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Father Attachment Predicts Adolescent Girls' Social and Emotional Development

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Father Attachment Predicts Adolescent Girls' Social and Emotional Development

A Dissertation

Presented to the Faculty of
Antioch University Seattle
Seattle, WA

In Partial Fulfillment
Of the Requirements of the Degree
Doctor of Psychology

By

Reena Sandhu

February 2014

Father Attachment Predicts adolescent Girls' Social and Emotional Development

This dissertation, by Reena Sandhu, has been approved by the committee members signed below who recommend that it be accepted by the faculty of the Antioch University Seattle at Seattle, WA in partial fulfillment of requirements for the degree of

DOCTOR OF PSYCHOLOGY

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February 15, 2014

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Abstract

Father Attachment Predicts Adolescent Girls' Social and Emotional Development

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The principle focus of research on parental attachment and involvement has been about mothers and their young children, with the role of fathers relatively neglected. In addition, the study of father–child relational processes during the adolescent period has been meager, compared to mother–child influences during adolescence. The few studies on father–adolescent relationships rarely focused on the father–daughter attachment bond. This research study aimed primarily to consider the nature of father attachment on the social and emotional development of adolescent girls. The variables of interest were Father Attachment, Social Problems, Social Competence, and Internalizing Behavioral Problems, as perceived by adolescent girls. The archival survey data for this study were gathered from 246 adolescent females between the ages of 14 and 16 years old who participated in Ferrari's 2008 study on "Attachment, personal resources and coping in trait-anxious adolescent girls." Results supported the proposed hypotheses, revealing statistically significant correlations among perceived quality of Father Attachment, and adolescent girls' Social Competence, Social Problems, and Internalizing Behavioral Problems. Together, Father Attachment, Social Competence and Social Problems accounted for over half of the variance (54.5%) of Internalizing Behavioral Problems. In addition, Father Attachment and Social Problems each uniquely predicted Internalizing Behavioral Problems in a standard multiple regression analysis. However, once Father

Attachment and Social Problems were accounted for, the relationship between Social Competence and Internalizing Behavioral Problems was no longer significant.

Incorporating these findings in prevention and treatment programs could prove to be crucial, particularly for programs aimed at promoting emotional well being among adolescent girls. The electronic version of this dissertation is at OhioLink ETD Center, www.ohiolink.edu/etd

Dedication

With respect and high regard, I dedicate this work to my late grandfather who paved the road for higher education. To my Girm and Sandhu parents, for supporting my dreams and instilling in me the belief that anything is possible. And to my husband, Amit, for making everything possible.

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Chapter I: Introduction

Despite the well-known influence of mother–child relational processes on adolescent adjustment and behavioral outcomes, little is known about the role that father attachment plays during adolescent-female development. Of all family relationships, the father–daughter relationship during adolescence is perhaps the least understood and least studied (Lamb, 2010). Research has primarily focused on the mother–daughter and father–son bonds during adolescence, likely because of the commonality in gender and shared social roles (Brumariu & Kerns, 2010). This lack of emphasis on the role of fathers with daughters is unfortunate, given the several ways fathers influence their children’s social development. Specifically, fathers tend to encourage their children to be competitive and independent by spending time in playful and physically stimulating interactions, which is empirically studied to be important for children’s emotional and social development (Paquette, 2004). Therefore, fathers may be particularly influential in the development of certain aspects of their children’s behaviors. Yet, there is limited research on the role of father attachment and its influence on adolescent daughters’ psychosocial development.

The limited research that does exist on father–daughter attachment during adolescence suggested an insecure attachment to fathers is correlated with an increase in adolescent-female emotional problems. Specifically, Van Eijck, Branje, Hale, and Meeus (2012) and Liu (2006) maintained that a poor-quality relationship to mothers and to fathers, independently, is associated with increased anxiety and depressive symptoms in adolescent girls; the researchers indicated that girls are more prone than boys to internalize their reactions. Brumariu and Kerns (2010) conducted an empirical review of

findings on parent–adolescent attachment and internalized symptoms and found that father and mother attachment have a comparable impact on adolescent girls’ internalizing behaviors, although their research found considerably few studies on father–adolescent attachment, especially with adolescent girls. Brumariu and Kerns affirmed that the role of fathers in the development of internalizing symptoms has been neglected, as most studies have focused only on attachment to mothers. Overall, the association between father attachment and emotional problems in adolescent girls is not well understood; however, there is some indication that the quality of father attachment does affect adolescent girls’ emotional development.

