

DOMAIN-SPECIFIC SECRECY IN MIDDLE CHILDHOOD:
ASSOCIATIONS WITH PARENTAL KNOWLEDGE
AND CHILD WELL-BEING

By

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Abstract

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The current study examined the existence and effects of secrecy in middle childhood. The majority of previous research analyzing secrecy and disclosure focuses on the developmental period of adolescence. By including middle childhood, the current study examined possible adjustment outcomes of children who keep secrets as well as identify in what subjects children keep secrets from parents. The study reiterated the distinctive contributions of disclosure and secrecy to parental knowledge and child well-being in middle childhood.

The current study used data from 58 third through sixth grade children and their families ($n = 43$). Mothers and children filled out individual questionnaires about secrecy, disclosure, parental knowledge, and child adjustment outcomes.

Results indicated secrecy is common in middle childhood across the domains of school, free-time, and friends. Disclosure and secrecy emerged as unique constructs to independently contribute to parental knowledge and predict differing adjustment outcomes. Child reports of secrecy were negatively associated with depressive symptoms and positively associated with delinquency reports. Parental characteristics of control and nurturance were not significant

predictors of secrecy. Discussion includes measurement considerations in middle childhood as well as possible avenues for future research in secrecy.

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CHAPTER ONE

INTRODUCTION

The aim of this study is to examine secrecy and disclosure in middle childhood. By measuring secrecy and disclosure as unique constructs, this study will explore the characteristics of children who openly disclose information to parents as well as those children who keep secrets from parents. Secrecy and disclosure have been linked to numerous positive and negative outcomes in adolescence. A goal of this study is to examine their potential associations with child outcomes during middle childhood; another goal is to explore possible predictors of secrecy and disclosure, including the parent-child relationship, parenting behaviors and individual characteristics of the child. This study also will explore specific domains of secrecy during middle childhood.

Current research has emphasized the importance of parental knowledge about children's activities and whereabouts. Low levels of parental knowledge have been linked to various negative outcomes in adolescence, including substance abuse and delinquent behavior (Dishion, Capaldi, Spracklen, & Li, 1995; Stattin & Kerr, 2000). Stattin and Kerr (2000) dissected the construct of parental knowledge to find how parents actually obtain knowledge about their children. Their results showed that adolescent disclosure was more strongly associated with parental knowledge than were either parental solicitation or control behaviors.

Disclosure in parent child relationships has been identified as a significant contributor to positive developmental outcomes in adolescence (Crouter, Bumpus, Davis, & McHale, 2005; Soenens, Vansteenkiste, Luyckx, and Goossens, 2006; Stattin & Kerr, 2000; Waizenhofer, Buchanan, & Jackson-Newsom, 2004). However, findings from these studies are incomplete, as they describe only a portion of adolescent information management by neglecting adolescents'

ability to intentionally withhold information and keep secrets. Adolescents keep secrets about numerous topics; the most common domain for secrecy amongst adolescents pertains to rule-breaking and deviant behavior (Marshall, Tilton-Weaver, & Bosdet, 2005). Positive outcomes have been consistently linked with disclosure, yet Finkenauer and colleagues (Finkenauer, Engels, & Meeus, 2002; Finkenauer, Frijns, Engels, & Kerkhof, 2005) found secrecy and disclosure were related to different outcomes concerning child wellbeing and parental knowledge. Bumpus and Hill (2008) also found only moderate negative associations between secrecy and parent child communication, further demonstrating the need to measure secrecy and disclosure as separate constructs.

In sum, there are two gaps in the existing literature on the associations among children's secrecy, the parent-child relationship, and child well-being. First, the existing disclosure/secrecy literature spotlights adolescence with insufficient attention to other developmental periods. Peskin (1992) found that children have the ability to keep secrets as early as age five, predominantly about hiding one's intentions (e.g. what toys they want; what they will do when mother is out of the room). As stated previously, secrecy in adolescence often concerns avoiding punishment or hiding deviant behavior. For the most part, it is unknown what secrecy in middle childhood looks like. Under what conditions are children secretive during this developmental period? What are the secrets about? Middle childhood is an educative period to explore new social endeavors and develop relational habits with peers and parents to carry on through adolescence. Assessing secrecy during this time could identify predictors of problem behaviors and potential positive or negative trajectories that may have implications for future development.

The second gap in the literature concerns the measurement of secrecy as a separate construct from disclosure. In various existing studies (Darling, Cumsille, Caldwell, and Dowdy, 2006; Smetana, Metzger, Gettman, & Campione-Barr, 2006; Tilton-Weaver & Marshall, 2008), secrecy has been operationalized as a lack of disclosure, the opposite ends of one continuum. In measuring disclosure and secrecy as opposites, or by failing to measure secrecy at all (Fletcher, Darling, & Steinberg, 1995; Soenens et al., 2006; Waizenhofer et al., 2004), it remains unclear whether associations between disclosure and child adjustment are in fact due to high levels of disclosure, or rather due to low levels of secrecy. It is important to examine the role of secrecy as a potential contributor to parental knowledge and child wellbeing, as well as its relations to disclosure.

The present study expands existing literature by including a sample of preadolescent children. The majority of current research analyzing secrecy and disclosure focuses on adolescence. By including middle childhood, the current study will examine characteristics of children who keep secrets as well as identify the nature of those secrets. Whereas secrecy in adolescence has focused on the withholding of information regarding deviant behavior, secrecy in middle childhood may take on a less negative or consequential role in development. Middle childhood is a sensitive developmental time period to create schemas and habits before they are more established in adolescence. If predictors of secrecy are identified, and secrecy is correlated with problematic child adjustment, this research generates possibilities for parental and teacher intervention strategies. Additionally, the majority of data on parental knowledge and secrecy is limited to parent reports or parent and child reports. This unique multisource dataset includes parent and child reports of secrecy, disclosure, parental knowledge and child adjustment.

CHAPTER TWO

LITERATURE REVIEW

Individuation and Emotional Autonomy

The relationship between a parent and child changes dramatically during the periods of middle childhood and adolescence. Children begin school and spend less time with their families. Adolescents especially, are transitioning to new schools, creating new peer groups and engaging in new activities (Larson, Richards, Moneta, Holmbeck, & Duckett, 1996), place more importance on their peers' opinions, and have more opportunity for risky behavior (Crouter et al., 2005). In taking on new roles, adolescents are required to manage more of their own time and decisions. This research has reinforced the need to conceptualize autonomy as an important part of development.

Major transformations and adjustments of the parent-child relationship occur as children approach adolescence. The explanations and theories concerning these adjustments have varied from hormonal (Brooks-Gunn & Reiter, 1990) to social (e.g., greater emphasis on peers; Brown, 1990). Middle childhood is a developmental period, ages 6 to 11 between two well researched and sensitive periods of development. Historical models of development tend to minimize the significance of the middle childhood years, labeling this stage a "latency" phase between the seemingly more active periods of early childhood and adolescence (Freud, 1961). Early childhood often is viewed as foundational for socialization and cognitive development, whereas a great deal of attention has been paid to autonomy building and puberty as components of adolescent development. Middle childhood is the link between these two periods where children can continue on the foundations built in the preschool years and expand, maintain or minimize habits that may become more concrete in adolescence.

More recent models of development demonstrate that middle childhood is a vital period for the maturation of important psychosocial competencies such as gaining cognitive skills, social relationship formation (Piaget, 1965) and self-concept formation (Rosenberg, 1986). Current social cognitive theories regard middle childhood as a critical time for the development of social scripts for conduct, normative beliefs and schemas that shape behavior throughout life. Behaviors formed in middle childhood have been shown to display considerable continuity into adolescence and adulthood, including aggression (Huesmann, Eron, Lefkowitz, & Walker, 1984); academic achievement (Jimerson, Egeland, Sroufe, & Carlson, 2000); and peer competence (Collins & Van Dulman, 2006)

It is vital during middle childhood and adolescence that children learn to function independently while remaining connected to parents. Autonomy can take many forms; theorists have focused on behavioral, emotional, and cognitive dimensions. Steinberg (1990) asserted that autonomy is organized into three categories: *emotional* (relationships with others and individuating from parents), *behavioral* (regulation of one's own behavior and acting on personal decisions, and *cognitive* (independent reasoning and decision making). Emotional and behavioral autonomy often emerges earlier and become major developmental issues during early adolescence. Steinberg believed that autonomy development does not typically involve rebellion and tense family relationships; in warm and flexible families, parent-child relationships can evolve smoothly and positively.

Some traditional perspectives on adolescent autonomy are derived from psychoanalytic theories. Blos (1979) believed that conflict between adolescents and parents is normal and necessary to develop independence from parents. Blos also believed that individuation in adolescence leads to emotional autonomy; rather than detaching from their parents, adolescents

conceptualize their parents as separate people and lessen the dependencies of the earlier childhood years. Steinberg and Silverberg (1986) advanced the study of autonomy and individuation (as described by Blos) by developing a scale to measure four components of emotional autonomy: non-dependence, individuation, parental de-idealization, and perceiving one's parents as people. This scale was based on models focusing more on the smooth process of individuation rather than the traditional storm and stress models of adolescence. These authors found that autonomy evolves within supportive relationships to caregivers in which adolescents are provided increasing opportunities for dialogue and decision-making. Their study of 865 10-16 year old adolescents found that emotional autonomy was negatively related to peer pressure resistance and to self-reliance. The authors concluded that adolescents transition from parental reliance to self-reliance, with a period in which adolescents are influenced by peers. Older adolescents showed less reliance on peers and parents, displaying the development of emotional autonomy and independence.

