforts to employ a homogenous sample of parental socialization of coping, the current study focused on mothers. However, a growing body of research suggests that fathers also support their children's coping development (e.g., Cassano et al. 2007; McDowell and Parke 2005; McElwain et al. 2007). Further, fathers and mothers may provide disparate types of coping suggestions which may, in turn, be perceived and responded to differently by youth (Zeman and Shipman 1997). However, to our knowledge, no studies to date have specifically examined the longitudinal contributions of fathers' coping suggestions. As such, future studies may benefit from including measures of paternal socialization of coping. Last, there were interactions between gender, socialization of secondary control coping, and the use of secondary control coping in association with symptoms. While this may be related to females' heightened risk for internalizing disorders, future research should clarify why there may be gender differences in the relationship between coping, socialization of coping, and internalizing psychopathology.

In sum, the present research suggests that maternal secondary control coping suggestions are related to adolescents' emotional well–being, though adolescents' use of these strategies best predicts their adjustment. Furthermore, the relationship between adolescents' coping strategies and internalizing symptoms appears to be associated with the extent to which mothers encourage secondary control coping. Findings emphasize a need for researchers to further clarify the impact of maternal coping suggestions on youth coping and adjustment as they navigate interpersonal stressors encountered during adolescence.

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Compliance with Ethical Standards

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

Ethical Approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

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

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