No studies to date have examined the relationship between social competence or social problems in adolescent girls in relation to the quality of father attachment. This is surprising because father attachment is strongly linked to social development in childhood. In addition, adolescent girls are empirically found to value social membership and highly identify with their peer groups, compared to boys (Kiesner, Cadinu, Poulin, & Bucci, 2002). Specifically, adolescent girls’ friendships tend to focus on issues of intimacy, love, and communion, whereas boys’ friendships more often focus on agency, power, and excitement (Rose, 2002). Due to greater intimacy, female relationships are more fragile and prone to disruption through the divulging of confidential information (Newman, Lohman, & Newman, 2007). Adolescent girls tend to use ruminative coping more than boys, a style that involves persevering in unpleasant situations and the negative feelings associated with problems (Benenson & Christakos, 2003). Girls also engage more in corumination, making them more vulnerable to the distress of their friends (Rose, 2002). Thus, although boys may not benefit as much as girls from feelings of belonging

that are a product of close, enduring friendships, boys are also less vulnerable to the social and emotional distress that is likely to accompany high levels of disclosure and corumination (Newman et al., 2007).

Girls' greater concerns about social evaluation, approval, and investment in connection-orientated goals were proposed by some researchers to contribute to emotional problems, such as anxiety and depression (Rudolph & Rose, 2006). Girls tend to be more likely than boys to devote time to worrying about the status of their relationships, which negatively influences their emotional well-being. These predictive pathways are consistent with evidence linking some aspects of social styles, including fears of negative evaluation and friendship jealousy, with internalizing symptoms in adolescent girls (Newman et al., 2007). Despite these emotional costs, some researchers found that female social styles protect girls against developing externalizing behavioral problems. Such behavioral problems are found to be inconsistent with girls' greater concern to define themselves according to close relationships, which may motivate girls to minimize externalizing behaviors that elicit interpersonal rejection (Rudolph & Conley, 2005).

Taken together, it is unclear if the quality of father attachment impacts adolescent girls' social and emotional development. The purpose of this correlational study was to use archived data to examine father attachment, social problems, and social competence in adolescent girls who endorse internalizing behavioral problems. It is important to study this association to possibly prevent emotional and social problems from occurring and to promote intervention plans that encourage healthy development. If significant research findings emerge, results of this research may encourage fathers to increase their parental

involvement in clinical interventions, as fathers are typically significantly less involved in interventions for their adolescents than are mothers (Phares, Rojas, Thurston, & Hankinson, 2010). Specifically, fathers may be influenced to participate in intake sessions, father–daughter therapy sessions, and clinical interventions and treatment plans. This study may also benefit divorced fathers, as most fathers are now receiving shared parenting time. In 2003, 44% of court-contested divorces resulted in shared parenting arrangements, up from 21% in 1995 (Statistics Canada, 2008). Thus, the findings of this research may encourage divorced fathers to strengthen and foster their bond with their adolescent daughters in an effort to protect against psychosocial problems. Furthermore, this study may influence clinicians to implement therapeutic interventions that enhance interpersonal skills for adolescent girls. Overall, it is expected that this study will contribute to a better understanding of relationships between the quality of father attachment and adolescent girls with emotional and social problems.

Research Questions

1. Is there a relationship between the perceived quality of father attachment and adolescent girls' social competence, social problems, or internalizing behavioral problems?
2. How well can perceived quality of father attachment, adolescent girls' social problems, and social competence uniquely predict internalizing behavioral problems among adolescent girls?

Hypothesis

1. Null hypothesis: There are no significant correlations among the perceived quality of father attachment and adolescent girls' social competence, social problems, and internalizing behavioral problems.
2. Research Hypothesis 1: The perceived quality of father attachment and social problems will each uniquely predict internalizing behavioral problems in adolescent girls.
3. Research Hypothesis 2: Social competence will protect against internalizing behavioral problems in adolescent girls.