Emotional autonomy has been a highly contested dimension of positive adolescent development. Ryan and Lynch (1989) argued that emotional autonomy as measured by Steinberg and Silverberg (1986) actually assessed detachment from parents rather than autonomy. Although the authors noted that self-reliance could stem from detachment, they proposed that detachment could also result in a loss of connectedness and lower self-esteem. Chen and Dornbusch (1998) also evaluated emotional autonomy and found that the measurement of individuation was the only domain associated with negative psychological and behavioral outcomes. The authors note the subscale of individuation reflected perceived parental understanding (care and warmth when child is upset) and parental lack of knowledge. Lamborn and Steinberg (1993) also found that individuation was correlated with negative events except

when children reported supportive relationships with their parents. Adolescents who score high on individuation report more distress and deviant behavior when they also report that their parents do not know or understand them. The previous studies emphasize the importance of measuring parental behaviors and parent knowledge in assessing the importance and outcomes of individuation and emotional autonomy development in adolescence.

Attachment and Parenting Styles

A secure parent-child attachment is an influence which has been linked to numerous positive social and emotional outcomes. Children with a secure attachment to parents have shown higher self-esteem and more frequent cooperation with peers (Belsky & Cassidy, 1994). Attachment is first formed during infancy but an attachment figure is important throughout childhood and adolescence. In middle childhood, children refer to parents for social support as an attachment figure (Furman & Buhrmester, 1992). Although overt attachment behaviors sometimes decrease during middle childhood and adolescence, parental availability may be evidence of a secure parent-child attachment. Attachment in middle childhood and adolescence is seen in the child's awareness of the availability of a parent for communication, as a resource for help, and in their physical accessibility.

Attachment in middle childhood has also been linked to increased parental knowledge and a child's willingness to disclose. Kerns, Aspelmeier, Gentzler, and Grabill (2001) examined a cross-sectional study of third and sixth grade children and their parents. Attachment, parental knowledge of child whereabouts and activities, and the child's voluntary contribution to parental knowledge were assessed. Correlations between attachment and parental knowledge showed that mothers who were willing to serve as an attachment figure had increased levels of parental knowledge. Child contributions to parental knowledge were strongly correlated with attachment.

Children who disclosed more to both mothers and fathers also reported stronger attachments. Although this pattern held for third graders, the findings were even more robust for sixth grade children, emphasizing the importance of attachment and child communication going into adolescence.

Parent-Child Communication

As children move toward adolescence, parents are able to provide more autonomy and decision making opportunities. The legitimacy of parental authority refers to the degree to which parents' control over an area is believed to be a natural or appropriate extension of their role as parents (Smetana, 1988). For example, setting prudential rules (alcohol and cigarette use) and social moral standards (stealing) are generally seen by both parents and adolescents as legitimate domains for parental authority. Disagreement between adolescents and parents often exists concerning domains such as peer relationships and extracurricular activities that may be viewed as personal by adolescents but as conventional by parents. The disagreement over parental authority widens over the course of adolescence as youth increasingly believe that their peer and free-time experiences are their own responsibility (Smetana, 1988).

Cumsille, Darling, Flaherty, and Martinez (2006) found age related differences concerning parental authority. Children ages 10-14 were more likely to accept parental authority in all domains than were older adolescents. Greater variability was observed in issues that are both personal and safety-related, such as spending time with problematic friends. This implies some issues are conflictual throughout all of adolescence. This differentiation and conflict between parent and child is common during the autonomy-seeking phase of adolescence. When parental authority and conflict are taken into account, children may be more inclined to control how much their parents know about specific domains. If parents and children have little

disagreement about parental authority or are able to negotiate rules and expectations, children may be more likely to volunteer information and less likely to conceal details about their daily activities.

Parents must know what their children are doing and their whereabouts in order to protect them from harm, keep them from deviant peers, and aid them in avoiding antisocial behaviors. Patterson and Stouthamer-Loeber (1984) assessed monitoring as an active parental behavior where parents supervised and knew about their child's whereabouts and activities. The authors measured parental monitoring, discipline, problem solving, and reinforcement and found that only monitoring was strongly associated with delinquent behaviors and police contacts. Parents who were less knowledgeable about their child's friends, activities and whereabouts had children who engaged in higher rates of delinquent behaviors.

Prompted by this pattern, early research on parental monitoring focused attention on parental behaviors that would protect youth from delinquent peers and problem behaviors. Snyder and Patterson (1987) suggested that parents need a firm set of rules about who the child may associate, where the child can go, when they must be home and then checking-in to make sure children are complying. These preliminary studies called for parents to exert more control and a firm hand to manage their children's behaviors and associations.

'Monitoring' and Parental Knowledge

Parental monitoring has played a vital role in research on parenting behaviors and adolescent outcomes. Monitoring children and adolescents previously included more involvement on the parents' behalf to know who their child was with, what they were doing and even home activities such as homework and chores. Specifically for adolescents, parental monitoring was identified as a 'skill' where parents were able to communicate with their child,

ask for information, and use other adults as information resources (spouses, teachers, neighbors). Dishion and McMahon (1998) defined monitoring as both structuring a child's environment and tracking activities and whereabouts. Several studies have confirmed Patterson's initial findings and have linked low levels of parental monitoring to deviant activities and substance use (Brown, Mounts, Lamborn, & Steinberg, 1993; Fletcher et al., 1995). Dishion and his colleagues found that parental monitoring was correlated with adolescent alcohol and marijuana use (Dishion & Loeber, 1985). Low parental monitoring was also associated with smoking tobacco (Steinberg, 1987) and an onset of substance use as early as 9 or 10 years of age (Dishion, Reid, & Patterson, 1988; Dishion, Capaldi, Spracklen, & Li, 1995). Poorly monitored adolescents have more instances of delinquency, criminal behavior, antisocial tendencies (Dishion & Andrews, 1995; Weintraub & Gold, 1991), and perform worse in school (Crouter, MacDermid, McHale, & Perry-Jenkins, 1990).

Parental behaviors were the initial focus in monitoring studies. Stattin and Kerr (2000) reassessed the monitoring literature and found that parents who scored high on monitoring were actually being measured on how much they *know* about their child. Parents were asked to assess their knowledge of who their child spends time with, where they are after school and what activities they are involved in, but few studies examined *how* the parents got their information; Stattin and Kerr noted that parents reported on their amount of knowledge regarding children's daily activities, and that such knowledge was assumed to emerge from active parental behaviors such as solicitation, surveillance, and tracking. In fact, they argued, usage of the term parental "monitoring" was inaccurate given that researchers were actually measuring parental "knowledge".

Stattin and Kerr (2000) were the first to note that youth may play an active role in the extent to which parents are knowledgeable, and encouraged the field to consider children's active disclosure as a possible contributor to parental knowledge. In their study, Stattin and Kerr (2000) assessed Swedish 14-year-olds and their families. The families ($N = 539$) reported on parental knowledge, child disclosure, parent solicitation, parent child relationship quality, parental control, and adolescent delinquent behavior. Child disclosure was the highest correlate of parental knowledge, $r = .63$ for parents and $r = .66$ for children (both p 's $< .001$). Child disclosure was also a stronger predictor of adolescent delinquent behavior than either active parental control or parental knowledge. In contrast to earlier studies on this topic (Dishion et al., 1998, Snyder et al., 1987), Stattin and Kerr provided evidence that parental 'monitoring' may be less about direct supervision and parental behaviors, and more about parent-child communication processes such as child disclosure. Both parent and child reports of parental knowledge were best explained by the child's voluntary disclosure of information. These authors not only encouraged the use of the term "parental knowledge", but also argued for an examination of the ways in which children participate (or do not participate) in the acquisition of parental knowledge.

One important predictor of child disclosure seems to be the overall nature of the parent-child relationship. According to Stattin and Kerr (2000), parental knowledge relies greatly on the relational side of parenting. The degree to which parents are warm and involved and avoid the use of intrusive parenting techniques is equally important to limit setting and disciplinary actions. Warm and responsive parenting styles provide a family climate where children are able to openly engage in communication, which may promote parental knowledge. More knowledgeable parents score higher on scales of warmth and responsiveness and lower on

behavioral and psychological control (Fletcher, Steinberg, Williams-Wheeler, 2004; Soenens et al., 2006).

Aunola, Stattin, and Nurmi (2000) also assessed the relational side of parenting and included measurements of parental knowledge and child disclosure. The authors tested both parent reports of parenting styles as well as the child's perception of parental behaviors. Measuring child perspectives of disclosure and parental knowledge recognizes the importance of the child's role in parental knowledge and practices, where children are actively contributing to the parent-child relationship. When clustered into parenting styles, authoritative parents reported higher levels of child disclosure, parental knowledge, and parental engagement (parents soliciting information); this pattern was also found in analyses focused on adolescent reports. This study suggests that parenting styles, specifically the authoritative style, is associated with positive autonomous behaviors. A unique characteristic of adolescents in authoritative families was their willingness to disclose, suggesting that parent-child relationship characteristics are important in the development of children's voluntary disclosure as well as, perhaps, parental knowledge.

Children as Active Managers

A previously mentioned, contemporary research on parenting has noted that children play a more active role in contributing to parental knowledge than was once believed. Children are able to actively manage not only how they spend their time outside of parental supervision but also how much the parent will eventually know about their activities. Children contribute to parental knowledge through disclosure and nondisclosure techniques. Disclosure refers to voluntarily providing parents with information or sharing after parents prompt for information (Tilton Weaver & Marshall, 2008). Nondisclosure is when information is not provided, either

voluntarily or otherwise. Children may fail to disclose in a multitude of ways. Nondisclosure can occur unintentionally where children simply forget to share information with their parents or simply do not have enough time with their parents to share all their daily activities.

