

Mothers' and Fathers' Parenting Stress: Associations with Parent-Child Conflict and
Preschool-Aged Children's Internalizing Behaviour Problems

by

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Abstract

Internalizing behaviour problems, including anxiety, depression, and somatization are among the most common mental health concerns experienced by young children. Researchers have identified parenting stress (i.e. stress related to the demands of the parenting role) as a key factor related to children's development of internalizing behaviour problems. The relationship between parenting stress and child internalizing behaviour problems is, however, not well understood. Furthermore, previous research in this area has focused almost exclusively on the mother-child dyad, disregarding the unique contributions of fathers' parenting stress to child internalizing symptoms. Employing a quantitative survey and observational design, this correlational study examined whether both mothers' and fathers' parenting stress predicted preschool-aged children's concurrent internalizing behaviour problems through the mediators of both observed and parent-reported parent-child conflict. Results of this study show that both mothers' and fathers' parenting stress significantly related to preschool-aged children's internalizing behaviour problems. For both mothers and fathers, this relationship was significantly mediated by parent-reported, but not by observed, parent-child conflict. Limitations and directions for future research as well as the implications of these research findings for researchers, parents, and practitioners, are discussed.

Preface

This thesis is an original work by Cassandra Pirraglia. The research project, of which this thesis is a part, received ethics approval from the University of Alberta Research Ethics and Management Online service, No. Pro00048538 on July 17th 2014. The ethics on this project (Project Name: Early-Childhood Parent-Child Interactions) is open until April 3rd, 2020.

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Mothers' and Fathers' Parenting Stress: Associations with Parent-Child Conflict and Preschool-Aged Children's Internalizing Behaviour Problems

Preschool-aged children have been described as a “neglected population in the study of psychopathology” (Shala & Dharmo, 2013, p. 1008). More specifically, preschool-aged children's development of internalizing behaviour problems is largely understudied (Stone, Mares, Otten, Engels, & Janssens, 2015). Children's internalizing behaviour problems are characterized by inhibition, withdrawal, and mood symptoms, reflecting inwardly directed distress experienced by the child (Rodriguez, 2011; Roelofs, Meesters, Huurne Bamelis, & Muris, 2006). Correspondingly, child internalizing behaviour problems impact children's internal psychological well-being more negatively than their external environment (Fite et al., 2008; Madigan, 2012). Researchers have documented that internalizing behaviour problems in early childhood strongly predict adverse developmental outcomes throughout adolescence and into early adulthood (Coyne & Thompson, 2011; Mazza et al., 2009), highlighting the need for researchers to study factors related to their early development.

Children's development of internalizing behaviour problems is influenced by both individual and environmental factors. It is widely accepted that parents play an integral role in children's early psychological and emotional development (Festen et al., 2013; Fletcher et al., 2008). In fact, researchers have identified parenting characteristics as the most influential environmental factor related to children's early development of internalizing behaviour problems (Georgiou & Symeou, 2018; Stone et al., 2015). One relevant parenting construct is the stress that parents experience within the context of the parent-child relationship, referred to as parenting stress. Researchers have found maternal parenting stress to be a predictor of young children's internalizing behaviour problems using both cross-sectional (e.g., Rodriguez, 2011;

Tharner et al., 2012) and longitudinal research designs (e.g., Ashford et al., 2008; Bayer et al., 2008; Mäntymaa et al., 2012).

There are, however, two key limitations within the current literature examining the association between parenting stress and child internalizing behaviour problems. First, previous research in this area has been conducted almost exclusively with mother-child dyads, disregarding the unique contributions of fathers' parenting stress to children's emotional adjustment. Recently, and consistent with fathers' increasing involvement in family life, researchers have found that fathers within two parent families contribute distinctly to their child's development (Carbrera, Volling, & Barr, 2018; Uppal, 2015). Moreover, experiences of parenting stress are proposed to be distinct for parents, even within the same family, highlighting the need to study parents' discrete parenting stress experiences (Abidin, 1992). Accordingly, the current study examines mothers' and fathers' parenting stress separately in relation to child adjustment.

Second, the mechanisms underlying the relationship between parenting stress and child internalizing behaviour problems are not sufficiently understood. Abidin's Parenting Stress Model (1992) proposes that parenting stress relates to child outcomes, wherein higher levels of parenting stress predict a higher incidence of negative child behaviours and emotions. Abidin (1992) further theorizes that negative parenting behaviours mediate the relationship between parenting stress and child internalizing behaviour problems. Specifically, higher levels of parenting stress are proposed to relate to a higher incidence of negative parenting behaviours, (e.g., harsh discipline, rejecting behaviours) which, in turn, predict more negative child outcomes. Researchers have, however, been unable to empirically prove the mediating effect of negative parenting behaviours in the relationship between parenting stress and child internalizing

behaviour problems, as research findings have been both mixed and non-significant (e.g., Anthony et al., 2005; Crnic et al., 2005; Huth-Bocks & Hughes, 2008). A key limitation of this mediation theory is its focus exclusively on parents' negative behaviours and its disregard for the complexity of dyadic interactions within the parent-child relationship (Weaver et al., 2014). Therefore, I propose that it is essential for researchers to examine characteristics of dyadic parent-child interactions as potential mediators of the relationship between parenting stress and child internalizing behaviour problems. One pertinent parent-child dyadic characteristic related to both parenting stress and child internalizing behaviour problems is parent-child conflict (i.e., conditions of incompatible behaviour). Subsequently, the current study examines parent-child conflict as a potential mediator in the relationship between parenting stress and child internalizing behaviour problems.

The purpose of this study is two-fold. First, it is to examine whether both mothers' and fathers' parenting stress significantly relate to preschool-aged children's experiences of internalizing behaviour problems. Second, it is to examine how both parent-reported and observed conflict within both the mother-child and father-child relationships mediate the association between parenting stress and child internalizing behaviour problems. The present study thus aimed to answer the following research questions: (1) Do both mothers' and fathers' reports of parenting stress significantly relate to their respective reports of their children's internalizing behaviour problems?; (2) Do mothers' and fathers' reports of parent-child conflict mediate the link between parenting stress and children's internalizing behaviour problems?; and (3) Do observations of mother-child and father-child conflict mediate the link between parenting stress and children's internalizing behaviour problems?

Literature Review

The following section provides a review of the literature on the relationships between parenting stress, parent-child conflict, and child internalizing behaviour problems. This section begins with the definition of key terms. The theoretical framework guiding the current study's research questions and hypotheses is then presented. The literature on (a) parenting stress and child internalizing behaviour problems; (b) parenting stress and parent-child conflict; (c) parent-child conflict and child internalizing behaviour problems; and (d) the mediating role of parent-child conflict are reviewed. Notable gaps within the literature on these areas are identified. Finally, the aims of the proposed study are identified.

Definition of Key Terms

Internalizing behaviour problems. Behavioural and emotional problems are generally sorted along two broad dimensions, usually referred to as internalizing (over-controlled) and externalizing (under-controlled) behaviour problems (Cicchetti & Toth, 1991; Whitcomb & Merrell, 2013). Internalizing behaviour problems are characterized by inwardly directed distress, reflecting internal problems that a child may be experiencing (Sattler, 2014). Internalizing behaviour problems include anxiety (i.e., feelings of nervousness, worry and fear and the tendency to be overwhelmed by problems), depression (i.e., feelings of unhappiness, sadness and dejection; a belief that nothing goes right), and somatization (i.e., the tendency to be overly sensitive to, experience, or complain about relatively minor physical problems or discomforts; Reynolds & Kamphaus, 2004; Sattler, 2014). The commonality of these listed problems is that they are inwardly directed, over-controlled, and affect the individual's psychological world (Madigan et al., 2012).

Parenting stress. Parenting stress is a specific form of stress resulting from the demands of being a parent (Abidin, 1992; Deater-Deckard, 1998). It is often defined as “a set of processes that lead to aversive psychological and physiological reactions arising from attempts to adapt to the demands of parenthood” (Deater-Deckard, 2004, p. 6). It is important to note that stress in the parenting role is distinct from an individual’s experiences of stress arising from other roles and experiences, and that parenting stress more strongly relates to parenting behaviour and child development than stress in other domains (Deater-Deckard, 2004; Goldberg et al., 1997). Researchers propose that all parents experience parenting stress to some degree (Deater-Deckard, 2004). As such, parenting stress is theorized to exist on a continuum on which higher levels of parenting stress indicate higher parental distress (Abidin, 1992).

Parent-child conflict. Parent-child conflict is a specific aspect of the relationship between parents and their children that involves conditions of incompatible behaviours or opinions (Shantz, 1987), or behavioural opposition (Laursen & Collins, 1994). Parent-child conflicts can be expressed in both verbal disagreements and criticism or in aggression (Weymouth, Buehler, Zhou, & Henson, 2016). Parent-child conflict usually, but not exclusively, includes both parent and child negative affect (Laursen & Collins, 1994). Ultimately, parent-child conflict occurs when a parent and a child demonstrate resistant or oppositional behaviours, resulting in coercive patterns that are dyadic in nature (Huang et al., 2007).