Operational Definitions

Adolescence: Adolescence is a period that is biologically and socially formative at the onset in childhood, terminating in adulthood with cultural expectations and responsibilities (Adelson, 1980). For the purpose of this study, adolescence is marked by the onset of menses and ends at graduation from high school (Newman et al., 2007). The age range is from 14 to 17 years.

Attachment: Attachment is an enduring affectional bond of substantial intensity (Bowlby, 1969). The central concern of attachment theory is the implication of optimal and nonoptimal social attachments for psychological well-being (Ainsworth, Blehar, Waters, & Wall, 1978). Bowlby's theoretical work (1969, 1973, 1982, 1988) conceptualized the formation of attachment in infancy, and explained the emotional and psychological disturbances that may result at any age from their actual or threatened disruption.

Attachment behavioral system: An organized pattern of behavior that ensures sufficient proximity to primary caregivers to promote an infant's survival (Bowlby, 1969). The behavioral system develops and maintains affectional bonds, which are seen to persist throughout life.

Externalized behavior problems: Externalizing behavioral problems refers to a grouping of behavior problems that are manifested in children's outward behavior and reflect the child negatively acting on the external environment (Campbell, Shaw, & Gilliom, 2000). Sometimes described as "acting-out" behavior, in the research literature, these externalizing behavioral problems consist of dysregulation in behavior, conflicts with other people, and expectations for an adolescent's behavior (Achenbach, 1993). Externalized behavioral problems are one grouping in the measurement tool, the Youth Self-Report (YSR) (Achenbach & Rescorla, 2001). The scale consists of two syndromes: rule-breaking behavior and aggressive behavior. A *T*-score on the YSR indicates how elevated a child's total externalizing scores are. A *T*-score below 60 indicates normal range.

Father alienation: The Father Alienation scale on the Inventory of Parent and Peer Attachment-Revised (IPPA-R) (Armsden & Greenberg, 1989) assesses adolescents' feelings of anger and interpersonal alienation toward their fathers. Possible raw scores on this scale range from 40 to 8, with higher scores indicating increased father alienation.

Father attachment: The Father Attachment subscale measures an adolescent's perceptions of security in their relationship with their father on the IPPA-R (Armsden & Greenberg, 1989). Possible raw scores of this scale range from 125 to 25, with higher

scores indicating increased father attachment. This subscale is measured separately from the Mother Attachment subscale.

Father communication: The Communication scale on the IPPA-R (Armsden & Greenberg, 1989) assesses the extent and quality of adolescents' spoken communication with parents and peers. Possible raw scores range from 50 to 10, with higher scores indicating higher quality of communication with fathers.

Father trust: The Father Trust scale on the IPPA-R (Armsden & Greenberg, 1989) measures the degree of mutual understanding and respect in the attachment relationship. Possible raw scores on this scale range from 50 to 10, with higher scores indicating increased father trust.

Insecure attachment: Low scores on the Father-Attachment scale or Peer-Attachment scale of the IPPA-R (Armsden & Greenberg, 1989) demonstrate an insecure-attachment pattern and show that an adolescent girl's internal working model is perceived as distant or distrustful of her father or peers.

Internal working model: The internal working model is used to describe the attachment system as a long-lasting emotional bond of substantial intensity between infant and caregiver (Bowlby, 1969). These bonds support the development and maintenance of mental models of the self and others throughout life, as well as help an individual predict and understand their environment, and keep them in proximity to one or more people (Bowlby, 1969). The quality of attachment between infants and parents creates the foundation for later personality development (Ainsworth, 1989). In this study, the internal working model of adolescent girls' attachment will result in either a secure or insecure attachment style, as measured by the IPPA-R (Armsden & Greenberg, 1989).

Internalized behavior problems: Internalizing behavior problems refers to inner-directed symptoms and overcontrolled behaviors (Achenbach, 1993). Internalized behavior problems is a subgroup of psychopathology that includes emotional and mood disorders (Graber & Sontag, 2009). Internalized behavioral problems are the second grouping on the YSR (Achenbach & Rescorla, 2001). The internalized behavioral scale is comprised of anxiety, depression, somatic complaints without medical causes, and withdrawal from social contracts. A *T*-score on the YSR indicates how elevated the child's total internalizing scores are. A *T*-score below 60 indicates normal range.