Nondisclosure can also be intentional where children choose to withhold or keep information. In other situations, children may also choose not to disclose by only providing partial information.

Finkenauer, Engels, & Meeus (2002) considered that while children may choose to disclose, they may also intentionally withhold certain details about activities and whereabouts. For example, a child may voluntarily share where they went after school but withhold the fact that there were no adults present to supervise. These intentional methods of nondisclosure describe what is often referred to as “secrecy”. Finkenauer and her colleagues found secrecy and disclosure were differentially related to child wellbeing and parental knowledge. Bumpus and Hill (2008) also found that children’s secrecy about their daily experiences was only moderately associated with parent-child communication. These studies provide a rationale for defining secrecy and nondisclosure as related, but distinct constructs.

A few studies have shown that secrecy is negatively associated with parental knowledge. Marshall, Tilton-Weaver, & Bosdet (2005) assessed the effect of adolescent disclosure and secrecy on parental knowledge and the domains where adolescents are more likely to conceal or lie about activities. Results indicated that adolescents lied and withheld information about substance use and antisocial behaviors. When analyzing strategies for conveying information to parents, adolescents disclosed most often when they thought parents had authority to know (e.g., when going somewhere at night with people they don’t know as opposed to seeing a known friend and going to the library) and for social support (protection from harm or assistance with daily tasks). The second most common strategy used was ‘sort of tell’, describing when children

disclose partial information and intentionally withhold details they think their parents do not need to know or would disapprove. This qualitative analysis of information management strategies emphasizes the needs for current research to focus on the domains in which children are concealing information and the nature of the parent-child relationship.

Bumpus and Hill (2008) also found that parents of highly secretive children had significantly less knowledge about their children in Year 1 and 2, suggesting that secrecy also indirectly affects children via decreases in parental knowledge. Parental responsiveness, behavioral control and low psychological control are commonly correlated with lower substance use and delinquency (Fletcher et al., 2004; Waizenhofer et al., 2004). Soenens et al. (2006) found that parental responsiveness was related to problem behaviors only through self-disclosure and parental knowledge. The results suggest that decreases in problem behavior are largely due to responsive parenting and the ability to foster an environment where children openly share information and contribute to parental knowledge.

Secrecy and Child Wellbeing

Disclosure and secrecy have also been studied to predict child-well being and adjustment. Stattin and Kerr (2000) found disclosure to parents to be negatively correlated with norm breaking behaviors (e.g., substance use, fighting, stealing), and police contact. It is important to note, however, that Stattin and Kerr did not distinguish intentional secrecy from more general low disclosure. Associations between secrecy and child adjustment were examined by Bumpus and Hill (2008). The authors gathered teacher reports of behavioral adjustment and child reports of knowledge and secrecy (n=295). The 2-wave data set allowed measurement of changes in behavioral and psychosocial development. Interestingly, participants with high levels of secrecy in Year 1 were rated by teachers as less socially competent, more aggressive and oppositional in

the classroom for both Year 1 and 2. In another longitudinal study, Frijns, Finkenauer, Vermulst, and Engels (2005) also found behavioral consequences of secrecy in adolescence. The 2-wave study of 1173 10-14 year olds showed significant negative psychosocial and behavioral outcomes. Supplementing the previous findings, secrecy was linked with depressive mood and high stress levels. The behavioral outcomes found were aggression and delinquency. The correlation between secrecy and delinquency was stronger for boys than girls, but was significant for both genders. Results were based on adolescents' self reports of aggressive and delinquent behaviors and secrecy. Finkenauer et al. (2002) also found numerous disadvantages to secrecy. Adolescents who kept secrets from their parents had higher levels of both physical and psychological distress. Adolescents who kept more secrets had more physical complaints (headaches, nausea, tiredness, etc), as well as higher levels of depressive moods.

Examples of the advantages of secrecy for adolescent well-being are fewer in the literature. Finkenauer et al. (2002) studied the possible benefits of secrecy in a sample of 227 12-18 year old adolescents. The authors tested the correlation between secrecy and emotional autonomy, an important step in adolescent development (Steinberg & Silverberg 1986). The authors came to the conclusion that secrecy significantly contributed to adolescents' feelings of emotional autonomy. They also tested the three variables making up emotional autonomy: deidealization, perceptions of parents as people, and individuation. The analyses found secrecy as a predictor for all three variables, showing secrecy contributed to the positive development of emotional autonomy.

More recent studies have addressed what adolescents are keeping secrets about and what determines disclosure. Adolescents were more likely to keep secrets about information that they disagreed with their parents about, showing that some secrets are domain specific. Darling et al.

(2006) found that adolescents withheld information from their parents that would result in negative consequences or punishment. The information kept secret was domain specific to personal and conventional issues. Adolescents were more secretive about peer and personal issues because they did not feel parents had legitimate right to control personal and social domains (Smetana, 1988; Smetana et al., 2006). Adolescents were likely to conceal information about leisure activities their parents would disapprove of (time with friends, substance use, or unsupervised activities), when they feared punishment, if they disagreed about parental jurisdiction and for various emotional reasons such as embarrassment, shame, guilt, etc (Darling et al. 2006). Children are able to keep secrets as early as 5 years old (Peskin, 1992) and this ability allows children to control personal information and gain autonomy from family and build friendships. Advantages of secrecy may be limited due to the narrow scope of samples outside of adolescence and adulthood. Gender differences have also been found in measuring disclosure and secrecy. Numerous studies have shown that adolescent girls disclose to their mothers more than adolescent boys (Bumpus & Hill, 2008; Finkenauer et al. 2002; Smetana et al., 2006; Stattin & Kerr, 2000). Gender differences in secrecy have not consistently been shown in the literature. Frijns et al. (2005) and Finkenauer et al. (2002) found no significant differences between boys' and girls' reports of secrecy to parents.

It is important to reiterate the need for measuring both secrecy and disclosure when assessing contributors to parental knowledge and developmental outcomes. For example, positive associations between disclosure and parental knowledge have been noted. Stattin and Kerr's (2000) assessment of parental knowledge found that knowledge came mainly from child disclosure and less from active strategies (i.e. solicitation, control). In agreement that disclosure contributes to parental knowledge, Soenens et al. (2006) also argued that parents continued to

play an active role in obtaining knowledge via parental behaviors that facilitate child disclosure: high responsiveness, high behavioral control, and low psychological control. The authors found that these parental behaviors were directly related to parental knowledge and indirectly related, via child disclosure.

The above mentioned studies have established disclosure as a consistent predictor of parental knowledge and the importance of the parent-child relationship in predicting child disclosure. However, these studies have generally not attended to the possibility that some instances of non-disclosure are due to intentional secrecy. Although Stattin and Kerr (2000) raised awareness of the adolescent's active contributions to parental knowledge, for the most part the adolescent's role has been operationalized only as voluntary disclosure, when in reality there are numerous information management strategies adolescents may use. Children may choose to disclose information, simply forget the details, have little or no time for communication with parents, or intentionally keep secrets from parents. The act of intentionally keeping information from parents may be distinct from merely forgetting to tell parents, or from a simple lack of disclosure. Researchers must now ask whether secrecy, or intentional secret-keeping, is more strongly related to parental knowledge and to child adjustment than is simple child disclosure, measured broadly.

Present Study

This study further examines the distinct constructs of secrecy and disclosure and their unique contributions to child well-being in middle childhood. The first goal of this study is to examine the prevalence of secrecy during middle childhood and to identify domains about which children keep secrets. As stated previously, adolescents often keep secrets about delinquent behaviors and activities. When compared to adolescents, children in middle childhood generally

engage in fewer instances of delinquent behavior; therefore the nature of secrets may be less harmful or indicative of wrong-doing in middle childhood and limited to the domain of social relationships, school, and free time. Drawing from Smetana's (1988) work on the legitimacy of parental authority, I predict that most secrets in middle childhood will pertain to social relationships, because children may perceive it as being under personal jurisdiction. Secrecy regarding school experiences will occur in order to possibly avoid punishment or disciplinary actions but is hypothesized to occur less frequently than secrecy regarding social relationships; lastly, some secrets may pertain to free time activities (Hypothesis 1a). I also hypothesize age differences such that older children will have higher rates of secrecy concerning social relationships than will younger children (Hypothesis 1b). Additionally, I hypothesize gender differences such that boys will report higher rates of secrecy and girls higher rates of disclosure (Hypothesis 1c)

Second, it is hypothesized that secrecy and disclosure will be negatively, and moderately, correlated (Hypothesis 2). As stated previously, secrecy and disclosure have been previously measured as opposites on a single continuum. The present study aims to measure secrecy and disclosure separately and identify each as distinct information management techniques and examine their unique contributions to parental knowledge and behavioral adjustment as assessed by teachers.

In addition, this study aims to explicate the relative importance of secrecy and disclosure as predictors of child well-being. It is hypothesized that disclosure is related to higher levels of parental knowledge and positive behavioral adjustment (Hypothesis 3a) while secrecy is related with lower levels of parental knowledge and negative behavioral adjustment (Hypothesis 3b). By defining secrecy as distinct from disclosure, I expect that secrecy will contribute to child well-

being independent from measurements of disclosure and parental knowledge. Because disclosure has been indirectly linked to a multitude positive outcomes (Crouter et al., 2005; Kerr & Stattin, 2000; Soenens et al., 2006; Stattin et al. 2000), I expect secrecy will uniquely contribute more than disclosure in predicting child outcomes. Finally, I examine possible predictors of preadolescent secret keeping. Kerns et al. (2001) found that a secure parent-child attachment predicted parental knowledge and voluntary child disclosure (as measured by check-in measures). For that reason, I hypothesize (4) that unique characteristics of the parent-child relationship and parenting behaviors (e.g. low responsiveness, low behavioral control and high psychological control) will be correlated with secrecy in middle childhood.