Deutsch (1973) first distinguished between constructive and destructive conflict within the family system. Constructive conflict is defined as a process of negotiation, collaboration, and brainstorming in which the two partners reach a mutually satisfying goal. Conversely, destructive conflict terminates with both parties feeling dissatisfied with the outcome. Destructive conflict may involve coercion or physical and/or verbal threats that may escalate beyond the immediate

issue. The current study focused on destructive parent-child conflict, which is characterized by mutual opposition and conditions in which no resolutions are reached.

Theoretical Framework: Abidin's Parenting Stress Model

Abidin's Parenting Stress Model (1992; see Figure 1) posits that there are three domains of stress that contribute to overall parenting stress: (1) the parent domain = aspects of parenting stress that originate from the parent; (2) the child domain = aspects of parenting stress that originate from the child; and (3) the relationship domain = aspects of stress that result from interactions between the parent and the child. According to this model, stress within each domain aggregates to form an overall level of parenting stress.

According to Abidin's Parenting Stress Model, increases in levels of parenting stress will cause deterioration in both the quality and effectiveness of parenting behaviour (Abidin, 1992; Deater-Deckard, 2004). Proponents of Abidin's Parenting Stress Model theorize that negative parenting behaviours may include decreases in expressions of warmth and affection, increases in harsh methods of discipline, or expressions of hostility towards the child (Deater-Deckard, 2004). In turn, these negative parenting behaviours are theorized to predict increases in child emotional and behavioural problems (Abidin, 1992; Deater-Deckard, 2004).

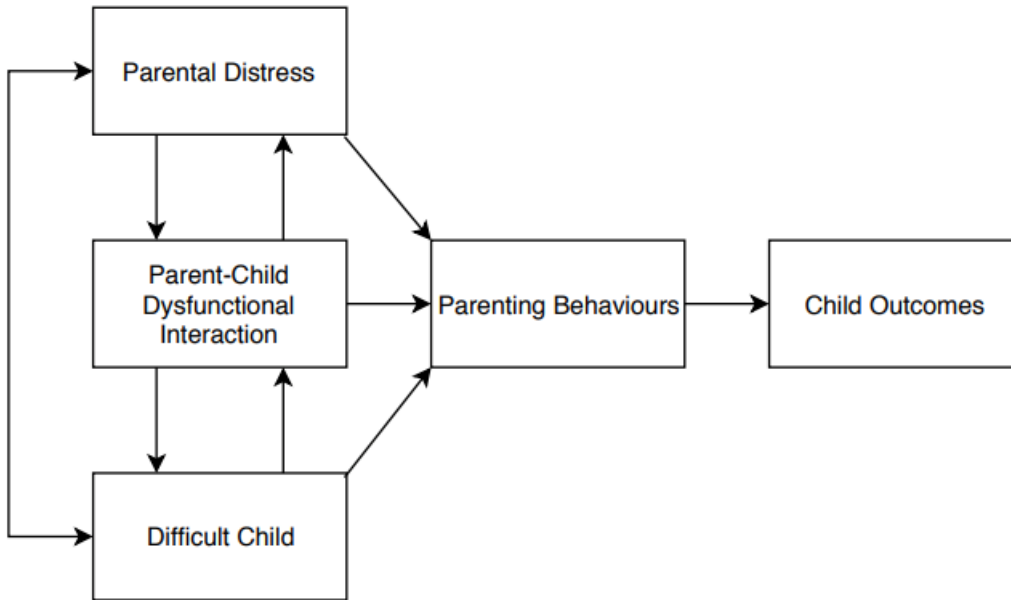


Figure 1. Abidin's Model of Parenting Stress, Adapted from Abidin (1992).

Abidin's Parenting Stress Model (1992) guided the current study. In fact, this study's first research question is a direct empirical test of Abidin's proposition that increases in levels of parenting stress will be associated with increases in child emotional and behavioural problems, specifically internalizing behaviour problems.

Whereas Abidin's Parenting Stress Model (1992) proposes that negative parenting behaviours mediate the relationship between parenting stress and child emotional and behavioural problems, the current study draws upon arguments in the literature that mutual and reciprocal qualities of the parent-child relationship are likely better predictors of child outcomes (e.g., Hinde, 1987; Grusec & Hastings, 2007; Sameroff, 1975). A myriad of developmental theories (e.g., transactional and socioecological frameworks) highlight the importance of observing relationships as a whole, as opposed to either parent or child behaviours separately, when aiming to understand the link between parent-child relationships and child outcomes (Deater-Deckard & O'Connor, 2000; Grusec & Hastings, 2007). Accordingly, and in deviation

from directly testing Abidin's Parenting Stress Model, I propose examining dyadic parent-child conflict rather than negative parenting behaviours as a mediator of the relationship between parenting stress and child internalizing behaviour problems.

Parenting Stress and Child Internalizing Behaviour Problems

Researchers estimate that the prevalence rate of internalizing disorders is similar to the rate of externalizing problems in preschool-aged children (Barterian et al., 2014; Egger & Angold, 2006). Extensive research exists on the relationship between parenting stress and children's displays of externalizing behaviour problems, yet considerably less attention has been paid to the relationship between parenting stress and children's experiences of internalizing behaviour problems. Considering that preschool-aged children who experience untreated internalizing behaviour problems are likely to experience internalizing symptoms throughout the course of their childhood (e.g., Barterian et al., 2014; Luby et al., 2009), it is important to identify environmental factors relating to their occurrence in early childhood.

Though limited, the current literature on parenting stress and child adjustment suggests that heightened parenting stress is related to a higher incidence of internalizing behaviour problems in young children (e.g., Costa et al., 2006; Rodriguez, 2011; Tharner et al., 2012). For example, Costa and colleagues (2006) investigated the relationship between mothers', and a few fathers', self-reported parenting stress and their reports of their children's internalizing behaviour problems. The researchers found a significant positive relationship between parental self-reported parenting stress and parental reports of their children's internalizing behaviour problems, even while controlling for symptoms of parental psychopathology. Rodriguez (2011) examined the relationship between mothers' reported parenting stress and children's self-reported internalizing behaviour problems in a community sample of 92 mother-child dyads of

children between the ages of four and nine. The authors found that maternal parenting stress was significantly related to children's self-reported anxiety and depression symptoms. Tharner and colleagues (2012) conducted a longitudinal study of the relationship between parenting stress and children's internalizing behaviour problems in toddler-mother dyads. The researchers found that mothers' heightened reports of parenting stress when their children were 18-months old significantly predicted mothers' reports of greater child internalizing behaviour problems at three-years old. A limitation of the reviewed studies, as well as the majority of other studies examining the relationship between parenting stress and children's internalizing behaviour problems (e.g., Anthony et al., 2005; Bayer et al., 2006), is their failure to examine both mothers' and fathers' parenting stress in relation to children from two-parent families' development of internalizing behaviour problems. In fact, the majority of studies in this area focus almost exclusively on how the mother-child relationship relates to child adjustment, with a complete disregard for the role of fathers. While empirical interest in the father-child relationship is growing, researchers note that fathers are still underrepresented in the field of child development (Carbrera, Volling, & Barr, 2018; Schact, Cummings & Davies, 2009). Hart and Kelley (2006) conducted one of the few studies examining both mothers' and fathers' parenting stress in relation to child adjustment. The authors found that both mothers' and fathers' parenting stress significantly predicted children's internalizing behaviour problems, such that higher parenting stress predicted a higher incidence of internalizing behaviour problems in children. Despite these preliminary findings, further research examining how mothers' and fathers' parenting stress relate to children's internalizing behaviour problems is imperative.

Despite the strong empirical evidence that parenting stress relates to child internalizing behaviour problems, little is known about *how* these two constructs are related. Researchers and

theorists have hypothesized that children's internalizing behaviour problems may be related to stressed parents demonstrating less warmth and increased negative parenting behaviours in their interactions with their children (Abidin, 1992; Costa et al., 2006). Additionally, some researchers have theorized that when young children observe negative emotions and worry in their caregivers, these negative emotions are mimicked by the child, as evidenced by internalizing behaviour problems (Silinskas et al., 2019). Further research is needed to identify potential mediating factors in the relationship between parenting stress and children's internalizing behaviour problems. As mentioned, characteristics of dyadic parent-child interactions are theorized to be better predictors of children's adjustment than individual factors (Hinde, 1987). Considering that the dyadic construct of parent-child conflict has been found to be related to both parenting stress (e.g., Garcia et al., 2017) and child internalizing behaviour problems (e.g., Weaver et al., 2014), the current study will examine parent-child conflict as a potential mediator of the relationship between parenting stress and child internalizing behaviour problems.

