Links among mothers' dispositional mindfulness, stress, perspective-taking, and mother-child interactions

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Abstract

Objective: How parents think about their internal states and about their emotional experiences impacts their parenting. Parents who demonstrate dispositional mindfulness, the capacity for open awareness and attention in the present moment, experience lower levels of stress. The present study assessed whether mindful parents may show more positive parenting and be perceived more favorably by their children in parent-child interactions. **Methods:** One hundred and twenty-seven mothers completed measures assessing mindfulness and stress, and their early adolescent children (M age=10.87 years; $SD=0.90$) completed measures assessing their mothers' perspective-taking, and disclosure to and conflict intensity with their mothers. **Results:** Using path analysis, we found that mothers' greater dispositional mindfulness was associated with adolescent reports of greater maternal perspective-taking through less maternal stress. Further, mothers' greater dispositional mindfulness was associated with more adolescent disclosure to mothers and less intense conflict through less maternal stress and greater maternal perspective-taking. **Conclusions:** Our results suggest that mothers' stress and perspective-taking may indirectly link parent mindfulness and adolescent perceptions of parent-adolescent communication.

Keywords: parenting; stress; parent-child communication; mindfulness; perspective-taking

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Behavior in social settings is guided by how individuals perceive and interpret their own thoughts and feelings, with these perceptions affecting their actions (Bandura, 1989). In family contexts, parents' understanding of their own thoughts and feelings can influence their experiences with their children, informing their parenting behaviors. As an example, Abidin (1992) proposed a model of the determinants of parenting behavior, in which parents' personality characteristics and individual differences are suggested to impact parenting behaviors through parenting stress. Parenting behaviors, in turn, influence children's behavior, and the two agents bidirectionally interact to inform family functioning (Grusec, 2011; Kuczynski et al., 1997). Thus, understanding parents' dispositional characteristics, such as their mindfulness in experiencing their internal states and experiences, is crucial to understanding the precursors of successful family functioning. In the present study we considered links between mothers' mindfulness and positive family relationships as mediated by stress and by their children's perceptions of their mothers' ability to take their perspective.

Many definitions of mindfulness have been proposed, and operationalization of mindfulness may depend on whether the construct is understood as a clinical intervention component or as a trait or disposition (Bishop et al., 2004). Dispositional mindfulness, which is the focus of the present study, involves the awareness of and regulation of one's emotional experiences and attentiveness to surroundings and situational cues in the present moment, rather than being immersed in past memories or future expectations (Baer et al., 2006; Farb et al., 2012). As a dispositional construct, mindfulness is characterized as a cognitive process that occurs in an individual alone, as a trait or overall tendency, with implications for functioning in relational or social situations (Baer et al., 2006; Segal, 2007). Shapiro et al. (2006) suggested in their model of the mechanisms of mindfulness that present-orientation and non-judgment of self that are evident in mindfulness are possible because mindful individuals are able to inhibit the automatic process of self-evaluation. Accordingly, greater levels of dispositional mindfulness

facilitate emotion regulation, cognitive flexibility, non-judgmental attitudes, and less emotional reactivity about the present situation (Baer et al., 2006; Duncan et al., 2009).

Theories of mindfulness and reappraisal, such as the Mindfulness-to-Meaning model, have proposed that individuals who cultivate mindfulness may have an increasing capacity for regulating their emotions and reappraising stressful situations without becoming overcome with distress or negative emotion (Garland et al., 2015a). Numerous studies have supported this model for adults in general, pointing to a strong link between dispositional mindfulness and stress regulation, with individuals high in mindfulness being less likely to react negatively in potentially stressful situations (e.g., Cash & Whittingham, 2010; Soysa & Wilcomb, 2015). For example, adults with high dispositional mindfulness have been found to experience reduced anxiety and depression when exposed to stress-inducing events (Bergin & Pakenham, 2016).