Figure 1 is a graphic representation of the proposed hypotheses, illustrating the associations among secrecy and disclosure on child adjustment directly or indirectly through parental knowledge. The multisource data set in the present study provides an opportunity to measure parental knowledge as reported by parents and children. Teacher reports allow a unique view of how a child acts outside of parental supervision and with peers. Identifying the prevalence and predictors of secrecy in middle childhood has implications for prevention and intervention programs that target parent-child relationships. Programs aimed to change parenting behaviors predictive of secrecy would therefore increase parental knowledge and associated positive developmental outcomes. These intervention and prevention opportunities are especially crucial for the developmental time period of middle childhood in order to create and form information management strategies before they are solidified in adolescence.

CHAPTER THREE

METHODS

Participants

Participants included 58 third-sixth grade children and their parents (43 mothers and 23 fathers). One respondent was a grandmother and legal guardian of the child participant. Fifteen families had more than one child participating in the study: 14 families with two eligible children and one family with three eligible children. For the purposes of this study and due to low response rates in fathers, only mother reports will be analyzed. Forty-eight percent of participating children were female. The child sample consisted of 31% third, 24 % fourth, 21% fifth and 24% sixth graders. Among mothers, 88% were European American, 4% were American Indian/Alaska Native, 2% were Black/African American, 2% were Asian American, 2% White/Middle Eastern and 2% were Hispanic. Mothers in the sample were highly educated: 28% had obtained a graduate degree, 42% with a BS/BA degree and 30% with less than a BS/BA degree. Regarding marital status, 78% of mothers were married, 10% divorced, 5% single/living alone, 5% remarried, and 2% single/living with partner.

Measures

Measures Completed by Child

Child Depression Inventory (CDI). The CDI (Kovac, 1992) quantifies a range of depressive symptoms, including disturbed mood, low self-evaluation, hopelessness, and difficulties in personal behavior. In this study, the depression scale had high internal consistency (Cronbach's $\alpha = .83$). Several of the items were context specific (e.g., school). Each of the 27 CDI items consists of three choices, keyed 0 (absence of depressive symptom), 1 (mild symptom, or 2 (definite symptom), with higher scores indicating increasing severity.

Disclosure. Adapted from Stattin & Kerr's (2000) parental knowledge assessments, questions assessed children's disclosure to parents without solicitation about their daily activities and whereabouts, similar to several other measures traditionally used to assess parental monitoring. Similar to other studies using this measure, the scale showed high internal consistency (Cronbach's $\alpha = .89$). Each item (e.g., "I tell my parents what's on my mind without being asked.") was assessed using a five-point scale ranging from "YES!" (strong agreement) to "NO!" (strong disagreement).

Concealment. Larson and Chastain's (1990) Self-Concealment Scale (SCS) assesses the concealment of specific secrets (e.g., "I have an important secret that I haven't shared with anyone"), and general tendencies to conceal negative information (e.g., "When something bad happens to me, I tend to keep it to myself"). The scale had high internal consistency (Cronbach's $\alpha = .88$).

Measures Completed by Mother

Child Behavior Checklist (CBCL). The CBCL (Achenbach, 1991) assess internalizing and externalizing symptoms of children. Mothers responded to a series of items corresponding to various facets of child problem behavior. Mothers used a three-point response scale, ranging from 0 (*Not true*) to 2 (*Very true or often true*). Items include "argues a lot" and "complains of loneliness". Cronbach's alpha for each subscale were as follows: withdrawal = .73, somatic = .69, anxiety = .83, delinquency = .53 and aggression = .78. The reliability for delinquency was low due to the low variability among the items (e.g. runs away from home, sets fires, steals outside the home). Six items had zero variance and were removed from analysis.

Parenting Dimensions. The Parenting Dimensions Inventory (PDI) is a self-report measure of parenting (Power, 2003). For the purposes of this study, the nurturance and control

subscales of the PDI will be analyzed. Cronbach's *alpha* for each scale were .72 for nurturance and .36 for control. The control measure included of five items; each item consisted of two statements and parents were asked to pick the one they agreed with most (e.g., "Children need more freedom to make up their own minds about things than they seem to get today" versus "Children need more guidance from their parents than they seem to get today."). The alpha coefficient for parental control was low in this study, but was similar to alphas reported by Power across four samples (alpha = .57) that were demographically similar to this study's sample. However, despite its low reliability, it was used for the present study because it has been shown to effectively differentiate between authoritative and permissive parenting styles (Power, 2002).

Disclosure. Mothers reported on levels of disclosure using measures developed by Crouter et al. (2005) assessing sources of parental knowledge. In this study, the disclosure scale had high internal consistency (Cronbach's *alpha*= .89). The disclosure subscale asked mothers nine general questions (e.g. "How do you usually learn about what your child's homework assignments are?"). For each question, using a 5-point scale ranging from 1 (almost never) to 5 (almost always), mothers indicated how often "My child usually volunteers information about this". Sample items concerned grades, free-time activities, trouble at school.

Measures Completed by Both Child and Mother

Parental Knowledge. Adapted from Stattin and Kerr's (2000) parental knowledge assessments, questions assessed children's perceptions of how much their parents know about their daily activities and whereabouts, similar to several other measures traditionally used to assess parental monitoring. Each item (e.g., "my parents know where I go with my friends") was assessed using a five-point scale ranging from "YES!" (strong agreement) to "NO!" (strong

disagreement). Mother reports of knowledge were assessed similarly (e.g., After school, I ask him/her about how the school day went, I know what he/she does in their free time). Mother and child scales showed high internal consistency (Cronbach's *alpha* = .90 for mothers, .85 for children).

Secrecy. Also adapted from Stattin and Kerr's (2000) parental knowledge assessments, questions assessed children's secrets kept from parents. Each item was specific to one domain of secrecy: school, free time, friends, general secrecy, and media usage. Mother and child scales showed high internal consistency (Cronbach's *alpha* = .90 for mothers, .85 for children). Each item (e.g., "Sometimes I decide not to tell my parents about what I do at school") was assessed using a five-point scale ranging from "YES!" (strong agreement) to "NO!" (strong disagreement). Mother reports of knowledge were assessed similarly (e.g., "Sometimes my child decides not to tell me what happens at school").

Procedure

Families were recruited from a sample of participants in a longitudinal school-based study on parental knowledge and school attachment. As part of the active parental consent process for the school-based study, parents were invited to give their contact information if they were interested in the family study. Consenting families were contacted via phone concerning the present study and allowed the opportunity to accept or decline further participation. For participation in the study, families were given \$50 for each child participant. Pre-posted return envelopes were provided to families and vouchers for incentives were sent upon receipt of completed surveys. Additional participants were recruited from original consenting families. Sixty three families were contacted to participate in the study. Due to wrong numbers or families moving, a total 52 families (83%) were reached and sent surveys. Forty-three (83%) completed

surveys were returned. All families that were reached after providing information agreed to participate in the study.

Surveys were mailed to their homes where each family member had a secured envelope to ensure privacy. Parents were informed about the purpose of the study, benefits and risks, confidentiality procedures and were provided contact information for any questions or concerns. Parents also provided an assent form for their participation and consent for their child. Children filled out an additional assent form to participate in the study.

Individual instructions were given to each family member inside their survey packet. Family members were instructed to find a quiet place to work independently. Parents were encouraged to help their children with reading or word definition issues, but otherwise instructed to work separately. Parents with more than one child participating in the study were given a separate survey for each child. All participants were instructed to think over the last year when answering questions and were permitted to skip any questions that made them uncomfortable. After participants completed their own survey, they were instructed to seal it back into their secure envelopes and return.

Plan of Analysis

Because the nature of this study was exploratory, correlational analyses of all variables were assessed, including disclosure and secrecy (Hypothesis 2). Hypothesis 1a was analyzed using a between-samples *t*-test and descriptive statistics. An ANOVA was used to examine domain specific secrecy differences by grade (H1b) and gender (H1c). Next, Linear Regression Models were used to assess the predictive power of disclosure and secrecy to parental knowledge and child adjustment (H3) and to examine nurturance and control as predictors for secrecy and disclosure (H4). For Hypothesis 3, child reported secrecy, concealment, disclosure, grade and

gender were entered into the model to predict parental knowledge. Mother reports of secrecy and disclosure were entered into a separate model to predict parental knowledge. Mother and child models were run separately to predict mother reports of knowledge and child reported of parental knowledge to examine cross-reporter associations. The model for Hypothesis 4 analyzed mother reports of nurturance and control to predict child reports of secrecy, disclosure and concealment, and mother reports of secrecy and disclosure.

CHAPTER FOUR

RESULTS

Descriptive Analyses: Gender and Age Differences

Between-samples t-test and correlational analysis for Hypothesis 1a showed that secrecy in all domains was present to varying degrees in this middle childhood sample. Comparison among the means show that only secrets about media usage were significantly less common than other domains.

Hypothesis 1b examined gender differences for secrecy and disclosure and predicted that boys would show higher levels of secrecy and girls would report higher levels of disclosure. T-test results support the hypothesis; means for boys and girls on study variables appear in Table 1. According to both children's and mother's report, girls disclosed more than boys to their parents. No other gender differences were reported by mothers. Boys reported keeping more secrets about friends and free time from parents than did girls.