Secure attachment: Higher scores on the Father-Attachment scale or Peer-Attachment scale of the IPPA-R (Armsden & Greenberg, 1989) demonstrate a secure-attachment pattern and show that an adolescent girl's internal working model is perceived as caring, trusting, and emotionally satisfying in the relationship with her father or peers.

Social competence: Social Competence on the YSR (Achenbach & Rescorla, 2001) demonstrates competencies with group activities and social relationships.

Social problems: Social problems on the YSR (Achenbach & Rescorla, 2001) demonstrate problems with peer relationships such as jealousy, the feelings that others are intentionally harming oneself, and not being liked.

Chapter II: Literature Review

In this section, I review theory and research about father–daughter attachment, the influence of fathers on their children’s social competence, adolescent-female social problems, and internalizing behavioral problems. The review begins with an explanation of the attachment system, followed by a summary of research on father attachment and children’s social development. Next, I explore research on social and emotional problems in adolescent girls. Then, I explore research on father attachment in relation to adolescent girls’ internalizing behavior problems. In conclusion, I call for more research on this topic.

The Attachment System

In 1969, Bowlby introduced the topic of attachment as a basic system of behavior that is biologically rooted and species specific. Bowlby emphasized that infants are biologically predisposed to use their caregiver as a source of safety and a “secure base” while exploring the environment. In particular, Bowlby coined the term “attachment system” to describe the first relationship established between an infant and caregiver. The main purpose of the attachment system is to provide a safe environment for healthy development (Ainsworth, 1967; Bowlby, 1969). In the earliest years of life, the quality of attachment infants experience from their parents may influence the child’s future mental health. To emotionally thrive, children need close and continuous relationships with their caregivers. In this way, the attachment system serves as the foundation for healthy development.

Viewed from an evolutionary perspective, the attachment system promotes the best chance for infants to survive in their environment. Bowlby (1969, 1982) argued that,

like other mammals, when infants feel secure they explore away from their attachment figures. In contrast, when alarmed, anxious, tired, or unwell they have an urge to gain proximity by approaching, crying, or seeking contact with their primary caregiver. This proximity increases the likelihood of protection and survival. Infants become attached to their primary caregivers even if their physiological needs are not being met, which suggests that the attachment system is not entirely motivated by pleasure associations. Instead, the desire for proximity is triggered by fear (Bowlby, 1956). Because separation from an attachment figure is a greater stressor than physical danger, it is essential for survival that an infant have a responsive primary caregiver in situations of danger (Ainsworth et al., 1978; Bowlby, 1982).

Bowlby (1969) clarified that attachment behavior is organized as a control system, comparing the control system to a thermostat seeking the right temperature in a room, just as infants seek the right proximity to their caregivers. Similar to when a room gets too cold and the thermostat is activated, when separation becomes too great in distance, the attachment system becomes activated. When adequate proximity has been reached, the attachment system is terminated. However, unlike a thermostat, the attachment system is continually activated, rather than completely turned off (Bowlby, 1982). Thus, attachment behavior is comprised of a biologically controlled system that ensures healthy functioning.

Bowlby's (1969) model of attachment asserted that the attachment system is important because it provides a model for all other relationships. More importantly, this system promotes the development of an understanding of the self and others. Specifically, some infants will likely grow up to internalize their relationships with their attachment

figures; they also may make meaning and develop frames of references to understand the world around them. These frames of references are developed through repeated attachment experiences, which result in an ability to organize attachment behaviors into an “internal working model” to understand the self and others (Bowlby, 1969). Through repeated interactions with the same caregiver over time, infants may begin to anticipate what events are likely to occur next. For this reason infants tend to rely on their experiences when making decisions about how to attach to particular people in certain situations (Bowlby, 1969). For example, infants who have experienced repeated stress and danger through attachment with their primary caregivers would likely develop assumptions that all individuals are dangerous. They may also develop a belief system about themselves, believing that if they are in danger, no one will help them. From this experience, they may generalize that the world is a dangerous place. As a result, these models of the self and others are used as protective mechanisms to defend against perceived threats (Bretherton, Lambert, & Golby, 2005). If this experience is reinforced and repeated over time, the internal working models of the infant are carried forward into new relationships, where they play an active role in guiding future perceptions and behaviors.