Further, the Mindfulness-to-Meaning model has proposed that, over time, the ability to reappraise situations facilitates adaptive and prosocial behavior in interpersonal contexts, potentially due to heightened attentiveness to and awareness of one's environment (Garland et al., 2015a). Research in support of this link has consistently demonstrated that dispositional mindfulness is directly linked to perspective-taking (e.g., Beitel et al., 2005; Jennings, 2015; Pratscher et al., 2018; Trent et al., 2016). Additionally, it has been suggested that mindful individuals experience less distress in the face of strained and stressful social situations and may have more cognitive and emotional energy to dedicate to interpersonal competencies, such as perspective-taking (Block-Lerner et al., 2007). Indeed, Dekeyser et al. (2008) have found that mindfulness was related to lower personal distress and greater engagement in social situations in both undergraduate and parent samples. Potentially, because of their ability to cope with negative events and their capacity for perspective-taking, individuals who are high in mindfulness exhibit better communication in intimate relationships (Barnes et al., 2007), and report having better social relationships in general (Tangney et al., 2004). However, there is limited research linking these concepts in parents: a better understanding of these links would provide insight into how mindfulness is linked to interpersonal perspective-taking in family settings.

The link between mindfulness and perspective-taking may be especially important to understand in the parenting domain because of its implications for positive parent-child relationships. Based on the Mindfulness-to-Meaning model reviewed above (Garland et al., 2015a; 2015b), individuals with high levels of dispositional mindfulness likely react less negatively in stress-inducing situations, and should have more cognitive resources to effectively regulate their appropriate reactions and corresponding behaviors when they interact with others. This capacity for positive social behaviors may extend to mindful individuals' role as socializing agents, that is, parents, ultimately facilitating more positive relationships within the family. This proposal is supported by various models of mindful parenting. For example, Duncan et al.'s (2009) model of mindful parenting proposed that when parents use awareness and acceptance, facets of mindfulness, during caregiving interactions with their children, they can facilitate greater satisfaction with and a better quality of family relationship. Additionally, Dumas (2005) proposed in a mindfulness-based model of parent training that targeting intrapersonal mindfulness skills, such as nonjudgment of self, can improve parents' ability to inhibit the harmful automatic process of self-evaluation in parenting. These models support proposals that parents who are mindful may ultimately impact family processes.

In line with these models of mindfulness in parenting, research has shown that there are significant associations between dispositional mindfulness in parents, their appropriate parenting behaviors, and children's positive functioning. For example, Parent et al. (2010) found that mothers' and fathers' dispositional mindfulness was related to ratings of their adolescent children's lower internalizing problems through the parents' reduced depressive symptoms. Siu et al. (2016) found in a study of mothers of preschoolers that mindfulness was related to greater mother-reported confidence, involvement, stable attachment, and lower frustration with the mother-child relationship. Siu et al. found that these parenting characteristics, in turn, were related to mothers' reports of various child outcomes, including fewer peer problems, lessened hyperactivity, and greater prosocial tendencies. These links between parent-reported dispositional mindfulness, parenting, and positive child outcomes have been replicated with both mothers and fathers in a number of recent studies (Han et al., 2019; Parent et al., 2016).

There is limited research on the role of parents' perceived stress and their successful perspective-taking as indirectly linking parents' dispositional mindfulness and children's functioning. Echoing research findings with non-parent adults (reviewed above), studies have found that mothers' and fathers' dispositional mindfulness is negatively linked to stress, and positively linked to parenting styles that promote perspective-taking (e.g., Gouveia et al., 2016). Thus, within parent-child relationships, it may be expected that high parental dispositional mindfulness enables more positive thoughts and behaviors on the part of parents, enhancing the likelihood that children, as a result, will benefit with respect to positive relationships with their parents.

Two important markers of positive family relationships involve communication in the form of children's voluntary disclosure to parents about their activities and whereabouts, as well as satisfactory resolution of parent-child conflict (Miller et al., 2000). With respect to disclosure, Lippold et al. (2015; 2019) found that mindful parenting was linked to greater disclosure by youth, with that link being mediated by youth perceptions of mother-youth affective relationship quality. This finding suggests that the children of mindful parents may disclose more, and that they may possibly also have less intense conflicts because of positive emotional interactions with their parents.

One of the facilitators of adolescent disclosure is mothers' demonstrated willingness to understand their children's perspective (Papini et al., 1990; Soenens et al., 2006; Wuyts et al., 2018). For example, Disla et al. (2019) reported that adolescents who perceived maternal validation, understanding, and interest in response to their disclosure subsequently were quicker to disclose more information compared to those who perceived mothers' negative reception. Additionally, Chaparro and Grusec (2015) found in their study of early adolescents that disclosure to parents mostly stems from a desire to feel better or needing advice. Presumably, when adolescents feel that their parents are willing to take their perspective, they also perceive that their parents can appropriately comfort them and provide guidance in a constructive manner. Considering the links among mindfulness, stress, and perspective-taking proposed above, it may be expected that mindful parents experience less stress and are also perceived by their children as taking their perspective, thereby creating an open atmosphere for disclosure.