Hypothesis 1c hypothesized age difference in domain-specific secrecy from parents; this hypothesis was partially supported. Differences between age groups were assessed by grouping 3rd and 4th grade children and 5th and 6th grade children together and running an ANOVA. Groups were formed due to low sample sizes in each grade. Results (see Table 2) indicated grade level differences in child reports of domain-specific secrecy. Older children reported higher levels of secrecy concerning friends and general secrecy from parents. Approaching significance was an age group difference in parents' reports of general secrecy; parents tended to view older children as more secretive.

Correlations among Study Variables

Correlational analyses were run to examine the magnitude of the similarity between secrecy and disclosure, or to identify secrecy and disclosure as unique constructs (Hypothesis 2) and find additional relationships between variables. Table 3 presents the correlations for the variables assessed in this study. As expected, secrecy from parents across all domains was negatively correlated with levels of disclosure and knowledge. Child and mother reports were significantly correlated on all measures with the exception of secrets about school and secrets about media usage, although secrets about school approached significance ($p < .06$). General concealment was also negatively correlated with disclosure and knowledge, although general concealment and secrecy from parents were not significantly correlated. Child reports of disclosure were significantly correlated with child reports of knowledge and the same correlation was significant for mother reports of disclosure and knowledge. Correlations across reporters are not shown in the table, but results indicated that child reports of disclosure were not significantly correlated to mother reports of their knowledge ($r = .16, p > .05$), yet mother reports of disclosure were strongly correlated with child reports of parental knowledge ($r = .33, p < .01$). Mother reports of disclosure were also negatively correlated with child reports of secrecy ($r = -.33, p < .01$).

Secrecy and Disclosure as Predictors of Parental Knowledge and Child Adjustment

In the next set of analyses, I evaluated secrecy and disclosure as predictors of parental knowledge and child adjustment (Hypothesis 3) and nurturance and control as predictors of secrecy and disclosure (Hypothesis 4). Table 4 shows all significant linear regression models. Secrecy and disclosure were both significant predictors of parental knowledge. Mother reported secrecy was negatively associated with reports of knowledge. Child and mother reports of disclosure were positively associated with higher levels of parental knowledge. For analyses

focused on predictors of child adjustment, significant predictors emerged for child delinquency. Child reported secrecy was a positive predictor of delinquency. Mothers' reports of parental knowledge approached significance as a negative predictor of delinquency. In addition to delinquency, child depression also emerged as a significant adjustment outcome. Contrary to predictions, higher levels of child-reported secrecy were associated with less depressive symptoms while mother-reported knowledge was positively associated with depressive symptoms. Parallel analyses were run for other adjustment outcomes such as withdrawal, somatic symptoms, anxiety and aggression; no parent-child communication variables emerged as significant predictors of these outcomes.

Predictors of Secrecy and Disclosure

In testing Hypothesis 4, a linear regression model was used to assess parental qualities of nurturance and control as predictors of secrecy and disclosure. Mothers reports of nurturance predicted higher levels of mother reports of disclosure ($B = .57$, $SE = .13$, $\beta = .53$, $p < .001$). Mother's nurturance and control did not significantly predict any levels of disclosure, secrecy or concealment in child reports.

CHAPTER FIVE

DISCUSSION

This study represents one of the few attempts to explore the prevalence and nature of secrecy in school-age children. Contrary to the majority of the secrecy literature, which almost exclusively has considered secrecy in adolescence, the present study explored the presence and nature of secrecy in school-age children to explore direct and indirect predictors of adolescent adjustment. First, these results demonstrate that children have the ability to keep secrets from their parents across a variety of domains, with interesting variations by gender and age. Second, the study elaborated on previous research on disclosure (Kerr and Stattin, 2000; Stattin and Kerr, 2000) by examining distinctions between disclosure and secrecy and by dissecting the unique influences of disclosure and secrecy on parental knowledge. The second goal of distinguishing secrecy and disclosure added a younger sample to the literature that has already found these as unique constructs in adolescence (Finkenauer et al., 2002; Frijns et al., 2005).

The hypothetical model presented in Chapter 2 (Figure 1) was a graphical representation of the proposed study. Within the model, secrecy, disclosure and concealment have effects on child adjustment in two ways. Directly, children are actively managing their own information and their decision to keep secrets and disclose are directly associated with their own adjustment behaviors and feelings. The model does not test for directionality. Secondly, secrecy, disclosure and concealment affect adjustment through differing levels of parental knowledge. As we know from previous research mentioned in this study, high levels of parental knowledge predict better adjustment. Figure 2 represents the hypothetical model with results for mother and child reports. Child secrecy, and to a lesser extent parental knowledge, were related to child adjustment. The findings suggest that child-reported concealment and secrecy from parents show more direct

associated with adjustment. Parent reports did not show direct effects of secrecy and disclosure on adjustment, but showed more significant indirect pathways through their reports of knowledge. This finding is related to work by Bumpus and Hill (2008) where the authors found that when children had reports of poor adjustment in Year 1, parent-child communication increased in Year 2. Therefore, if parents assume their child is secretive or having adjustment problems they may increase information solicitation or overall parent-child communication in order to gain more knowledge. These findings may help future research in looking for pathways that vary based on the nature of the reporter. Further discussion of the unique findings in the models is presented below.

Secrecy, Disclosure and Parental Knowledge

Consistent with previous research, my findings provide further evidence for the suggestion that secrecy and disclosure are, although related, independent constructs (Bumpus & Hill, 2008; Finkenauer et al., 2002; Larson & Chastain, 1990). Finkenauer and colleagues (2002) found secrecy and disclosure to be moderately related constructs, but secrecy from parents contributed to adjustment outcomes (e.g. depressive mood, emotional autonomy) above and beyond disclosure to parents. The effects of secrecy on their variables were much more powerful than those of disclosure, suggesting the unique and powerful contribution secrecy makes to assessing psychosocial development of adolescents. In this study, secrecy from parents also contributed to adjustment above and beyond disclosure to parents. Traditionally, it has been assumed that parental knowledge has drawn from monitoring and tracking of children's activities. More recently, it is understood that children's willingness to disclose and parent solicitation each contribute to parental knowledge more than any other strategy, specifically in adolescence. As predicted in this study, secrecy was negatively associated with disclosure and

parental knowledge, and children in the older age group reported keeping more secrets than the younger children. This finding contributes to the literature in linking earlier communication patterns in middle childhood to parent-child communication in adolescence.

The study also supported previous research that girls report higher levels of disclosure than boys (Crouter et al. 1999, Smetana et al., 2006) while adding that boys reported higher levels of secrecy. Previous studies on secrecy in adolescence show few or no significant sex difference in secrecy from parents (Finkenauer et al., 2002; Frijns et al., 2005). Mothers in this study also reported higher levels of disclosure for girls, but the same levels of secrecy for boys and girls. Future research may focus of overall communication patterns of boys and girls. Boys may have lower levels of overall communication, thus explaining more perceived secrecy and lower levels of disclosure. Father-son dyads may also have different levels of communication not shown in the mother reports of the sample. Future research should explore overall family systems and communication patterns to tap into gender differences of secrecy and disclosure.

Secrecy, Disclosure and Child Adjustment

Adolescent disclosure and parental knowledge have been identified as important predictors of adolescent adjustment (Kerr and Stattin, 2000; Stattin and Kerr, 2000). As expected, this study found secrecy to be negatively associated and disclosure positively associated with parental knowledge for both parent and child reports. Mother and child reports of secrecy were directly associated with higher levels of delinquency. Child reports of parental knowledge were also negatively associated with delinquency.

There are two interpretations for the association between secrecy and delinquency: youth-driven processes and parent-driven processes. Laird, Pettit, Bates and Dodge (2003) illustrate the parent-driven process as one where increases in parental knowledge may be linked to decreases

of delinquent behavior because adolescents decrease delinquent activity in the presence of parental actions (i.e. more solicitation, active surveillance). The child-driven process may account for decreases in parental knowledge that follow antisocial and delinquent activity. As adolescents become more delinquent, they actively undermine parental attempts to gain knowledge. Adolescents involved in more delinquent activity will subsequently provide less or false information to parents. It is also likely that the relationship between secrecy and delinquency is reciprocal in nature. In an example given by Laird and colleagues (2003), adolescents' involvement in delinquent behavior may lead to more negative interactions with parents. In order to avoid negative actions with their children, parents may decrease supervision or solicitation efforts. This relationship is complex and reiterates the need for future research to examine longitudinal processes through which parents' knowledge and delinquent behaviors influence one another over time.

Depression also emerged as a significant outcome of child reported secrecy. Contrary to predictions, higher levels of child-reported secrecy were associated with less depressive symptoms, and mothers who reported higher levels of knowledge had children that displayed more depressive symptoms. Post hoc analyses showed that this association could be the product of a suppression effect, whereby secrecy only became a significant predictor of depression when disclosure was included in the model. Secrecy and depression were not significantly correlated at the bivariate level, but due to the high correlation between secrecy and disclosure, secrecy emerged as a significant predictor of depression when disclosure was also included in the model. Another possibility for these findings is a floor effect. The depression scale ranged from zero to two, two representing higher depression. The mean score for children was .24 and the maximum mean score reported was less than 1. Example items scored as one include "I feel like crying

many days”, “Many bad things happen to me” and “I am not sure that anybody loves me”. These examples, although the moderate options in the scale, still show some levels of depressive symptoms that are not apparent in this sample. Given the demographics of the samples, the children are considered highly functioning and do not show even moderate levels of depression. Accordingly, the mean for the sample was too low to convincingly assess depressive symptoms the sample.