Parenting Stress and Parent-Child Conflict

Few researchers have empirically tested the relationship between parenting stress and the quality of parent-child interactions. McKay and colleagues (1996) were among the first researchers to suggest a connection between these two constructs, and among the only researchers to examine observed as opposed to parent-reported parent-child conflict. The researchers found that lower levels of parenting stress were significantly related to a higher incidence of positive observed parent-child interactions, while higher levels of parenting stress were significantly related to a higher incidence of negative observed parent-child interactions, including conflict (McKay et al., 1996). More recently, studies have examined the relationship between parents' self-reported parenting stress and parent-reported parent-child conflict. A study

by Hakvoort (2012) investigated the relationship between divorced mothers' self-reported parenting stress and mothers' reported conflict with both their ex-partner and their child. Hakvoort (2012) found a significant relationship between mothers' reports of parenting stress and conflict with their child, such that greater levels of parenting stress were related to higher reports of mother-child conflict. Similarly, Garcia and colleagues (2017) studied the relationship between mothers' self-reports of parenting stress and mothers' reports of conflict within their relationship with their child. Congruent with Hakvoort's (2012) findings, Garcia and colleagues found a significant relationship between parenting stress and parent-child conflict, such that mothers' reports of heightened parenting stress predicted mothers' reports of greater parent-child conflict. Overall, preceding research findings suggest a significant relationship between parenting stress and parent-child conflict, such that heightened parenting stress is related to greater levels of parent-child conflict.

Previous studies investigating the relationship between parenting stress and parent-child conflict are limited by two methodological constraints. First, the research within this area has been conducted almost exclusively with mother-child dyads, disregarding the potential unique contribution of the father-child relationship. Second, the research within this area has relied predominantly on subjective parental self-reports of parent-child conflict, at the expense of observations of parent-child conflict. It is often argued that observations of parent-child interactions, particularly within the home setting, more closely represent typical parent-child interactions patterns and demonstrate greater ecological validity than parental self-reports (e.g., Aspland & Gardner, 2003). To address the aforementioned gaps in the literature, the current study will examine whether both mothers' and fathers' self-reported *and* observed conflict with

their child mediates the relationship between parenting stress and child internalizing behaviour problems.

Parent-Child Conflict and Child Internalizing Behaviour Problems

Researchers have documented a relationship between parent-child conflict and child internalizing behaviour problems (e.g., Branje et al., 2010; El-Sheikh & Elmore-Stratton, 2004; Sentse & Lair, 2010; Weaver et al., 2014). It is theorized that instances of parent-child conflict impact children's abilities to both self-regulate and to appropriately employ adaptive coping skills, ultimately leading to children's development of internalizing behaviour problems (Steele, Forehand, & Armistead, 1997; Weaver et al., 2014). El-Sheikh and Elmore-Stratton (2004) examined the relationship between parent-child conflict and children's internalizing behaviour problems including a sample of mothers and a few fathers. The researchers found that mothers' reported conflict with their child was significantly and positively correlated with child anxiety and depression symptoms, whereas fathers' reported conflict with their child was significantly and positively correlated with children's externalizing behaviour problems, but not with child internalizing behaviour problems. Similarly, Sentse and Laird (2010) examined the relationship between parent-child conflict and child adjustment in a sample of 218 mother-adolescent dyads. In this study, parents reported on levels of conflict with their adolescent, while adolescents provided self-reports of their experiences of depressed mood. The researchers indicated that parental reports of parent-child conflict were significantly related to adolescents' self-reported depression symptoms. While the aforementioned studies indicate a relationship between parent-child conflict and child internalizing behaviour problems, the majority of studies have examined this relationship in samples of elementary school-aged and adolescent populations. Therefore, additional research examining this relationship in early childhood populations is necessary.

Parent-Child Conflict as a Mediator

Abidin's parenting stress model positions negative parenting behaviours as mediators of the relationship between parenting stress and child internalizing behaviour problems (e.g., Abidin, 1992; Deater-Deckard, 2004); however, parenting researchers have found little empirical support for this, with most findings being either mixed or non-significant (e.g., Anthony et al., 2005; Crnic et al., 2005; Huth-Bocks & Hughes, 2008; Mackler et al., 2015). To date, researchers have yet to examine how characteristics of dyadic parent-child interactions, such as parent-child conflict, may mediate the relationship between parenting stress and children's development of internalizing behaviour problems. This is a notable limitation, as theorists have argued that characteristics at the dyadic level are likely more predictive of children's adjustment and functioning (Deater-Deckard & O'Connor, 2000).

As previously described, parent-child conflict is a form of dyadic parent-child interaction characterized by conditions of incompatible behaviours or opinions (Shantz, 1987) or behavioural opposition (Laursen & Collins, 1994). Parent-child conflicts are expressed in verbal disagreements, criticisms, or actual aggression (Weymouth, Buehler, Zhou, & Henson, 2016), and usually, but do not necessarily involve negative affect (Laursen & Collins, 1994). Researchers have indicated that parent-child conflict is significantly related to both parenting stress (e.g. Hakvoort, 2012; Garcia et al., 2017) and child internalizing behaviour problems (Branjic et al., 2010; El-Sheikh & Elmore-Stratton, 2004; Sentse & Lair, 2010; Weaver et al., 2014). Furthermore, a number of empirical studies have failed to prove that negative parenting behaviours act as a mediator in the relationship between parenting stress and child internalizing behaviour problems. Consequently, I propose that parent-child conflict should be examined as a

potential mediator in the relationship between parenting stress and child internalizing behaviour problems.

The Current Study

In this study, I sought to examine how both (a) mothers' and (b) fathers' parenting stress are related to parent-child conflict and children's internalizing behaviour problems. Furthermore, I investigated whether both parent-reported and observed conflict within the (a) mother-child and (b) father-child relationships mediated the link between parenting stress and child internalizing behaviour problems.

This study contributes to the parenting stress literature by examining both mothers' and fathers' parenting stress in relation to their children's internalizing behaviour problems. Considering that the majority of parenting stress research has focused almost exclusively on the mother-child relationship, this study fills a prominent gap in the literature. Additionally, in recognition of recent research indicating the importance of examining the specific and separate contributions of maternal and paternal behaviours to children's development (Cabrera, Volling, & Barr, 2018), mother-child and father-child relationships are examined separately. Moreover, this study is among the first to examine parent-child conflict as a potential mediator in the relationship between parenting stress and child internalizing behaviour problems within both the mother-child and father-child relationships. In this capacity, this research acknowledges the complexity of dyadic interactions within the parent-child relationship.

Research Questions and Hypotheses

Research Question 1. Do (a) mothers' and (b) fathers' reports of parenting stress significantly relate to their respective reports of children's internalizing behaviour problems?

Hypothesis 1: Given previous research findings indicating that mothers' reports of parenting stress are significantly related to maternal reports of child internalizing behaviour problems (Rodriguez, 2011; Tharner et al., 2012) and the few studies indicating a relationship between fathers' parenting stress and child internalizing behaviour problems (e.g., Hart & Kelley, 2006), I hypothesized that both mothers' and fathers' self-reports of parenting stress would be significantly related to parents' respective reports of their child's internalizing behaviour problems. Specifically, I expected that: (a) mothers who report higher levels of parenting stress would report higher rates of internalizing behaviour problems in their children; and (b) fathers who report higher levels of parenting stress would report higher rates of internalizing behaviour problems in their children.

Research Question 2. Do (a) mothers' and (b) fathers' respective reports of conflict with their child mediate the relationship between both mothers' and fathers' self-reports of parenting stress and reports of their child's internalizing behaviour problems?

Hypothesis 2: Given the research that has established a relationship between parent-child conflict and parenting stress (e.g., Hakvoort, 2012; Garcia et al., 2017), as well as parent-child conflict and child internalizing behaviour problems (e.g., Branjie et al., 2010; El-Sheikh & Elmore-Stratton, 2004; Sentse & Lair 2010; Weaver et al., 2014), I hypothesized that parental reports of parent-child conflict would mediate the relationship between parenting stress and child internalizing behaviour problems. Specifically, I expected that: (a) maternal reports of mother-child conflict would mediate the link between mothers' self-reported parenting stress and reports of their child's internalizing behaviour problems, and (b) paternal reports of father-child conflict would mediate the link between fathers' self-reported parenting stress and reports of their child's internalizing behaviour problems.

Research Question 3. Do observations of both (a) mother-child and (b) father-child conflict mediate the relationship between both mothers' and fathers' self-reports of parenting stress and reports of their child's internalizing behaviour problems?

Hypothesis 3: There exists limited literature on the relationship between observed parent-child conflict, parenting stress, and child internalizing behaviour problems. Nonetheless, coinciding with my hypotheses regarding my second research question, and in line with the previous research examining the relationship between parental reports of parent-child conflict, parenting stress, and child internalizing behaviour problems (e.g., Garcia et al., 2017; Weaver et al., 2014) the following hypothesis was made. I hypothesized that (a) observed mother-child conflict would mediate the relationship between mothers' parenting stress and maternal reports of child internalizing behaviour problems, and (b) observed father-child conflict would mediate the relationship between fathers' parenting stress and paternal reports of child internalizing behaviour problems.

Method

I employed a quantitative correlational design as the methodology for the current study. This methodological design was appropriately chosen to answer my research questions, and relied on well-established measures with evidence of validity and reliability.