Family conflict is related to detrimental outcomes for adolescent children, including internalizing and externalizing problems, and suicide ideation (Barber & Delfabbro, 2000; Shagle & Barber, 1993). Parents' ability to take the perspective of their adolescent children may be an important factor that attenuates parent-child conflict, making it less hostile and less frequent. Several studies have found that mothers' perspective-taking and demonstrated understanding of their adolescent children is related to lower rates of conflict (e.g., Crocetti et al., 2016; Lundell et al., 2008). When adolescents perceive that their parents can understand their perspective, they may feel that disagreements can be discussed openly and will not be met with hostility. In this way, constructive communication between parents and their adolescent children ensures that the parent-child relationship remains harmonious even in the face of conflict (Sillars et al., 2004). Mindfulness, reduced stress, and children's perceptions of their parent as understanding, then, may promote more positive approaches to conflict.

The present study was designed to assess the links between mothers' dispositional mindfulness and family communication through mothers' stress and perspective-taking. We used a single path model (the hypothesized model is depicted in Figure 1) to simultaneously test two hypotheses: (1) mothers' mindfulness would be directly associated with adolescent perceptions of mothers' greater perspective-taking, as well as indirectly associated through lower maternal stress; and (2) mothers' mindfulness would be indirectly associated with adolescents' greater disclosure and lower mother-child conflict intensity through lower stress and adolescent perceptions of mothers' greater perspective-taking. We used a sample of early adolescents to test these hypotheses given the importance of the parent-child relationship as children move into this phase of development. At this time adolescents tend to be increasingly more selective about their voluntary disclosure to parents (Darling et al., 2006) and parent-child conflict is higher than in middle or late adolescence (Laursen et al., 1998). Early adolescence, then, is a particularly important time for the facilitation of positive family functioning.

Method

Participants

One hundred and forty-three families from a large Canadian city were contacted with a request to participate in the study, with 127 families agreeing to do so. Adolescents ranged in age from 9.5 to 12 years of age ($M = 10.87$, $SD = 0.90$), and were nearly evenly divided by gender (52.8% female).

Adolescents were of European ethnic origin (47.2%), mixed ethnic origins (34.6%), South Asian origin (4.7%), East Asian origin (4.7%), or other monoracial backgrounds (8.8%). Mothers were not adoptive or step-mothers, and ranged in age from 28 to 55 years ($M = 44.93$ years, $SD = 4.12$). Most mothers (91.3%) had completed college or university and were employed (88.1%). Most mothers were married (82.7%).

Procedure

All procedures in this study were approved by the university's research ethics board. Participants were recruited from a departmental database housing contact information for families who had indicated interest in research participation. Mothers were contacted by phone, and those interested in participating along with their children were scheduled for a one-hour visit to the lab. During the phone call, mothers were asked to provide their email addresses so they could be sent part of an online questionnaire for completion at home, prior to the lab visit with their adolescent children. At the lab, mothers and adolescents were shown to two different rooms where they completed measures as described below. At the end of the lab visit, mothers and adolescents were debriefed and presented with a \$40 gift card as an honorarium for their participation.

Measures

Mothers' mindfulness. Mothers' mindfulness was measured using the 39-item Five Facet Mindfulness Questionnaire (FFMQ; Baer et al., 2006). Mothers completed this measure at home. The FFMQ assesses mindfulness using five subscales: observing (e.g., "When I'm walking, I deliberately notice the sensations of my body moving"), describing (e.g., "Even when I'm feeling terribly upset, I can find a way to put it into words"), acting with awareness (e.g., "I rush through activities without being really attentive to them"), nonjudging (e.g., "I tell myself that I shouldn't be thinking the way I am thinking"), and nonreactivity (e.g., "In difficult situations, I can pause without immediately reacting"). Mothers rated each item on a 5-point Likert scale ranging from 1 (does not describe me) to 5 (describes

me extremely well). Ratings on the 39 items of the FFMQ were summed to create an overall mindfulness score. Psychometric properties of the FFMQ have been demonstrated in previous work (Baer et al., 2006; Bohlmeijer et al., 2011; Christopher et al., 2012). Inter-item reliability was calculated in the present study using Cronbach's alpha (α), with values above .70 satisfactory, values above .80 good, and values above .90 excellent (Bland & Altman, 1997). For FFMQ in the present sample, reliability was good, $\alpha = .88$.