Previous research with adolescents has shown that secrecy is associated with a variety of psychological and physical outcomes, including low self-esteem, depressive mood, aggression, and delinquency (Finkenauer et al., 2002; Frijns et al., 2005). The predominant pattern of non-significant associations reported for adjustment outcomes in the study may be due to the younger age group. Bumpus and Hill (2008) used teacher assessments of school-age children’s behavior and found secrecy to be associated with low social competency, more oppositional behavior, and more overtly aggressive behavior over time. This discrepancy implies that parents may not be able to accurately report on child behaviors outside the home or at school. It may be informative to use teacher reports in middle childhood because when compared to adolescents, children in middle childhood generally engage in fewer instances of delinquency. This is especially true considering that the delinquency literature for adolescents is focused on behaviors such as alcohol use, vandalism and substance use. These adolescent delinquency behaviors frequently happen during unsupervised time outside of home or school. School-aged children have less time outside of the supervision of parents or teachers; therefore, utilizing data from teachers may allow for consideration of an expanded range of problematic behaviors.

This difference between middle childhood and adolescence also helps explain why I found no significant findings with other adjustment outcomes. The CBCL has been shown a

reliable measure for outcomes in middle childhood. The lack of significant findings found in this sample could be the results of the high-functioning and homogenous samples. Future researchers should continue to use the CBCL, but on a more diverse and high-risk samples.

Parents of Secretive Children

The study attempted to find parenting behaviors that predict child secrecy and disclosure. Other researchers have suggested that secrecy may be the result of bad relationships with their parents (Finkenauer et al., 2002) or parenting behaviors (Smetana et al., 2006). The findings in this study found parental nurturance predictive of higher disclosure, but found no significant predictors of secrecy. Smetana and colleagues (2006) found that greater psychological control was associated with more disclosure and less secrecy about personal and peer issues. This may be the case because children who feel high amounts of psychological control may feel more obligated to disclose more information. Smetana's measures of psychological control were parent-reported: child reports may more accurately predict their disclosure and secrecy. Further investigation of parenting behaviors may need to include more psychological measures of control or measures specific to family communication patterns.

Limitations and Strengths

A number of limitations are important to address when assessing the implications of the study. One shortcoming is the relatively small sample size. The sample size limited the number of variables used to predict more secretive children or find stronger associations with adjustment outcomes. Correspondingly, the study was unable to assess other family characteristics such as SES or race/ethnicity because of the lack of diversity within the sample. The literature could also be greatly enriched with the inclusion of fathers, but the low sample size prohibited this study from analyzing father reports.

Another limitation of my study concerns the concealment and parental dimensions measures. The concealment measure assessed general concealment of information from friends and peers. The measurement also had many questions about deciding to tell or not to tell their secrets. Child reports of concealment were negatively correlated with disclosure and parental knowledge, but had no significant correlations with secrecy from parents, suggesting that general concealment may measure more psychological issues of secrecy or the measure may be difficult for younger children to understand. Further adaptations of measuring secrecy in middle-childhood are needed and future research should work on teasing apart differences in secrets from parents and secrets kept from everyone. I would recommend future researchers to examine the domains of secrecy that effect particular outcomes, and adapt the concealment measure to find how general thoughts of concealment can relate to specific domains of secrecy.

The parenting dimensions used in this study assessed nurturance and control. As previously mentioned, the control variables were broad assessment of parental views and do not specifically assess controlling behaviors of parents. Measures tapping into both psychological and behavioral control attributes might yield different results for predicting secrecy in middle childhood.

Several strengths are notable as well. First, the study uses a multi-informant design to look at mother and child reports of disclosure and secrecy. This design allowed the study to assess similarities in parent child reports and to examine whether parents are aware of child secrecy. Parent reports of secrecy in future studies could help determine how their parenting may change if they describe their child as secretive. Parent reports are also interesting considering parents viewed girls and boys equally secretive, although boys reported more secrecy themselves. Additionally, the study targets school-aged children: a population that is

understudied in the literature concerning secrecy, disclosure and parental knowledge. This study contributes to a body of literature focused on finding the outcomes of secrecy in adolescence as well as predictors in middle childhood.

REFERENCES

- Achenbach, T. M., (1991). *Manual for the Child Behavior Checklist/4–18 and 1991 Profile*. Burlington: University of Vermont, Department of Psychiatry.
- Aunola, K., Stattin, H., & Nurmi, J. (2000). Parenting styles and adolescents' achievement strategies. *Journal of Adolescence*, 23, 205-222.
- Baumrind, D. (1991). The influence of parenting style on adolescent competence and substance use. *Journal of Early Adolescence*, 11(1), 56-95.
- Belsky, J., & Cassidy, J. (1994). Attachment: Theory and evidence. In M. Rutter & D. Hay (Eds.), *Development through life* (pp.373-402). Oxford: Blackwell.
- Blos, P. (1979). *The adolescent passage*. New York: International Universities Press.
- Brooks-Gunn, J., & Reiter, E. O. (1990). The role of pubertal processes. In S. S. Feldman and G. R. Elliott (Eds.), *At the threshold: The developing adolescent* (pp. 16-53). Cambridge, MA: Harvard University.
- Brown, B. B. (1990). Peer groups and peer cultures. In S. S. Feldman and G. R. Elliott (Eds.), *At the threshold: The developing adolescent* (pp. 171-196). Cambridge, MA: Harvard University.
- Brown, B. B., Mounts, N., Lamborn, S. D., & Steinberg, L. (1993). Parenting practices and peer group affiliation in adolescence. *Child Development*, 64(2), 467-482.
- Bumpus, M. F., & Hill, L. G. (2008). Secrecy and parent-child communication during middle childhood: Associations with parental knowledge and child adjustment. *Parenting*, 8(2), 93-116.

- Chen, Z., & Dornbusch, S. M. (1998). Relating aspects of adolescent emotional autonomy to academic achievement and deviant behavior. *Journal of Adolescent Research, 13*, 293-319.
- Collins, W. A., & Van Dulman, M. (2006). "The course of true love(s) . . .": Origins and pathways in the development of romantic relationships. In A. Crouter & A. Booth (Eds.), *Romance and sex in emerging adulthood: Risks and opportunities* (pp. 63–86). Mahwah, NJ: Lawrence Erlbaum Associates.
- Crouter, A. C., Bumpus, M. F., Davis, K. D., & McHale, S. M. (2005). How do parents learn about adolescents' experiences? Implications for parental knowledge and adolescent risky behavior. *Child Development, 76*(4), 869-882.
- Crouter, A. C., MacDermid, S. M., McHale, S. M., & Perry-Jenkins, M. (1990). Parental monitoring and perceptions of children's school performance and conduct in dual- and single-earner families. *Developmental Psychology, 26*, 649-657.
- Cumsille, P., Darling, N., Flaherty, B. P., & Martinez, M. L. (2006). Chilean adolescents' beliefs about the legitimacy of parental authority: Individual and age-related differences. *International Journal of Behavioral Development, 30*(2), 97-106.
- Darling, N., Cumsille, P., Caldwell, L. L., & Dowdy, B. (2006). Predictors of adolescents' disclosure to parents and perceived parental knowledge: Between- and within-person differences. *Journal of Youth and Adolescence, 35*(4), 667-678.
- Dishion, T. J., & Andrews, D. W. (1995). Preventing escalation in problem behaviors with high-risk young adolescents: Immediate and 1-year-outcomes. *Journal of Consulting and Clinical Psychology, 63*(4), 538-548.

- Dishion, T. J., & Loeber, R. (1985) Adolescent marijuana and alcohol use: The role of parents and peers revisited. *American Journal of Drug and Alcohol Abuse, 11*, 11-25.
- Dishion, T. J., & McMahon, R. J. (1998). Parental monitoring and the prevention of child and adolescent problem behavior: A conceptual and empirical formulation. *Clinical Child and Family Psychology Review, 1*(1), 61-75.
- Dishion, T. J., Capaldi, D., Spracklen, K. M., & Li, F. (1995). Peer ecology of male adolescent drug use: Developmental processes in peer relations and psychopathology [Special issue]. *Development and Psychopathology, 7*, 803-824.
- Dishion, T. J., Reid, J. B., & Patterson, G. R. (1988). Empirical guidelines for a family intervention for adolescent drug use. *Journal of Chemical Dependency Treatment, 1*, 189-222.
- Finkenauer, C., Engels, R. C. M. E., & Meeus, W. (2002). Keeping secrets from parents: advantages and disadvantages of secrecy in adolescence. *Journal of Youth and Adolescence, 31*(2), 123-136.
- Finkenauer, C., Frijns, T., Engels, R. C. M. E., & Kerkhof, P. (2005). Perceiving concealment in relationships between parents and adolescents: Links with parental behavior. *Personal Relationships, 12*, 387-406.
- Fletcher, A. C., Darling, N., & Steinberg, L. (1995) Parental monitoring and peer influences on adolescent substance use. In J. McCord (Ed.), *Coercion and Punishment in Long-Term Perspectives* (pp. 259-271). Cambridge, MA: Cambridge University Press.
- Fletcher, A. C., Steinberg, L., & Williams-Wheeler, M. (2004). Parental influences on adolescent problem behavior: Revisiting Stattin and Kerr. *Child Development, (75)*3, 781-796.