Participants

The current study included a community sample of 319 two-parent families and their preschool-aged children who participated in the first phase of a longitudinal study on parenting in early childhood. Of the 319 families, a subsample of 100 families volunteered to take part in an observational home visit. The larger study was supported by a Social Studies and Humanities Research Council (SSHRC) grant for Dr. Christina Rinaldi's longitudinal research project (Grant

#435-2014-0794: Early childhood parent-child interactions: An examination of the stability of parenting across tasks and overtime).

The 319 mother and father dyads completed the questionnaire portion of this study. This sample included parents with 174 boys and 145 girls between the ages of 26 and 68 months ($M = 52.51$ months, $SD = 7.27$). Parent demographics are presented in Table 1. The observational portion of this study included a subsample of 100 two-parent families and their preschool-aged children (50 boys, 50 girls, $M = 45.6$ months).

Table 1.

Parents' Demographic Information

Demographic		Frequency (%)	
Variable		Mothers	Fathers
Age	18-25 years old	0.6	0.6
	26-35 years old	43.3	31.3
	36-45 years old	54.5	58.3
	46-55 years old	1.3	7.5
Ethnicity	Canadian	65.2	60.2
	White/Caucasian/ Western European	40.4	37.9
	Eastern European	7.8	8.8
	Chinese	11.9	10.7
	South Asian	6	6
	South East Asian	0.9	1.9
	Filipino	4.7	3.1

Aboriginal	3.1	2.8
Black/African	3.1	3.1
Korean	0.6	0.9
Portuguese	0.6	0.9
Latin American	2.2	2.2
Arab/West Indian	0.9	0.6
Other	3.4	3.1

Procedures

Participants were recruited by asking preschools and daycares in Edmonton and the surrounding area to distribute study information to interested two-parent families with preschool-aged children. A word-of-mouth sampling technique recruited 20 additional families from outside of Edmonton. The current study is comprised of two portions: (1) parent-completed questionnaires, and (2) observations of parent-child interactions.

In the first portion of the current study, the 319 mother and father dyads completed a number of self-report questionnaires, including a: (a) demographics questionnaire; (b) parenting stress questionnaire; (c) parent-child conflict questionnaire; and (d) behaviour checklist with a subscale assessing child internalizing behaviour problems. Following parents' completion of questionnaires, a graduate research assistant contacted participating families asking for their interest in participating in the observational home-visit portion of the current study. Research assistants stopped recruiting home-visit participants once a sample size of 100 families was obtained. Recruited families were provided with additional information to obtain the appropriate informed consent for observational home-visits.

The home-visits for the observational portion of the current study occurred on two separate occasions and were purposefully counterbalanced between mother-child sessions and father-child sessions. The parent-child tasks during the observed home-visits included a puzzle building activity, an emotions task, a Lego play task, and a clean-up task. Although all tasks were counterbalanced, the clean-up task always immediately followed the Lego play task. The clean-up task involved the research assistant instructing the parent and child that it was time to clean up the Lego used in the play task. Parent-child interactions during the clean-up task were the only interactions examined in the current study.

A team of coders (comprised of 4 trained research assistants) shared the coding of the videos. Two research-assistants independently coded the videotapes of parent-child interactions during the home-visits. A third coder carried out random reliability checks, with a minimum of 20% of all video interactions being checked for inter-rater reliability. The clean-up task was coded in its entirety for a maximum of five-minutes. Krippendorff's Alpha for initial double coding of the clean-up task was .95, indicating high inter-rater agreement.

Measures

Parenting stress. *The Parenting Stress Index Fourth Edition-Short Form (PSI-4-SF;* Abidin, 2012; See Appendix A) was used to assess parents' self-reports of parenting stress. The PSI-4-SF is a 36-item, standardized, norm-referenced measure which is abbreviated from the full *Parenting Stress Index-Fourth Edition* (Abidin, 2012) and designed to evaluate the magnitude of stress in the parent-child system. The PSI-4-SF is applicable for use with caregivers of children aged one month to 12 years –old. On this measure, parents rate statements pertaining to stress in the parenting role on a five-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Raw scores from items on this scale aggregate to form three subscales, based on Abidin's

Parenting Stress Model; (1) Parental Distress; (2) Parent-Child Dysfunctional Interaction; and (3) Difficult Child.

The Parental Distress subscale represents the level of distress a parent experiences in his or her role as a parent as a function of personal factors that are directly related to parenting (Abidin, 2012; Mash & Johnston, 1983). The components of stress associated with the Parental Distress subscale include an impaired sense of parenting competence, stress about restrictions placed on other life roles, conflict with the child's other parent, lack of social support and depression. The Parent-Child Dysfunction Interaction subscale reflects the parent's perception that the child does not meet his or her expectations, and that his or her interactions with the child are not reinforcing to him or her as a parent (Abidin, 2012). The Difficult Child subscale focuses on behavioural characteristics of children that make them either easy or difficult to manage. These characteristics are often rooted in the temperament of the child and include defiant, non-compliant, and demanding behaviours (Abidin, 2012).

The summed raw scores on each subscale are converted into standardized *T-scores*. The sum of raw scores on all scales aggregate to form a Total Stress Score (i.e. the sum of scores on all items), which are then converted into standardized *T-scores*. Higher Total Stress scores indicate higher levels of perceived parenting stress.

The reliability of the PSI-4-SF was assessed with 270 cases. Test-retest indicators implied acceptable reliability ($\alpha = 0.68-0.85$) and the Cronbach's alpha of internal reliability for this measure is very good ($\alpha = 0.91$). The PSI-4-SF correlates highly with the full-length PSI-4 ($\alpha = .98$), which has strong evidence of validity.

Child internalizing behaviour problems. *The Behavior Assessment System for Children, Second Edition* (BASC-II; Reynolds & Kamphaus, 2004; See Appendix B), was

administered to assess mothers' and fathers' reports of children's internalizing behaviour problems. Mothers and fathers independently completed the *Parenting Rating Scale-Preschool Form* (PRS-P) of the BASC-II, which is valid for use with caregivers of children aged two to five-years-old. On the PRS-P parents rate their perceptions of the frequency of their child's behaviours on a four-point Likert scale ranging from 0 (*Never*) to 3 (*Almost Always*).

The Internalizing Problems composite of the BASC-II is comprised of three subscales: (1) Anxiety; (2) Depression; and (3) Somatization. Raw scores of the items that comprise each subscale are summed and converted into standardized *T-scores*. The raw scores from each subscale are summed to form the Internalizing Problems composite, which are converted to standardized *T-scores*. Higher scores on the Internalizing Problems composite are indicative of a greater number of parent-reported child internalizing behaviour problems.

The Internalizing Problems composite of the BASC-II demonstrates high internal consistency ($\alpha = 0.87$). The adjusted test-retest reliability of the Internalizing Problems composite is reported to be 0.86, indicating a good level of internal consistency (Reynolds & Kamphaus, 2004). There is moderate to strong empirical support for the validity of the BASC-II measure. Scores on the PRS-P were compared to scores on the Achenbach System for Empirically Based Assessment Child Behavior Checklist for Ages 1-5 (Achenbach & Rescorla, 2000) and for ages 6-18. Correlations of these measures' assessments of internalizing behaviour problems with the Internalizing Problems composite on the BASC-II fell between 0.65 and 0.75, providing evidence that the BASC-II and CBCL are tapping into the same behavioural dimensions from a moderate to strong degree.

Parent-reported parent-child conflict. The *Child Parent Relationship Scale* (CPR-S; Pianta, 1992; See Appendix C) is a norm-referenced questionnaire used to assess parents'

perceptions of conflict and closeness in their relationships with their children. This scale is applicable for parents of children 3-12 years old. Parents rate items on the CPR-S on a five-point Likert scale ranging from 1 (*definitely does not apply*) to 5 (*definitely applies*). Ratings from items are summed to create conflict and closeness subscales. The current study examined only the conflict subscale of the CPR-S. Examples of items on the conflict subscale include; “my child and I always seem to be struggling with each other” and “despite my best efforts, I’m uncomfortable with how my child and I get along”.

The reliability of the CPR-S has been calculated with a sample of 714 participants aged 4.5-5 years old and demonstrated high internal consistency ($\alpha = 0.87$). The reliability of the conflict scale was also assessed with the current study’s samples of 319 mothers and fathers and demonstrated acceptable levels of internal consistency for mothers ($\alpha = 0.79$) and fathers ($\alpha = 0.80$), respectively.

Observed parent-child conflict. *The Parent Child Interaction System* (PARCHISY; Deater-Deckard, Pylas & Petrill, 1997; See Appendix D) was applied to video-recordings of parent-child interactions during the clean-up task of the home-visit portion of the current study. The clean-up task was selected as the focus of this study because it was thought to most likely elicit an instance of conflict within the parent-child dyad (Kochanska, 1995; Laible, Panfile, & Makarieve, 2008) The PARCHISY includes codes of parent behaviours (i.e., positive content/control, negative content/control, positive affect/warmth, negative affect, responsiveness, on task and verbalizations), child behaviours (i.e. positive affect/warmth, negative affect, responsiveness, on task, compliance, autonomy/independence, activity/energy, and verbalizations), and dyadic interactions (i.e. reciprocity, conflict, and cooperation). The coding of dyadic interactions was the area of interest in the current study, specifically, the dyadic code

of parent-child conflict. Parent-child conflict on the PARCHISY is coded as “major or minor disagreement mutual or shared negative affect; i.e. arguing, tussling over toy, etc.” PARCHISY codes of parent-child conflict range from 1 (*no evidence of conflict during task*) to 7 (*highly conflicted interaction for entire task*). Krippendorff’s Alpha on inter-rater agreement of the dyadic codes on the PARCHISY was .95, indicating high inter-rater agreement.