Mothers' stress. Mothers' stress was measured using the 10-item Perceived Stress Scale (PSS; Cohen & Williamson, 1988). Mothers completed this measure at the lab. The PSS assesses everyday perceptions of stress over the month prior to answering the scale (e.g., "In the last month, how often have you found that you could not cope with all the things that you had to do?"). Participants rated each item on a 5-point Likert scale ranging from 1 (never) to 5 (always), and the average of all items yielded a final score of stress. The psychometric properties of the PSS have been demonstrated in previous work (e.g., Lee, 2012; Roberti et al., 2006). In the present sample, inter-item reliability was good, $\alpha = .87$.

Adolescent perceptions of parental perspective-taking. Adolescent children's perceptions that their mothers understood and took their perspective was assessed at the lab using an adapted version of the Self-Dyadic Perspective Taking scale (SDPT; Long, 1990). The adaptation used in the present study was created by Gondoli and Silverberg (1997) to assess parents' perspective-taking in parent-child dyadic relationships. In the present study, the 15-item scale was further modified to target adolescents' perceptions of mothers' perspective-taking (e.g., "My mom tries to look at my side of a disagreement before she makes a decision"). Adolescents rated each item on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree), and all item scores were summed for a total score. Previous uses of the SDPT scale with mothers have demonstrated good psychometric properties (Gondoli & Silverberg, 1997; Lundell et al., 2008). Inter-item reliability was excellent, $\alpha = .93$.

Adolescent disclosure to mothers. Adolescents' disclosure to their mothers was assessed at the lab using a 6-item measure of adolescents' tendency to talk to their mothers about several areas of disclosure. This measure included topics of disclosure captured across existing disclosure measures, including distressing events, rule transgressions, and failure to be prosocial (Chaparro & Grusec, 2015;

Kil et al., 2018), as well as everyday events such as school activities and friendships (Kerr & Stattin, 2000). Adolescents were asked to indicate how often they talked about each of the listed topics with their mothers. Two items assessed events that occur at and outside of school (“Things that happen at school”, “Things that happen outside of school”), one item assessed friendships (“Your friends and/or what you do with them”), one item assessed events that elicit distress (“When you are worried or upset about something”), one item assessed rule transgressions (“When you got into trouble”), and one item assessed failure to be prosocial (“When you did not help someone who could have used your help”). Participants rated each item on a 5-point Likert scale ranging from 1 (never) to 5 (always). Scores from the 6 items were averaged to create a single disclosure score. Inter-item reliability of the scale was good, $\alpha = .81$, and exploratory factor analysis resulted in a single-factor model with item factor loadings ranging from .68 to .78, suggesting acceptable convergence across items in measuring disclosure.

Adolescent report of mother-adolescent conflict intensity. Adolescent perceptions of the intensity (or heatedness) of conflicts with their mothers was assessed at the lab using a 20-item interview adaptation of the Issues Checklist (IC; Prinz et al., 1979). The original measure comprises a list of 44 issues that may lead to disagreement or conflict between parents and adolescents (e.g., homework, fighting with brothers or sisters, curfew, allowance, etc.). Twenty-four of the issues from the original measure were either combined into one overarching category (e.g., “Which clothes to wear”, “How neat clothes look”, and “Selecting new clothes” were combined into “Clothes”) or were omitted because they were deemed not appropriate for the present sample (e.g., “Earning money away from the house”, “Sex”).

The researcher asked adolescents whether each issue was one that they had discussed with their mothers in the last four weeks. For issues discussed in the last four weeks, adolescents were asked to indicate the intensity or heatedness of the discussions as calm (coded as 1), a little heated (2), or heated (3). Responses were assigned a code of 0 if there were no discussions in the last four weeks. An average of the intensity of each of the issues that were discussed in the last four weeks was obtained by summing the intensity scores, then dividing by the total number of issues that were discussed.