Furthermore, an infant’s internal working model of attachment is dependent on the quality of care they receive from their caregiver. The quality of attachment relationships can be divided into two broad categories: *secure attachments* and *insecure attachments* (Ainsworth, 1972; Bowlby, 1973). These terms explain an individual’s cognitive-affective perceptions and pattern of behavioral responses with regard to the availability of the caregiver to provide comfort and safety. Generally, infants who

experience a secure attachment will explore the world, separate from their caregivers, and develop in healthy ways. In contrast, infants who develop an insecure attachment will likely have a model of attachment that does not support a sense of security. In this event, normal behavioral development may be impaired (Ainsworth, 1972). Attachment behaviors, nevertheless, are reversible if circumstances change (Bowlby, 1969; Sroufe, Egeland, Carlson, & Collins, 2005). A securely attached infant can become insecurely attached and vice versa. Based on internal working models of attachment, individuals develop either secure or insecure attachment relationships, both of which are cultivated from early experiences with caregivers.

In summary, the attachment system is described as a pattern of emotional and behavioral interactions that develop over time, especially in contexts where infants express a need for attention, comfort, support, or security (Bowlby, 1969). A caregiver's ability to perceive, interpret, and react promptly to their infants' needs and attention influences the quality of their attachment relationships (Ainsworth, 1972). Based on Bowlby's (1969) attachment theory, the relationship developed with primary caregivers is the most influential in children's lives. A secure attachment relationship fosters not only positive developmental outcomes over time, but also is likely to influence the quality of future relationships with others (Bowlby, 1988). Infants with insecure attachments, in contrast, may be unable to attain the same level of confidence and mastery over themselves and their environment as securely attached infants (Bowlby, 1988). A history of insecure attachment may affect the healthy development of an individual.

The Quality of Father Attachment on Children's Social Development

Several studies have found that father–child and mother–child attachments differ qualitatively, and thus have different consequences on their child's development. This section discusses how fathers' engage in significantly different types of interactions with their children, compared to mothers. Mothers are generally found to act as a safe haven and take on a nurturing role with their children, whereas fathers' play-based behavior emerges as a distinctive predictor of child-attachment security. In particular, father's play-based interactions are found to act as a stimulus in the relationship that encourages the social development of competition and emotional-regulation skills (Bretherton et al., 2005). Consistent findings described the intricacies of patterns in mother–child and father–child interactions.

Specifically, in Lamb's 1977 landmark study, the author compared father–child and mother–child interactions to explore the differences between the relationships. Lamb recruited 10 boys, 10 girls, and their parents from the birth records of the Yale-New Haven Hospital through an introductory letter and a follow-up telephone call. Although the sample was heterogeneous with respect to parental occupation and sex of the infants, the sample could be described as a representative sample at that time of young, intact, and stable, lower to upper middle-class families. Lamb's research assistants used naturalistic observation measures to observe attachment and affiliative behaviors in infants in their home when both parents were present. Each family was observed when their infant was 7, 8, 12, and 13 months old and the visits lasted between 1 and 2 hours. The infants were observed for a total of 153 minutes at 7 and 8 months, and 199 minutes at 12 and 13 months.

Lamb (1977) and the research team found that fathers and mothers both were able to respond to their infants' signals and that no preference for either parent was apparent from the infants. An important difference they found was that fathers tried to excite, surprise, and momentarily destabilize their children through rough play, whereas mothers tried to contain them. Lamb found this dynamic to be effective only in the context of an emotional bond between fathers and their children. As a result of mothers and fathers engaging with their infants in different ways, Lamb concluded that infants may develop different expectations and learn different behavioral patterns from each parent, and thus the two relationships may have distinct consequences on child development.