Statistical Analysis Procedure

All analyses were conducted in IBM SPSS Statistics for Macintosh, Version 24. To test this study’s first research question, and as preliminary analyses before conducting meditational analyses, correlational analyses were conducted between the study variables of: (1) total parenting stress on the PSI-4-SF; (2) parent-reported parent-child conflict on the CPR-S; (3) observed parent-child conflict rated on the PARCHISY; and (4) parent-reported child internalizing behaviour problems rated on the BASC-II-PRS. Correlation analyses were examined prior to conducting mediation analyses to determine whether Baron and Kenny’s (1986) four conditions for mediation were met.

To test this study’s second and third research questions, separate mediation analyses of both mothers’ and fathers’ data were proposed using Hayes’ (2012) PROCESS computational tool, macro version 3.4. The models of these proposed mediation models are presented in Figures 2 and 3.

Figure 2. Proposed Mediation Models for Mothers

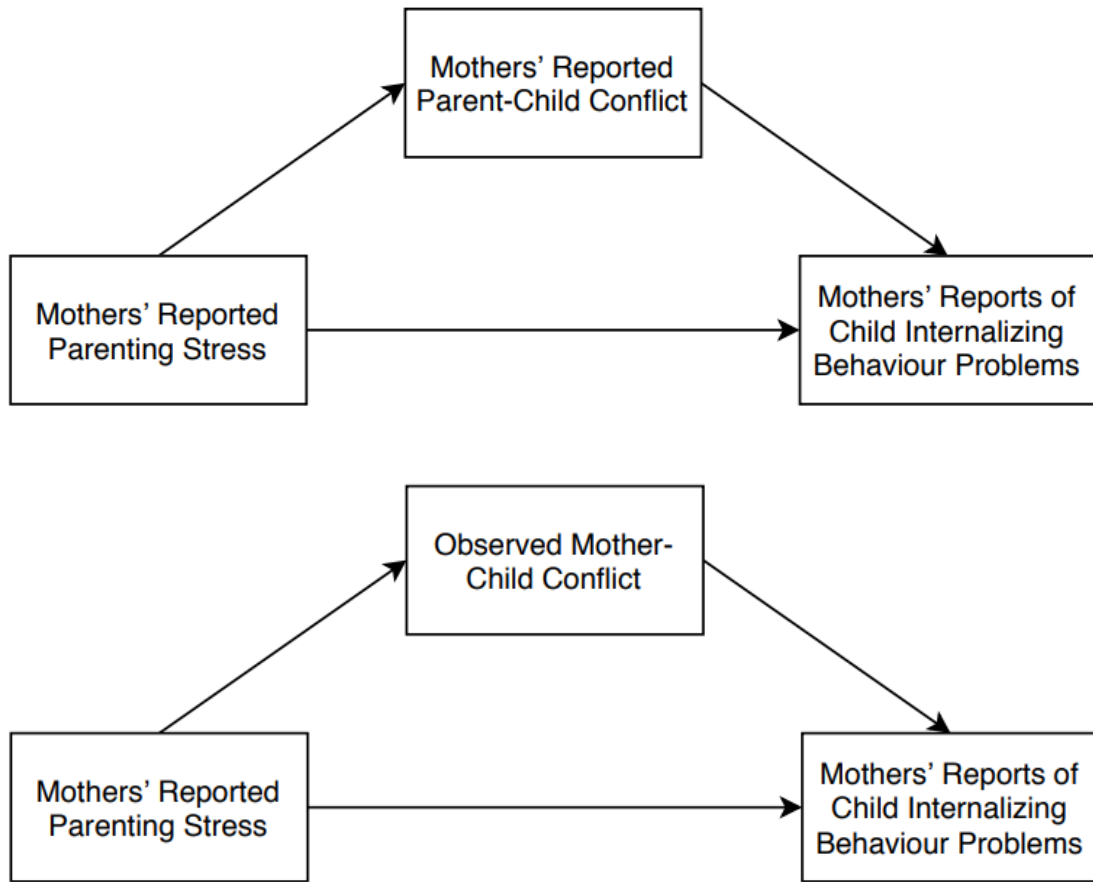
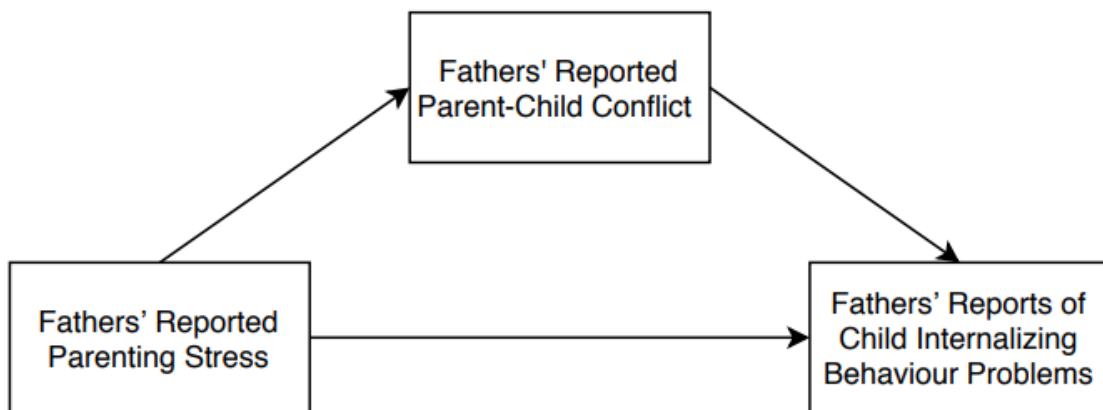
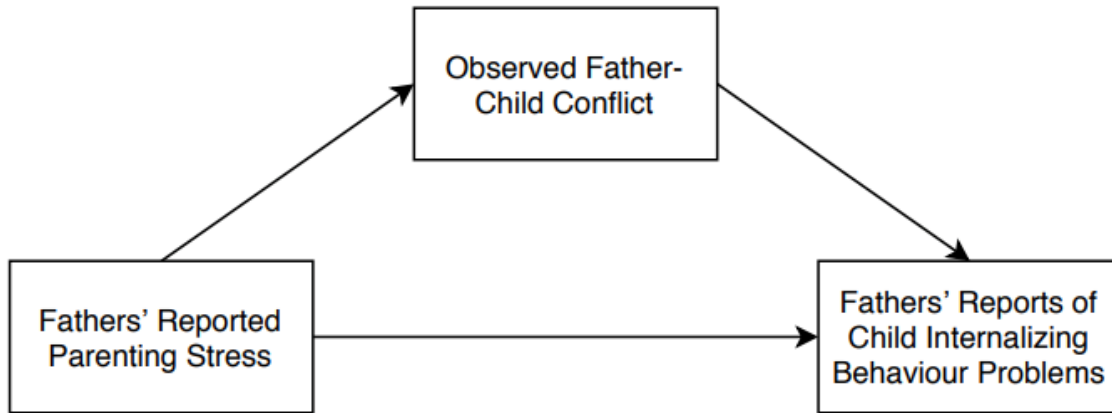


Figure 3. Proposed Mediation Models for Fathers





Prior to conducting mediation analyses, the assumptions of linearity and normality for both mothers' and fathers' data sets were assessed. Observations of the scatterplots created for both mothers' and fathers' data sets indicated that both data sets met the assumption of linearity. Durbin-Watson statistics were calculated for both mother and father data sets to test the assumption of independent errors. The calculated statistics were 1.99 and 2.04 for mothers' and fathers' data sets, respectively, indicating no significant autocorrelation among variables, and thus an independence of errors within both data sets. Histograms and P-P plots were created to test the assumption of normality within both mothers' and fathers' data sets. For both mothers and fathers, the data fit the normal curve reasonably well on the histogram, and on both data sets the majority of points were close to the P-P plot diagonal lines, indicating that the assumption of normality was met for both data sets. Examinations of preliminary correlational analyses revealed that Baron and Kenny's (1986) four conditions for mediation were met for the models examining parent-reported parent-child conflict as a mediator for both mothers and fathers, but not observed parent-child conflict as a mediator for both mothers and fathers.

Results

Descriptive Statistics

Descriptive statistics including means, standard deviations, frequencies, skew, and kurtosis were calculated for all relevant variables (i.e. parenting stress, parent-reported parent-child conflict, observed parent-child conflict, and child internalizing behaviour problems). These descriptive statistics are presented in Table 2.