Data Analysis

Mplus was used to simultaneously model the two outcome variables of adolescent disclosure and conflict intensity using path modeling. Although no significant correlations were found between hypothesized predictors and outcome variables, and thus not added as parameters to the path model, indirect effects were tested following the bootstrapping recommendations by Hayes (2009; 2015). Significance and size of effects were estimated using bootstrapping with 10,000 samples. When the confidence interval (CI) with bootstrapping does not include zero, the mediating effect is considered significant (Preacher & Hayes, 2008). We used 95% confidence intervals in the present study. Overall missing data at the item level was 1.13%. Incomplete responses at the item level led to missing data during analysis, as scale means were not calculated when participants had missing item responses. This resulted in varying sample sizes across variables (see Table 1). For FFMQ, 18 mothers' data were missing on at least one item (14.17%); for SDPT, 9 mothers' data were missing on at least one item (7.09%); and for PSS and adolescent disclosure, 1 mother's and 1 adolescent's data respectively were missing on at least one item (0.79%). Full information maximum likelihood estimation was used to account for missing data (Muthén, 1994). Child age was controlled in the model due to its correlation with mothers' perceived stress. Two alternative models and a reverse directional path model were tested in which the order of associations among variables was manipulated in order to eliminate other explanations for the outcome variables (Iacobucci, 2009). For all models, model fit statistics indicating acceptable model fit were as follows: chi-square (χ^2) *p*-value above .05; Comparative Fit Index (CFI) above .90; root mean square error of approximation (RMSEA) below .08; and standardised root mean square residual (SRMR) below .07 (Hooper et al., 2008; Hu & Bentler, 1999).

Results

Descriptives, zero-order correlations, and sample sizes are presented in Table 1. Mothers' mindfulness was negatively correlated with stress. Mothers' stress was also negatively correlated with adolescents' perception of mothers' perspective-taking and adolescent disclosure, and positively correlated with conflict intensity. Adolescents' perception of mothers' perspective-taking was positively

correlated with disclosure to mothers and negatively correlated with conflict intensity. No other correlations reached significance.

The tested path analytic model (Figure 2) showed good fit, $\chi^2 (10) = 13.005, p = .223$, RMSEA = .049 (C.I. 95%: .000, .114), CFI = .959, SRMR = .054. We compared this model against the two alternative models (Figure 3). In the first alternative model (Figure 3 Panel A), the placement of mothers' mindfulness and stress were switched, so that mindfulness indirectly linked stress and adolescent-perceived perspective-taking. This model demonstrated poor model fit, $\chi^2 (6) = 19.619, p = .003$, RMSEA = .134 (C.I. 95%: .071, .203), CFI = .814, SRMR = .095. In the second alternative model (Figure 3 Panel B), in addition to the changes reflected in Panel A, we additionally reversed the directionality of the model, with adolescent disclosure and mother-adolescent conflict intensity serving as the independent variables. This model also demonstrated poor model fit, $\chi^2 (5) = 47.172, p < .001$, RMSEA = .259 (C.I. 95%: .194, .329), CFI = .437, SRMR = .122. We additionally tested a reversed path model, which demonstrated good fit, $\chi^2 (11) = 14.242, p = .220$, RMSEA = .048 (C.I. 95%: .000, .111), CFI = .956, SRMR = .058, suggesting the order of variables in either direction fit the data better than the alternative models. However, our final model fit the data better compared to all three other models. As seen in Table 2, the difference in Aikake Information Criterion (AIC), Bayesian Information Criterion (BIC), and sample-size adjusted BIC (aBIC) between the final model and the alternative and reversed models was greater than 10, indicating better fit (see Table 2; Anderson & Burnham, 2002; Fabozzi et al., 2014). Overall, we found that the order of associations among variables in the final tested model was better fitting to the data compared to the two alternative models, and based on model information criteria, compared to the reversed model.

Table 3 presents all path estimates, p -values, and bootstrapped confidence intervals for the final tested model. As depicted in Figure 2, mothers' mindfulness was associated with lower stress, and lower stress was associated with greater perceived perspective-taking. Mothers' mindfulness was not directly associated with perceived perspective-taking. However, the specific indirect effect of mothers' mindfulness on greater adolescent-perceived mothers' perspective-taking through mothers' stress was

significant, $\beta = .155$, $SE = .055$, $p = .004$, 97.5% CI = .072, .251. In turn, when adolescents perceived that their mothers engaged in better perspective-taking, they were more likely to disclose to their mothers, as well as to report having less intense conflicts with their mothers. The specific indirect effect of mothers' mindfulness on greater adolescent disclosure through less stress and greater adolescent perception of maternal perspective-taking was significant, $\beta = .078$, $SE = .032$, $p = .013$, 97.5% CI = .033, .135. Additionally, the specific indirect effect of mothers' mindfulness on adolescent reports of conflict intensity through the same mediators fell just short of significance, $\beta = -.037$, $SE = .020$, $p = .065$. Moreover, the bootstrapped confidence interval did not contain zero, 97.5% CI = -.073, -.009, indicating a significant indirect effect (Gardner & Altman, 1986; Wood, 2005).