- Freud, S. (1961). The ego and the id. In J. Strachey (Ed. and Trans.), *The standard edition of the complete psychological works of Sigmund Freud* (Vol. 19, pp. 3-66). London: Hogarth Press. Original work published 1923)
- Frijns, T., Finkenauer, C., Vermulst, A. A., & Engels, R. C. M. E. (2005) Keeping secrets from parents: Longitudinal associations of secrecy in adolescence. *Journal of Youth and Adolescence*, 34(2), 134-148.
- Furman, W., & Buhrmester, D. (1992). Age and sex differences in perceptions of networks of personal relationships. *Child Development*, 63, 103-115.
- Harter, S., 1985. In: *The Self-Perception Profile for Children: Revision of the Perceived Competence Scale for Children*. Manual, University of Denver, Denver, CO.
- Huesmann, L. R., Eron, L. D., Lefkowitz, M. M., & Walker, L. O. (1984). Stability of aggression over time and generations. *Developmental Psychology*, 20, 1120-1134.
- Jimerson, S., Egeland, B., Sroufe, L. A., & Carlson, B. (2000). A prospective longitudinal study of high school dropouts examining multiple predictors across development. *Journal of School Psychology*, 38(6), 525-549.
- Kerns, K. A., Aspelmeier, J. E., Gentzler, A. L., & Grabill, C. M. (2001). Parent-child attachment and monitoring in middle childhood. *Journal of Family Psychology*, 15(1), 69-81.
- Kerr, M. & Stattin, H. (2000). What parents know, how they know it, and several forms of adolescent adjustment: Further support for reinterpretation of monitoring. *Developmental Psychology*, 36, 366-380.
- Kovacs, M., (1992). *Children's depression inventory (Manual)*. New York: Multi-Health Systems.

- Laird, R.D., Pettit, G.S., Bates, J.E., & Dodge, K.A. (2003). Parents' monitoring-relevant knowledge and adolescents' delinquent behavior: Evidence of correlated developmental changes and reciprocal influences. *Child Development, 74*, 752-768.
- Lamborn, S.D., & Steinberg, L. (1993). Emotional autonomy redux: Revisiting Ryan and Lynch. *Child Development, 64*, 483-499.
- Larson, D. G. & Chastain, R. L., (1990). Self-concealment: Conceptualization, measurement, and health implications. *Journal of Social and Clinical Psychology, 9*, 439-455.
- Larson, R. W., Richards, M. H., Moneta, G., Holmbeck, G., & Duckett, E. (1996). Changes in adolescents daily interactions with their families from ages 10 to 18: Disengagement and transformation. *Developmental Psychology, 32*(4), 744-754.
- Marshall, S. K., Tilton-Weaver, L. C., & Bosdet, L. (2005). Information management: Considering adolescents' regulation of parental knowledge. *Journal of Adolescence, 28*, 633-647.
- Patterson, G. R., & Stouthamer-Loeber, M. (1984). The correlation of family management practice and delinquency. *Child Development, 55*, 1299-1307.
- Peskin, J. (1992). Ruse and representations: On children's ability to conceal information. *Developmental Psychology, 28*, 84-89.
- Piaget, J. (1965). *The moral judgment of the child*. New York: Free Press. (Originally published 1932).
- Power, T. G., Olvera, N., & Hays, J. (2002). Maternal socialization of safety practices among Mexican-American children. *Journal of Applied Developmental Psychology, 23*, 83-97.
- Power, T. G. (2003). *Parenting Dimensions Inventory (PDI): A research manual*. Unpublished manuscript, Washington State University.

- Rosenberg, M. (1986). Self-concept from middle childhood through adolescence. In J. Suls & A. G. Greenwald (Eds.), *Psychological perspectives on the self* (Vol. 3, pp. 107-136). Hillsdale, NJ: Erlbaum.
- Ryan, R. M., & Lynch, J. H. (1989). Emotional autonomy versus detachment: Revisiting the vicissitudes of adolescence and young adulthood. *Child Development*, *60*, 340-356.
- Smetana, J. G. (1988). Adolescents' and parents' conceptions of parental authority. *Child Development*, *59*, 321-335.
- Smetana, J. G., Metzger, A., Gettman, D. C., & Campione-Barr, N. (2006). Disclosure and secrecy in adolescent-parent relationships. *Child Development*, *77*(1), 201-217.
- Snyder, J., & Patterson, G. (1987) Family interaction and delinquent behavior. In H. C. Quay (Ed.), *Handbook of Juvenile Delinquency*. New York: Wiley.
- Soenens, B., Vansteenkiste, M., Luyckx, K., & Goossens, L. (2006). Parenting and adolescent problem behavior: An integrated model with adolescent self-disclosure and perceived parental knowledge as intervening variables. *Developmental Psychology*, *42*(2), 305-318.
- Stattin, H., & Kerr, M. (2000). Parental Monitoring: a reinterpretation. *Child Development*, *71*(4), 1072-1085.
- Steinberg, L. (1987). Impact of puberty on family relations: Effects of pubertal status and pubertal timing. *Developmental Psychology*, *23*, 451-460.
- Steinberg, L. (1990). Autonomy, conflict, and harmony in the family relationship. In S. S. Feldman & G. R. Elliott (Eds.), *At the threshold: The developing adolescent* (pp. 255-276). Cambridge, MA: Harvard University Press.
- Steinberg, L., & Silverberg, S. B. (1986). The vicissitudes of autonomy in early adolescence. *Child Development*, *57*, 841-851.

- Steinberg, L., Lamborn, S., Dornbusch, S., & Darling, N. (1992). Impact of parenting practices on adolescent achievement: Authoritative parenting, school involvement, and encouragement to succeed. *Child Development, 63*, 1266–1281.
- Steinberg, L., Mounts, N., Lamborn, S., & Dornbusch, S. (1991). Authoritative parenting and adolescent adjustment across various ecological niches. *Journal of Research on Adolescence, 1*, 19–36.
- Tilton-Weaver, L. C., & Marshall, S. K. (2008). Adolescents' agency in information management. In M. Kerr, H. Stattin, R. C. M. E. Engels (Eds.), *What can parents do? New insights into the role of parents in adolescent problem behavior*. West Sussex, UK: Wiley.
- Waizenhofer, R. N., Buchanan, C. M., & Jackson-Newsom, J. (2004). Mothers' and fathers' knowledge of adolescents' daily activities: Its sources and its links with adolescent adjustment. *Journal of Family Psychology, 18*(2), 348-360.
- Weintraub, K. J., & Gold, M. (1991). Monitoring and delinquency. *Criminal Behavior and Mental Health, 1*, 268-281.
- Weiss, L. H., & Schwartz, J. C. (1996). The relationship between parenting types and older adolescents' personality, academic achievement, adjustment, and substance use. *Child Development, 67*(5), 2101-2114.