Both the CPR-S and PARCHISY are unstandardized measures of parent-child conflict, represented by raw scores. The conflict subscale of the CPR-S is comprised of eight items that are rated on a five-point Likert scale. The mean of the scores on these items is calculated. Scores on the CPR-S conflict subscale can thus range from 1-5, with higher scores indicating greater parental perceived parent-child conflict. Coding of parent-child conflict on the PARCHISY ranges from 1-7, with higher scores indicating a greater incidence of parent-child conflict.

Ratings of child internalizing behaviour problems on the BASC-II are represented as standardized *T-scores* ranging from 20-120, wherein higher *T-scores* represent a higher incidence of child internalizing behaviour problems. *T-scores* between 40 and 60 fall within what is considered the “average” range, and are considered expected behaviours or feelings for children that age. *T-scores* between 61 and 70 fall within what is considered the “at-risk” range, and indicate that a child is experiencing internalizing behaviour problems. *T-scores* that fall above 70 are considered to be within the “clinically-significant” range and suggest a high-level of internalizing behaviour problems and considerable maladjustment.

Ratings of total parenting stress on the PSI-4-SF are represented as standardized *T-scores* ranging from 36-180, wherein higher *T-scores* represent higher levels of parenting stress. *T-scores* ranging from 40-63 are considered to be “average” levels of parenting stress, *T-scores*

ranging from 63-65 indicate high-levels of parent stress, while *T-scores* higher than 65 represent clinically-significant levels of parenting stress.

Table 2

Descriptive Statistics of Key Variables

Variable	N	M	SD	Range	Skew	Kurtosis
Child Parent Relationship Scale						
Mothers' Reported Conflict	319	2.29	0.77	1-4.50	0.48	-0.32
Fathers' Reported Conflict	319	2.31	0.70	1-4.38	0.42	-0.24
Parenting Stress Index						
Mothers' Self-Reported Total Parenting Stress	319	46.92	7.75	33-75	0.59	0.28
Fathers' Self-Reported Total Parenting Stress	319	47.80	7.67	32-73	0.29	-0.19
Behaviour Assessment System for Children-PRS-P						
Mothers' Reports of Child Internalizing Problems	319	50.93	9.49	30-80	0.28	-0.12
Fathers' Reports of Child Internalizing Problems	319	50.74	9.59	28-84	0.39	0.28
PARCHISY						
Observed Mother-Child Conflict	100	1.08	0.53	1-2	5.60	79.55
Observed Father-Child Conflict	100	1.03	0.17	1-6	8.61	29.90

Correlations

All correlational analyses for mothers' data are reported in Table 3. In this section I discuss select correlational relationships.

In line with hypotheses, the predictor variable (mothers' parenting stress) and the outcome variable (mother-reported child internalizing behaviour problems) were significantly and positively correlated. As anticipated, the predictor variable (mothers' parenting stress) and the mediator of mother-reported parent-child conflict were significantly and positively correlated. Additionally, the mediator variable of mother-reported parent-child conflict was significantly and positively correlated with the outcome variable. Contrary to hypotheses, the predictor variable (mothers' parenting stress) was not significantly correlated with the mediator variable of observed mother-child conflict. Also, unexpectedly, the mediator of observed mother-child conflict was not significantly correlated with mothers' reports of child internalizing behaviour problems.

All correlational analyses for fathers' data are reported in Table 4. In this section I discuss select correlational relationships. As expected, the predictor variable (fathers' parenting stress) and the outcome variable (father-reported child internalizing behaviour problems) were significantly and positively correlated. Also, in line with hypotheses, the predictor variable (fathers' parenting stress) and the mediator of father-reported parent-child conflict were significantly and positively correlated. Additionally, the mediator variable of father-reported parent-child conflict was significantly and positively correlated with the outcome variable. Unexpectedly, the predictor variable (fathers' parenting stress) was not significantly correlated with the mediator of observed father-child conflict. Also contrary to hypotheses, the mediator of

observed father-child conflict was not significantly correlated with the outcome variable (fathers' reports of child internalizing behaviour problems).

Research Question 1. Do (a) mothers' and (b) fathers' reports of parenting stress significantly relate to their respective reports of their children's internalizing behaviour problems? Overall, these correlational analyses answer this study's first research question and indicate that both mothers' and fathers' parenting stress each significantly and positively relate to parents' respective reports of their children's internalizing behaviour problems.

Furthermore, these correlational findings indicated that Baron and Kenny's (1986) rules for mediation were met for the mediation models including mothers' and fathers' reported parent-child conflict to be tested.

Research Question 3. Do observations of both (a) mother-child and (b) father-child conflict mediate the relationship between both mothers' and fathers' self-reports of parenting stress and reports of their child's internalizing behaviour problems? The necessary conditions were not met for the mediation models including observed mother-child and observed father-child conflict to be empirically tested. These findings thus answered this study's third research question. More specifically, observed parent-child conflict for both mothers and fathers was not a significant mediator of the relationship between parenting stress and children's internalizing behaviour problems.

Table 3
Correlations Matrix of Mothers' Variables

Variable	1	2	3	4
1. Mothers' Self-Reported Total Parenting Stress	-			
2. Mothers' Reports of Child Internalizing Problems	.50**	-		
3. Mothers' Reports of Parent-Child Conflict	.70**	.47**	-	
4. Observations of Mother-Child Conflict	-.01	-.02	.15	-

Note. * $p < .05$, ** $p < .01$

Table 4
Correlations Matrix of Fathers' Variables

Variable	1	2	3	4
1. Fathers' Self-Reported Total Parenting Stress	-			
2. Fathers' Reports of Child Internalizing Problems	.51**	-		
3. Fathers' Reports of Parent-Child Conflict	.63**	.41**	-	
4. Observations of Father-Child Conflict	-.30	.02	.06	-

Note. * $p < .05$, ** $p < .01$

Mediations

Research Question 2. Do (a) mothers' and (b) fathers' respective reports of conflict with their child mediate the relationship between both mothers' and fathers' self-reports of parenting stress and reports of their children's internalizing behaviour problems? Separate mediation analyses for mother and father data were conducted to answer this study's second research question. Mediation analyses were conducted using Hayes' (2012) PROCESS computation tool for use with *IBM Statistics* program. In the first mediation model, mothers' parenting stress was the predictor variable, mothers' report of parent-child conflict was the mediator variable, and mothers' reports of their child's internalizing behaviour problems was the outcome variable. In the second mediation model, fathers' parenting stress was the predictor variable, fathers' report of parent-child conflict was the mediator variable and fathers' reports of their child's internalizing behaviour problems was the outcome variable. Results of the mediation analyses are presented in Figures 4 and 5.

For mothers, maternal reports of parent-child conflict significantly mediated the relationship between mothers' reports of parenting stress and child internalizing behaviour problems. Both the direct and indirect effect in this model accounted for approximately 28% of the variance in the outcome variable.

For fathers, paternal reports of parent-child conflict significantly mediated the relationship between fathers' reports of parenting stress and child internalizing behaviour problems. Both the direct and indirect effect in this model accounted for approximately 27% of the variance in the outcome variable.

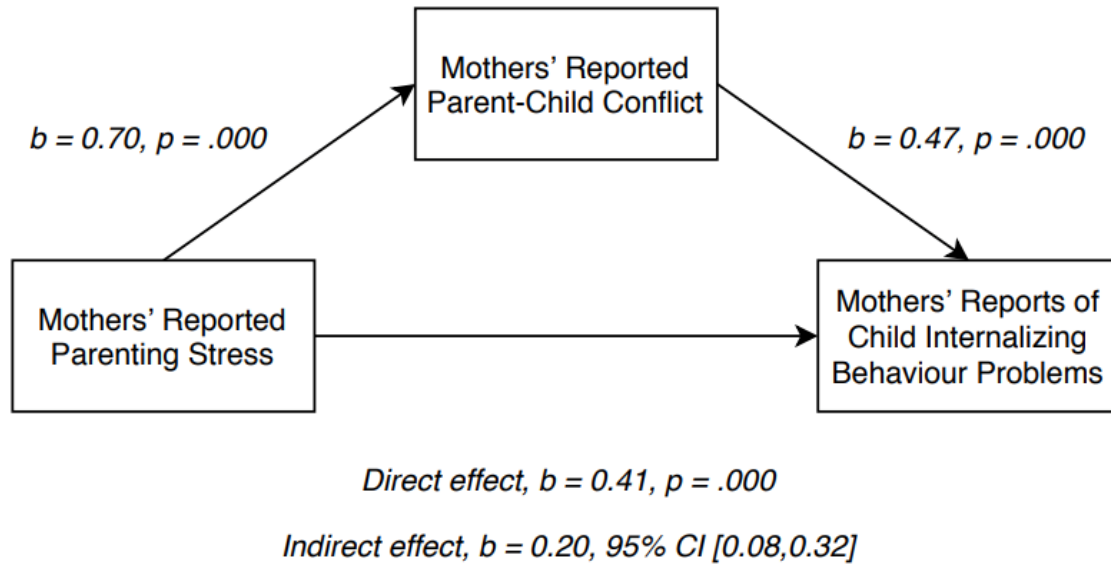


Figure 4. Model of mothers' parenting stress as a predictor of mothers' reports of child internalizing behaviour problems, mediated by mothers' reports of parent-child conflict.