Discussion

The present study examined the links between mothers' dispositional mindfulness, their stress and perspective-taking (as perceived by their adolescent children), and associated child outcomes. Specifically, we found an indirect association between mothers' mindfulness and their children's perception of their (mothers') perspective-taking, through mothers' perceived stress. We additionally found indirect effects of mothers' mindfulness on adolescents' willingness to disclose to their mothers and intensity of mother-adolescent conflict, through mothers' stress and their children's perceptions of their perspective-taking.

Mothers' Mindfulness, Stress and Perspective Taking

The link between greater mindfulness and less stress has been thoroughly established in existing research (e.g., Prakash et al., 2015; Tomlinson et al., 2018; Weinstein et al., 2009). Beyond echoing existing research on the mindfulness-stress link, the present findings highlight the importance of dispositional mindfulness as a potential skill facilitating reduced levels of maternal stress, which, in turn, may impact caregiving. These findings extend existing models of mindful parenting, suggesting that the link between mothers' mindfulness and caregiving behavior could potentially be indirect, given the lack of significant correlation and direct path between the two constructs. Indeed, considering that stress is negatively related to emotion regulation, cognitive efficiency, and attention (e.g., Koole, 2009; Linden et

al., 2005), it is likely that mindful mothers' low levels of stress allow them to be less cognitively distracted and more likely to engage in effective parenting behaviors.

As argued in the Mindfulness-to-Meaning model (Garland et al., 2015a; 2015b), a central skill in mindfulness is sustained and regulated attention to and awareness of the present, a skill that may provide more cognitive resources for emotion regulation. Particularly for mindful mothers, their reduced experience of stress may initiate a cascade of other cognitive and interpersonal processes, including perspective-taking. Highly mindful individuals experience lower cognitive load as a result of lower stress, freeing up the ability to attend to important or relevant social cues (Anicha et al., 2012; Oberle et al., 2012). Indeed, cognitive load and negative emotional arousal are inversely linked to social skills, including perspective-taking (e.g., Davis et al., 1996; Roxβnagel, 2000). It may be the enhanced capacity to deal with stressful distractions that allows mindful mothers to take their children's perspective (or, at least, to be seen as doing so by their children).

Although the indirect effect of mothers' mindfulness on adolescent-perceived mothers' perspective-taking through stress was significant, the direct association between mindfulness and perspective-taking was not significant. The latter lack of association is contrary to previous findings which have suggested that the two constructs should be significantly linked (Pratscher et al., 2018; Trent et al., 2016). Our contrary findings may have been a result of our measure of maternal perspective-taking, which was adolescent-reported. Previous studies of the mindfulness and perspective-taking link have been based solely on self-report data, which frequently yields high intercorrelations among related constructs (Podsakoff & Organ, 1986). On the other hand, parent and child reports of parenting behavior can be discrepant, resulting in low correlations and differences in mean ratings (Korelitz & Garber, 2016). Adolescent estimations of their mothers' perspective-taking in the present study may have been largely based on the maternal caregiving behaviors exhibited by mothers who are low in stress (e.g., van der Kaap-Deeder et al., 2019). Overall, our results suggest that mothers' capacity to utilize their mindfulness skills to regulate their stress may have implications for how they behave with their children, impacting their children's perceptions of maternal perspective-taking.

Links to Adolescent Disclosure and Mother-Adolescent Conflict

In the present study, adolescent children who perceived greater maternal perspective-taking were more likely to report disclosure to and less intense conflict with their mothers. Although simple correlations depicted no links between mothers' mindfulness and adolescent reports of parenting or family communication, the indirect effects connecting these constructs were significant. These indirect links suggest that having high dispositional mindfulness may ignite a cascade of emotional and behavioral outcomes that facilitate positive relationships in the family. Research pertaining to mothers' self-reports of perspective-taking has pointed to many positive outcomes of perspective-taking for parenting behavior (e.g., less power-assertive parenting practices; Clark et al., 2000), and for child outcomes (e.g., children's greater perspective-taking skills; Farrant et al., 2012; van Lissa et al., 2014). Adolescents' perceptions of mothers' perspective-taking likely has similar effects on child outcomes; that is, when adolescents perceive their mothers' attempts to take their perspective, they might ultimately model successful perspective-taking themselves. This modeling effect may partly contribute to the voluntary disclosure reported by adolescents in the present study, and the less emotionally intense conflicts experienced between mothers and adolescent children.