Figure 1 Hypothetical Model: Direct and Indirect Effects of Secrecy

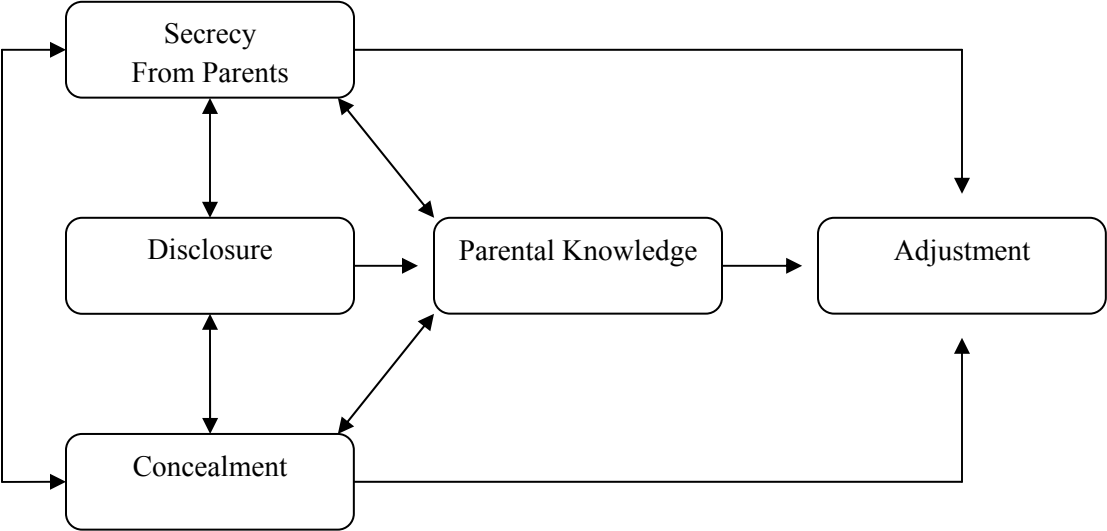
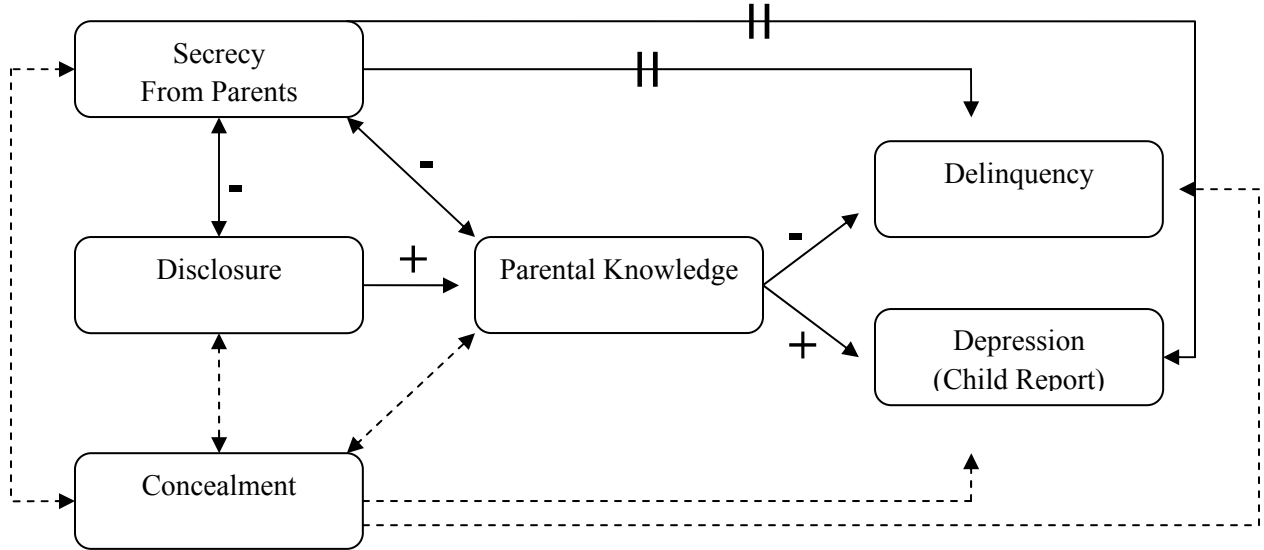
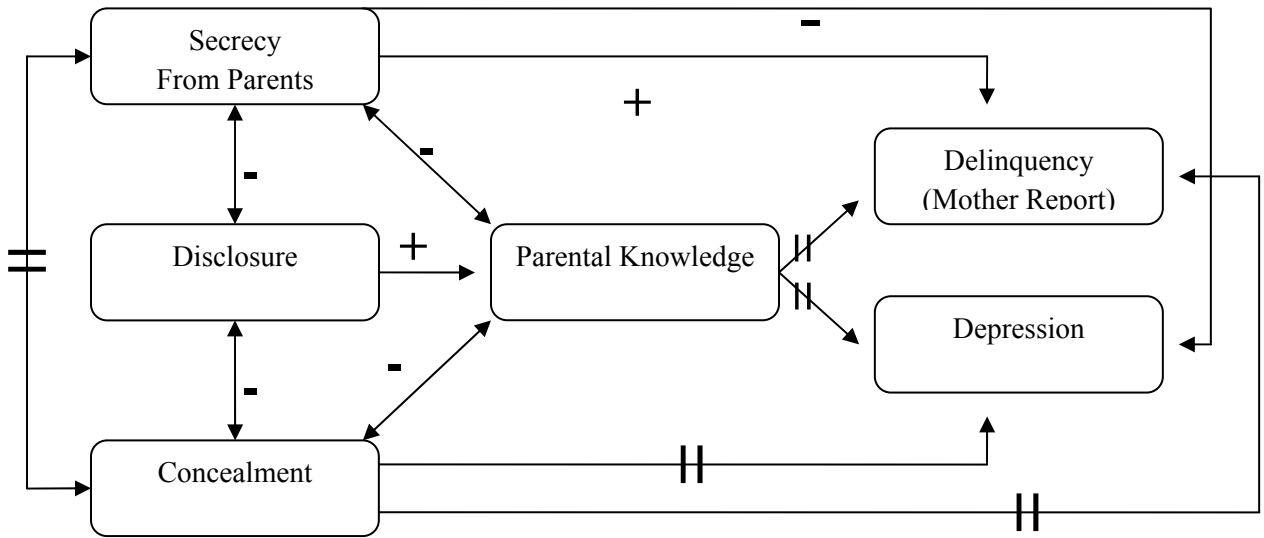


Figure 2 Results of Hypothetical Model

Mother Report



Child Report



Key:
 ____ Significant Association
 -//- Non-significant Association
 - - - Relationship was not assessed in this model

Table 1

Gender Differences: Means and Standard Deviations (N = 58)

	Girls		Boys		<i>t</i>
	M	SD	M	SD	
Child Reports					
School domain secrets	2.67	1.18	3.10	1.30	1.32
Friends domain secrets	2.30	1.03	2.97	1.40	2.04*
Free-time domain secrets	2.19	1.08	3.03	1.25	2.74**
General domain secrets	2.50	1.07	2.90	1.52	1.14
Media domain secrets	1.73	.72	2.10	1.30	1.29
Disclosure	3.75	.80	2.93	1.13	-3.19**
Secrecy	2.33	.90	2.82	.99	1.99+
Concealment	2.31	.90	2.41	.82	.47
Mother Reports					
School domain secrets	2.75	1.12	2.86	.92	-.42
Friends domain secrets	2.68	1.06	2.66	.94	-.09
Free-time domain secrets	2.54	.96	2.72	.92	.76
General domain secrets	2.68	1.09	2.67	.88	-.05
Media domain secrets	2.07	1.05	2.1	.80	.12
Disclosure	4.27	.73	3.86	.59	-2.71*
Secrecy	2.54	.92	2.59	.75	.20

+*p* < .06 **p* < .05. ***p* < .01. ****p* < .001

Table 2

Age Differences: Means and Standard Deviations (N = 58)

	3 rd /4 th Graders		5 th /6 th Graders		<i>t</i>
	M	SD	M	SD	
Child Reports					
School domain secrets	2.84	1.27	2.96	1.24	-.35
Friends domain secrets	2.34	1.26	3.04	1.20	-2.12*
Free-time domain secrets	2.59	1.31	2.68	1.14	-.260
General domain secrets	2.35	1.40	3.12	1.10	-2.24*
Media domain secrets	1.74	.93	2.16	1.21	-1.46
Disclosure	3.33	1.04	3.34	1.09	-.39
Secrecy	2.38	.95	2.83	.93	-1.82+
Concealment	2.35	.91	2.37	.78	-.07
Mother Reports					
School domain secrets	2.81	.97	2.80	1.08	.05
Friends domain secrets	2.63	.98	2.72	1.02	-.36
Free-time domain secrets	2.66	.94	2.60	.96	.22
General domain secrets	2.47	.95	2.92	.98	-1.79+
Media domain secrets	2.00	.92	2.19	.94	-.79
Disclosure	4.29	.79	4.29	.89	.87
Secrecy	2.51	.65	2.63	.74	-.54

+*p* < .08, **p* < .05. ***p* < .01. ****p* < .001

Table 3

Correlations among Secrecy, Disclosure and Parental Knowledge (N = 58)

Variables	1	2	3	4	5	6	7	8	9
1. School domain secrets	.25 +	.66***	.73***	.44***	.18	-.35**	-.37**	.79***	-.04
2. Friends domain secrets	.87***	.31*	.78***	.56***	.34*	-.54***	.51***	.88***	.06
3. Free-time domain secrets	.85***	.91***	.36**	.45***	.35**	-.53***	-.49***	.86***	-.01
4. General domain secrets	.55***	.59***	.53***	.26*	.40**	-.29*	-.31*	.75**	-.24
5. Media domain secrets	.63***	.62***	.61***	.56**	-.33	-.20	-.32*	.57***	.04
6. Disclosure	-.54***	-.35**	-.47***	-.37**	-.45***	.44***	.58***	-.48***	-.31*
7. Knowledge	-.46***	-.33**	-.42***	-.41***	-.61***	.59***	.27*	-.49***	-.30*
8. Secrecy	.91***	.93***	.91***	.76***	.79***	-.49***	-.50***	.27*	.07
9. Concealment [†]	---	---	---	---	---	---	---	---	---

Note: Children's reports are above and parent's reports are below the diagonal. Correlations between parents' and children's reports are on the diagonal in brackets. The shaded diagonal displays correlations between parent child reports on variables. [†]

Concealment reports were only filled out by children.

+p < .06 *p < .05. **p < .01. ***p < .001.

Table 4

Summary of Regression Analyses for Variables Predicting Knowledge and Adjustment Outcomes (N = 58)

Variable	Knowledge (c)		Knowledge (m)		Depression (c)		Delinquency (m)	
	B	SE B	B	SE B	B	SE B	B	SE B
Child reports								
Secrecy	-.10	.06	-.20	.07	-.09	.03	.04	.02
Disclosure	.24	.06	.55***	.07	-.05	.04	.04	.02
Concealment	-.05	.06	-.10	.08	-.04	.03	.12	.02
Knowledge	-	-	-	-	.01	.08	-.01	.05
Grade	-.12	.05	-.30*	.06	.05	.03	-.01	.02
Gender	-.27	.12	-.29*	.15	-.05	.07	-.06	.04
R	.69		.34		.48		.37	
ΔR^2	.48***		.11		.23*		.13	

Table continued on next page.

Table 4 Continued

Summary of Regression Analyses for Variables Predicting Knowledge and Adjustment Outcomes (N = 58)

Variable	Knowledge (c)		Knowledge (m)		Depression (c)		Delinquency (m)	
	B	SE B	B	SE B	B	SE B	B	SE B
Mother Reports								
Secrecy	-.01	.08	-.01	.07	.01	.04	-.02	.02
Disclosure	.24	.10	.36*	.08	-.05	.05	-.03	.03
Knowledge	-	-	-	-	.15	.07	-.08	.04
Grade	-.12	.06	-.31*	.05	.03	.03	.01	.02
Gender	-.12	.14	-.13	.12	-.02	.06	.01	.04
R	.42		.65		.40		.40	
ΔR ²	.18*		.42***		.16		.16	

+p < .06, *p < .05, **p < .01, ***p < .001