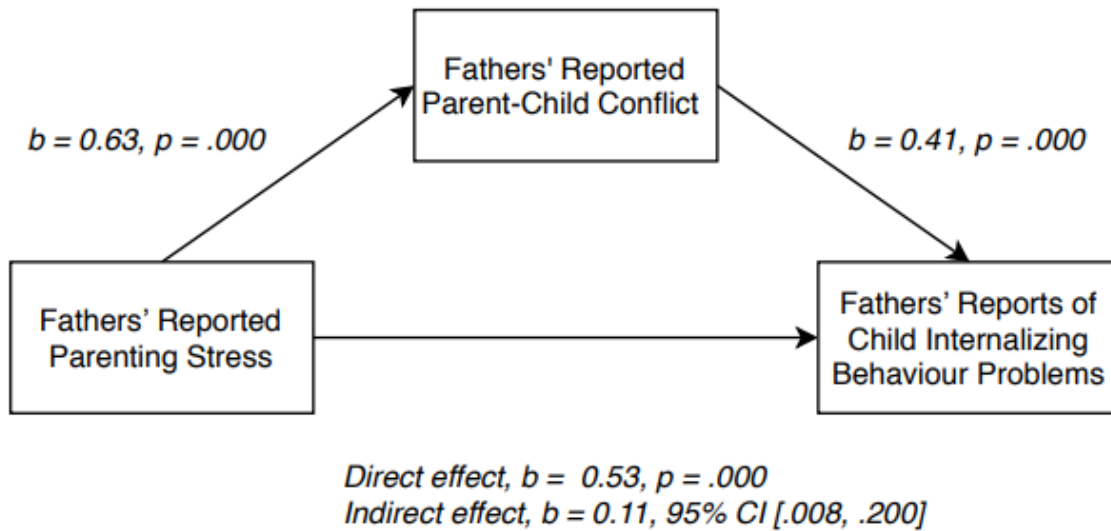


Figure 5. Model of fathers' parenting stress as a predictor of fathers' reports of child internalizing behaviour problems, mediated by fathers' reports of parent-child conflict.

Discussion

Within this section I will review the findings of the current study in relation to each research question and hypothesis. I will first describe the correlational relationships found, followed by the results from the mediation analyses. Next, I report on the limitations of the current study. Finally, implications of research findings and future directions are discussed.

Correlational Findings

As expected, maternal parenting stress was related to both mothers' reports of parent-child conflict and to mothers' reports of children's internalizing behaviour problems. Specifically, mothers' reports of higher levels of parenting stress were related to higher reports of mother-child conflict and to higher reports of children's internalizing behaviour problems. These results are consistent with previous research findings indicating a relationship between mothers' parenting stress and children's internalizing behaviour problems (e.g., Rodriguez, 2011; Tharner, 2012), as well as preceding research findings indicating a relationship between mothers' parenting stress and mother-child conflict (e.g., Hakvoort, 2012; Garcia et al., 2017). Furthermore, and as expected, mothers' reports of parent-child conflict were related to mothers' reports of children's internalizing behaviour problems. Specifically, higher reports of mother-child conflict were related to higher reports of children's internalizing behaviour problems. These results are consistent with previous research findings indicating a relationship between mothers' reports of parent-child conflict and mothers' reports of children's internalizing behaviour problems (e.g., Sentse & Laird, 2010).

Unexpectedly, observed mother-child conflict was not related to mothers' reports of parenting stress or to mothers' reports of children's internalizing behaviour problems. These results differ from the limited research findings indicating a relationship between observed mother-child conflict and mothers' parenting stress (e.g., McKay, 1996). Furthermore, while this study is among the first to examine the relationship between observed parent-child conflict and children's internalizing behaviour problems, these results are divergent from preceding research findings indicating a relationship between mothers' reports of parent-child conflict and children's internalizing behaviour problems (e.g., Branje et al., 2010).

As anticipated, fathers' parenting stress was related to fathers' reports of parent-child conflict and to fathers' reports of children's internalizing behaviour problems. Specifically, fathers' reports of higher levels of parenting stress were related to higher reports of father-child conflict and to higher reports of children's internalizing behaviour problems. These results are consistent with the limited literature indicating a relationship between fathers' parenting stress and children's internalizing behaviour problems (e.g., Costa et al., 2006; Hart & Kelley, 2006). Although this study is among the first to examine the relationship between fathers' parenting stress and father-child conflict, these results are congruent with preceding research findings indicating a relationship between mothers' parenting stress and mother-child conflict (e.g., Garcia et al., 2017). As expected, fathers' reports of parent-child conflict were related to fathers' reports of children's internalizing behaviour problems. Specifically, higher reports of father-child conflict were related to higher reports of children's internalizing behaviour problems. Although this study is among the first to examine this relationship in father-child dyads,

these results are consistent with preceding research findings indicating a relationship between parent-child conflict and children's internalizing behaviour problems in mother-child dyads (e.g., Sentse & Laird, 2010). Importantly, these results contribute to the parenting literature by indicating that fathers' levels of parenting stress and levels of parent-child conflict are related to children's internalizing behaviour problems.

Unexpectedly, observed father-child conflict was not related to fathers' reports of parenting stress or to fathers' reports of children's internalizing behaviour problems. It is important to note that this study was the first to investigate the relationships between observed father-child conflict, parenting stress, and children's internalizing behaviour problems. Nonetheless, it was expected that results would mirror research findings indicating relationships between observed mother-child conflict and mothers' reports of parenting stress (e.g., McKay, 1996), and research findings indicating relationships between mothers' reports of parent-child conflict and mothers' reports of children's internalizing behaviour problems (e.g., El-Sheikh & Elmore-Stratton, 2004). These findings are, however, consistent with the pattern of results found with this study's mother-child dyads, wherein observed mother-child conflict was not related to mothers' reports of parenting stress or to mothers' reports of children's internalizing behaviour problems.

Mediation Findings

As predicted, I found that for both mothers and fathers, parenting stress had an indirect effect on children's internalizing behaviour problems through the mediator of parent-child conflict. These results provide alternate evidence to Abidin's Parenting Stress Model's hypothesis that negative parenting behaviours mediate the relationship

between parenting stress and child outcomes (Abidin, 1992). Rather, the present research findings lend support for transactional developmental theories, which emphasize that the mutual and reciprocal qualities of the parent-child relationship are likely better predictors of child outcomes (Deater-Deckard & O'Connor, 2000; Hinde, 1987). Considering the broader parenting stress literature, the results of the current study may explain why previous research findings have been mixed or non-significant when examining negative parenting behaviours as the mediator of the relationship between parenting stress and child internalizing behaviour problems (e.g., Anthony et al., 2005; Crnic et al., 2005; Huth-Bocks & Hughes, 2008). The present study's results underscore the importance of examining dyadic and reciprocal aspects of the parent-child relationship in relation to child outcomes. Considering that most research in the field of child development excludes examining parent-child mutual influences, these research findings emphasize the importance of considering factors at the dyadic or relationship level, rather than individual parent or child variables (Deater-Deckard & Petrill, 2004).

Contrary to my hypotheses, for both mothers and fathers, observed parent-child conflict did not mediate the relationship between parenting stress and child internalizing behaviour problems. While there is limited research examining observed parent-child conflict in relation to parenting stress and child internalizing behaviour problems (i.e. McKay, 1996), it was anticipated that for both mothers and fathers observed parent-child conflict would serve as a mediator of parenting stress and child internalizing behaviour problems, similar to parent-reported parent-child conflict. A potential explanation for this unexpected finding is that observed parent-child conflict in this study's sample was notably low. Moreover, the discrepancy between parent-reported and observed parent-

child conflict indicates potential result-biases rising from different methods (i.e. self-report and observational). The present study's results are consistent with preceding research findings indicating discrepancies between parental reports and observations of parent-child interactions (e.g., Bennett, Sullivan, & Lewis, 2006). It is possible that the observational and parent-reported methods used in the current study were differentially measuring the construct of parent-child conflict (i.e., actual compared to perceived; Moens, Weeland, Van der Giessen, Chhangar, & Overbeek, 2018).

Limitations and Future Directions

The results of the current study should be interpreted in light of the following three limitations. First, despite recruiting broadly, the study sample was fairly homogeneous in that most families were considered high-functioning families. As expected with a community, rather than clinical sample, both mothers' and fathers' self-reports of parenting stress ($M_s = 46.92, 47.80$, respectively) and child internalizing behaviour problems ($M_s = 50.93, 50.74$, respectively) fell within the average/normative ranges of dysfunction. Furthermore, both mothers' and fathers' reports of parent-child conflict ($M_s = 2.29, 2.31$, respectively) and observations of both mother-child and father-child conflict ($M_s = 1.08, 1.03$, respectively) indicated considerably low levels of parent-child discord. Moreover, the subsample of 100 families included in the observational portion of the current study may have been subject to further self-selection bias. That is, parents who elected to participate in the home-visit portion of the study were comfortable with researchers entering their homes and studying their interactions with their child. As such, it is possible that families with higher levels of parent-child conflict elected not to have interactions observed and video-taped by researchers. Furthermore, it is possible

that the short clean-up task did not allow ample opportunity to observe instances of parent-child conflict. Accordingly, future studies should examine these relationships with clinical samples of participants and with families experiencing high levels of discord, as parents and children interact during longer and potentially more stress-inducing observed tasks.