Alternatively, adolescents perceiving mothers' willingness to take their perspective may feel that conflicts with and disclosure to their mothers will be met with positive responses. Adolescents are more likely to continue to disclose to and discuss different opinions with mothers when mothers respond with support and understanding (Keijsers, et al., 2009; see review by Branje, 2018). Given the present results, the heightened perspective-taking by mindful mothers may be linked to adolescent expectations that their mothers' response to disclosure will be constructive and cooperative, while conflicts will be less intense.

Limitations and Future Directions

Limitations of the present study include the fact that data were cross-sectional. As such, the directions of causality in the path model are not certain. However, a model testing the reverse direction of arrows (e.g., adolescent disclosure and conflict intensity to mindfulness) showed poorer model information criteria values (though model fit was comparable), while two alternative models were much

worse fitting to our data (see Figure 3; Bollen & Pearl, 2013). Although these additional models help to establish greater confidence in our final model, longitudinal data is needed to be more certain regarding the directionality and potential causality of effects between constructs. Additionally, transactional models of socialization and corresponding research have demonstrated that parents and children impact one another bidirectionally (Kuczynski et al., 1997; Pardini, 2008), meaning that adolescent behaviors may inform maternal mindfulness. In order to address these issues, future studies need to employ a longitudinal design to better infer the direction of associations among mindfulness in mothers, their parenting behavior, and resulting adolescent outcomes over time.

Families in this study were primarily middle to upper-middle class, with the majority of mothers being employed and well-educated. Considering that mothers of lower income families usually experience greater stress (e.g., Pinderhughes et al., 2000) and lower mindfulness (Bränström et al., 2011), the present findings may not be found in a comparable lower-income sample. The positive correlation between mothers' stress with child age could be a reflection of the latter's greater likelihood of young children not having reached pubertal status with its attendant implications for withdrawal and family conflict (Laursen et al., 1998). Future work could assess this important variable.

The present study examined the links among mothers' dispositional mindfulness, their cognitive capacities, and children's perceptions of and communication with their mothers. Future research could include parenting variables such as autonomy control and warmth. It is possible, for example, that mindful mothers who are less stressed show greater empathy or offer more choice in the case of conflict, leading their adolescent children to believe that their perspectives are considered. Future research needs to integrate these parenting measures to highlight the cognition-action-outcome links between mindful parents and their children. Another limitation of the present study is that it included only self-report questionnaires. Observational measures of parent-child interactions could provide useful information regarding familial communication and behavior (Aspland & Gardner, 2003). Future research could measure conflict intensity or disclosure between mothers and adolescent children using parent-child interaction tasks that target these constructs.

Finally, adolescent disclosure and conflict intensity ratings were collected only with respect to mothers. Previous research suggests that adolescents are somewhat more likely to disclose to mothers than to fathers (see Chaparro & Grusec, 2015; Smetana et al., 2006), and that fathers' knowledge of their children based on child disclosure and observation is more influenced by child characteristics than father characteristics (Crouter et al., 1999). That is, potentially, child characteristics such as emotional expressivity may be better in facilitating child disclosure compared to father characteristics such as mindfulness or stress. Less is known about parental differences in adolescent-perceived conflict with parents, although conflict affect appears to be more negative between mothers and children as they grow older than between fathers and children (Treutler & Epkins, 2003). Further research is required to better understand the differences between mothers' and fathers' mindfulness on their parenting behavior and parent-child communication.

The present study demonstrates that mothers' dispositional mindfulness is indirectly linked to adolescent within-family communication through mothers' stress and perspective-taking. Adolescents who perceive that their mothers are high in perspective-taking are more likely to disclose to them, and to see their conflicts with their mothers as less intense. Researchers have called for studies of parental cognitive factors that might facilitate greater control over the emotional fluctuations that lead to negative parenting behaviors (e.g., Crandall et al., 2015). The present study points toward a potentially important role of dispositional mindfulness as a maternal cognitive factor that facilitates greater coping and self-regulation, skills that may be related to improved parental interpersonal competence (in the form of perspective-taking), and positive child outcomes.

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Table 1.

Correlations for All Study Variables

	<i>N</i>	<i>M</i>	<i>SD</i>	2	3	4	5	6	7
1. M Mindfulness	109	140.41	16.35	-.41**	-.01	.09	-.15	-.03	-.00
2. M Stress	126	3.08	.24		-.25**	-.23*	.23*	.22*	.04
3. A Perceived M Perspective Taking	118	55.84	10.85			.50**	-.25**	.03	-.03
4. A Disclosure	126	3.21	.86				-.09	.09	.00
5. A Conflict Intensity	127	1.59	.35					.06	-.06
6. A Age	127	10.87	.90						-.16
7. A Gender	127	-	-						

Note. * $p < .05$, ** $p < .01$. M = Mother. A = Adolescent. *N*s differ across variables due to missing values.

Table 2.

Model fit statistics for the final tested model and alternative models.

	AIC	BIC	aBIC	χ^2	df	p	RMSEA	C.I. 95%	CFI	SRMR
Final Model	1375.421	1426.557	1366.519	13.005	10	.223	.049	.000, .114	.959	.054
Alternative Model A	2509.838	2563.728	2503.644	19.619	6	.003	.134	.071, .203	.814	.095
Alternative Model B	2123.033	2171.250	2117.490	47.172	5	.001	.259	.194, .329	.437	.122
Reversed Model	1862.213	1924.785	1855.212	14.242	11	.220	.048	.000, .111	.956	.058

Note: AIC = Aikaike Information Criterion. BIC = Bayesian Information Criterion. aBIC = sample-size adjusted BIC. χ^2 = Chi-squared value. df = χ^2 degrees of freedom. RMSEA = Root Mean Square Error of Approximation. C.I. 95% = 95% confidence interval. CFI = Comparative Fit Index. SRMR = Standardized Root Mean Square Residual.

Table 3.
Model Path Statistics

	β	$SE(\beta)$	p	CIL	CIU
Direct Effects					
M Mindfulness → M Stress	-.403	.084	<.001	-.540	-.264
M Mindfulness → A Perceived M Perspective Taking	-.183	.120	.129	-.375	.022
M Stress → A Perceived M Perspective Taking	-.386	.111	.001	-.567	-.199
A Perceived M Perspective Taking → A Disclosure	.503	.073	<.001	.381	.623
A Perceived M Perspective Taking → A Conflict Intensity	-.237	.092	.010	-.390	-.089
Mediated Effects					
M Mindfulness → M Stress → A Perceived M Perspective Taking					
Indirect	.155	.055	.004	.072	.251
Direct	-.183	.120	.129	-.375	.022
Total	-.028	.110	.802	-.204	.160
M Mindfulness → M Stress → A Perceived M Perspective Taking → A Disclosure					
Indirect	.078	.032	.013	.033	.135
Total	-.014	.056	.803	-.098	.087
M Mindfulness → M Stress → A Perceived M Perspective Taking → A Conflict Intensity					
Indirect	-.037	.020	.065	-.073	-.009
Total	.007	.028	.234	-.043	.049

Note. M = Mother. A = Adolescent. CIL = 95% Lower Confidence Interval; CIU = 95% Upper Confidence Interval. Standardized values are presented.

Figure 1. Hypothesized path model.

Figure 2. Final model. Model showed good fit: $\chi^2 (10) = 13.005, p = .223$, RMSEA = .049 (C.I. 95%: .000, .114), CFI = .959, SRMR = .054. Standardized path estimates and errors in parentheses are presented. Significant paths are solid black; nonsignificant paths are dotted grey.

Panel A.

Panel B.

Panel C.

Figure 3. Alternative models. Panel A presents the first alternative model, with model fit statistics, $\chi^2 (6) = 19.619$, $p = .003$, RMSEA = .134 (C.I. 95%: .071, .203), CFI = .814, SRMR = .095. Panel B presents the second alternative model, with model fit statistics, $\chi^2 (5) = 47.172$, $p < .001$, RMSEA = .259 (C.I. 95%: .194, .329), CFI = .437, SRMR = .122. Panel C presents the reversed model, $\chi^2 (11) = 14.242$, $p = .220$, RMSEA = .048 (C.I. 95%: .000, .111), CFI = .956, SRMR = .058. Standardized path estimates are presented, with standardized errors in parentheses. Significant paths at $p < .05$ are shown as solid arrows; non-significant paths at $p > .05$ are shown as dotted arrows.