Second, the majority of the measures included in the current study were parental reports. This methodological approach may have inflated associations due to shared method biases (e.g., Podsakoff et al., 2003), and the potential tendency for distressed parents to rate their child's problems as more severe than they objectively are (Najman et al., 2000). The current study relied on parents to convey both their levels of parenting stress and to report their child's levels of internalizing behaviour problems. A portion of the relationships found in the current study may be accounted for by parents' negative perceptions of their child and their parenting situation. Relatedly, a persistent question within the parenting stress literature is whether measures of parenting stress are distinct from measures of parental psychopathology (Costa et al., 2006; Deater-Deckard, 1998). Researchers have documented significant overlap between these two constructs (e.g., Costa et al., 2006), suggesting a potential interference of this variable in the relationship between parenting stress and parental reports of children's internalizing behaviour problems. To account for potential shared method bias, future studies should measure and control for parents' own experiences of internalizing behaviour problems or psychopathology. Furthermore, researchers may employ reliable measures of child internalizing behaviour problems that are not parent-reported in their examination of these associations.

Third, the correlational design of the current study was a notable limitation for drawing conclusions on the relationships among variables. Studies conducted at a single time-point cannot inform researchers of the temporal precedence of variables and can only speak to the relationships between variables, rather than claim causality (Field, 2018). Nonetheless, correlational studies of this nature are important for guiding researchers toward variables likely to be related and are useful for informing future longitudinal work (Field, 2018). In future studies, researchers may wish to examine the relationship between these variables over time to better understand how parenting stress might causally contribute to children's internalizing behaviour problems. This may be accomplished by studying parenting stress and parent-child conflict at a first time-point when the child is in preschool, and following up one to two years later on ratings of child internalizing behaviour problems.

Implications

From a theoretical perspective, the findings of the current study support Abidin's Parenting Stress Model's (1992) postulation that heightened parenting stress relates to negative child outcomes, in the form of internalizing behaviour problems. Further, as the first study to examine parent-child conflict as the mediator in the relationship between parenting stress and child internalizing behaviour problems, these findings support transactional models of child development. These findings offer evidence that characteristics of the parent-child dyad, rather than autonomous parenting behaviours, might mediate the link between parenting stress and children's internalizing symptoms. In light of these findings, I challenge Abidin's parenting stress theory to expand its scope from unilateral parental influences toward dyadic parent-child interaction characteristics.

Practically, the results of the current study may have implications for both parents and practitioners. Considering that the current study's findings underscore parenting stress and parent-child conflict as related to children's internalizing behaviour problems, parents should be made aware of how their stress levels and interactions with their child may be associated with their child's emotional adjustment. As well, the research findings may enhance parents' understanding of how closely both mother and father functioning are tied to early child development and positive adjustment. Considering that Canadian parents are currently experiencing higher stress levels than ever before (Statistics Canada, 2018), these research findings underscore the importance of parents seeking out supports for managing their stress levels and stressful components related to the parenting role. Moreover, while parents should consider the quality of interactions with their child at all times, developing positive patterns of interaction early on in a child's life may help to circumvent the development or exacerbation of children's emotional difficulties (Stone et al., 2015). These results may motivate parents to seek out the necessary supports to help foster and maintain quality relationships with their child.

These findings also have practical implications for practitioners' prevention efforts targeting children's development of internalizing behaviour problems. These research findings may shift practitioners' focus towards targeting both mothers' and fathers' parenting stress and both mother-child and father-child conflict in early prevention programs targeting the development of internalizing behaviour problems. Furthermore, this study's findings emphasize the importance of considering both mothers' and fathers' parenting stress and levels of parent-child conflict in prevention efforts targeting children's development of internalizing behaviour problems.

Conclusion

This study offers a new perspective on the relationship between parenting stress and child internalizing behaviour problems. While researchers have previously found a relationship between maternal parenting stress and child experiences of internalizing behaviour problems, the current study indicates this relationship in father-child dyads, and also identifies parent-child conflict as an underlying mechanism in the relationship between parenting stress and child internalizing behaviour problems. This study supports Abidin's Parenting Stress Model (1992) in that heightened levels of parenting stress are related to a higher incidence of negative child outcomes. Research findings simultaneously challenge this parenting stress model's narrow examination of unilateral parenting behaviours as a mediator. The finding that parent-reported parent-child conflict mediated the relationship between parenting stress and child internalizing behaviour problems supports a conceptualization of parenting stress influenced by transactional theoretical models of child development.

By considering how both mothers' and fathers' parenting stress levels and conflict with their child may relate to child maladjustment, parents and practitioners may be able to mitigate children's early development of internalizing behaviour problems. Given that preschool-aged children who experience untreated internalizing behaviour problems are likely to experience internalizing symptoms throughout the course of their childhood (Barterian et al., 2014), the identification of factors that promote their healthy development is crucial.

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Appendix A

The Parenting Stress Index Fourth Edition-Short Form (PSI-4-SF; Abidin, 2012)

Link to Publisher Website: <https://www.parinc.com/Products/Pkey/333>

Appendix B

The Behavior Assessment System for Children, Second Edition (BASC-II; Reynolds & Kamphaus, 2004)

Link to Publisher Website:

<https://www.pearsonassessments.com/store/usassessments/en/c/Behavior-Assessment-System-for-Children-%7C-Second-Edition-/p/100000658.html>

Appendix C

The *Child Parent Relationship Scale* (CPR-S; Pianta, 1992)

CHILD-PARENT RELATIONSHIP SCALE

Robert C. Pianta

Child: _____ Age: _____

Parent: _____

Please reflect on the degree to which each of the following statements currently applies to your relationship with your child. Using the scale below, circle the appropriate number for each item.

Definitely does not apply 1	Not really 2	Neutral, not sure 3	Applies somewhat 4	Definitely applies 5
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1. I share an affectionate, warm relationship with my child.	1	2	3	4	5
2. My child and I always seem to be struggling with each other.	1	2	3	4	5
3. If upset, my child will seek comfort from me.	1	2	3	4	5
4. My child is uncomfortable with physical affection or touch from me.	1	2	3	4	5
5. My child values his/her relationship with me.	1	2	3	4	5
6. My child appears hurt or embarrassed when I correct him/her.	1	2	3	4	5
7. My child does not want to accept help when he/she needs it.	1	2	3	4	5
8. When I praise my child, he/she beams with pride.	1	2	3	4	5
9. My child reacts strongly to separation from me.	1	2	3	4	5
10. My child spontaneously shares information about himself/herself.	1	2	3	4	5
11. My child is overly dependent on me.	1	2	3	4	5
12. My child easily becomes angry at me.	1	2	3	4	5
13. My child tries to please me.	1	2	3	4	5
14. My child feels that I treat him/her unfairly.	1	2	3	4	5
15. My child asks for my help when he/she really does not need help.	1	2	3	4	5
16. It is easy to be in tune with what my child is feeling.	1	2	3	4	5
17. My child sees me as a source of punishment and criticism.	1	2	3	4	5
18. My child expresses hurt or jealousy when I spend time with other children.	1	2	3	4	5
19. My child remains angry or is resistant after being disciplined.	1	2	3	4	5
20. When my child is misbehaving, he/she responds to my look or tone of voice.	1	2	3	4	5
21. Dealing with my child drains my energy.	1	2	3	4	5
22. I've noticed my child copying my behavior or ways of doing things.	1	2	3	4	5
23. When my child is in a bad mood, I know we're in for a long and difficult day.	1	2	3	4	5
24. My child's feelings toward me can be unpredictable or can change suddenly.	1	2	3	4	5
25. Despite my best efforts, I'm uncomfortable with how my child and I get along.	1	2	3	4	5
26. I often think about my child when at work.	1	2	3	4	5
27. My child whines or cries when he/she wants something from me.	1	2	3	4	5
28. My child is sneaky or manipulative with me.	1	2	3	4	5
29. My child openly shares his/her feelings and experiences with me.	1	2	3	4	5
30. My interactions with my child make me feel effective and confident as a parent.	1	2	3	4	5

Appendix D

The Parent Child Interaction System (PARCHISY; Deater-Deckard, Pylas & Petrill, 1997)

Global Ratings for the Etch-A-Sketch Task

Dyadic Codes

Conflict: minor or major disagreement - mutual or shared negative affect; arguing, tussling over toy, etc.

- (1) no evidence of conflict during task
- (2) one or two instances of conflict
- (3) a few/several instances of conflict
- (4) moderate amounts of conflict - about half of interaction is conflictual
- (5) conflicted interaction throughout, with a few/several instances of no conflict
- (6) substantial conflict throughout, with only one or two instances of no conflict
- (7) highly conflicted interaction for entire task