The strength of this study included good interobserver reliability, computed by recruiting an additional group of infants who were observed only for the purpose of establishing the reliability of the observers' dictation, because the use of two observers was deemed likely to disrupt the natural flow of the interaction in most families. Coefficients of intercoder reliability were computed in the same way as interobserver reliability. All coders were trained on similar transcripts until agreement was achieved on all categories that averaged .90. Once this level was achieved, coding for this study's transcript began. One threat to construct validity was that the researchers did not make the constructs explicitly operational in the study, thereby making it difficult to ascertain exactly what was intended for each construct they measured. Nonetheless, this study provided evidence to support the hypothesis that mother–infant and father–infant relationships involve different kinds of experiences for the infants.

In a similar study, Kromelow, Harding, and Touris (1990) explored the relationship between the quality of infant attachment to mothers and fathers,

independently, to understand infants' level of sociability with strangers. The study compared the ways in which attachment, sociability, and fearful behaviors were directed toward mother-present, father-present, and stranger-present situations. The researchers hypothesized that if children organize their attachments similarly in mother-present and father-present contexts, then the correlation between sociability to strangers in both mother and father contexts would increase.

The relationship between quality of attachment, sociability, and fearfulness toward the parent and stranger were analyzed using the Strange Situation procedure (Kromelow et al., 1990). Participants included 78 healthy middle- and upper-class infants from intact families. Participants were observed at 18 months of age at the first observation in the study and 21 months of age at the time of the second observation. The experimental procedure was identical to the Strange Situation in the Ainsworth et al. (1978) study. A laboratory procedure was designed to assess differences in the quality of mother–infant and father–infant attachment when a stranger was present. A 7-point rating scale was developed to understand various degrees of sociability, attachment, exploratory, and fearful responses. Particular emphasis was placed on the child's reaction to the stranger's gradual approach, and attempts at playful interaction were observed (Kromelow et al., 1990).

The researchers concluded that the infants in their study demonstrated different levels of sociability in mother-present and father-present situations. Specifically, the findings indicated that securely attached children were more sociable with the stranger in the presence of their fathers, in comparison to when they were with their mothers (Kromelow et al., 1990). The researchers found that fathers acted as catalysts for risk-

taking behavior, inciting their children to take initiative in the unfamiliar situation, explore, take chances, and be braver in the presence of the stranger. Conversely, in mother-present situations, infants were found to be more reserved with the stranger. The findings that securely attached children tended to be more sociable in the father-present context indicated a trend toward a higher arousal level for affiliative behavior and less initial fear when fathers are present. Even when children experienced feelings of fear in the study, they acted on these feelings differently in the presence of fathers and mothers. The research offers evidence that during the 2nd year the father's presence provides a social context distinct from that of the mother, and that the child's organization of behavior may differ according to that context (Kromelow et al., 1990).

Strengths of the study included the interrater reliability (94%) of coding the strange situation and the reliability for scoring the 7-point sociability scale (91%; Kromelow et al., 1990). Moreover, the researchers studied a homogenous sample of Caucasian middle- to upper-class infants from intact families, which served as a limitation to the generalization of this study. Nonetheless, data from this study supported the conclusions made in Lamb's (1977) study that mother–infant and father–infant attachments are distinct relationships, demonstrated by different types of interactions; the mechanism by which the child becomes attached to the mother is distinct from those established by the father (Kromelow et al., 1990).

Moreover, there is some indication that fathers' quality of play with their infants predicts their children's sense of worth 13 years later. Specifically, a longitudinal study of 44 families conducted by Grossman et al. (2002) compared father–child to mother–child interactions to explore which aspects of their interactions would predict later child-

attachment security. Attachment representations at 6, 10, and 16 years of age were studied in a group of 26 German boys and 23 German girls. The study examined attachment data from the Bielefeld Longitudinal Study, a study of attachment and psychosocial development of children in families with no discernible risk at the time of recruitment in 1976 and 1977.

All observations, interviews, and data collections in this study were done in the homes of the families, except the Strange Situation procedure, which was conducted in a university observation room (Grossman et al., 2002). Specifically, fathers' and mothers' play sensitivity was evaluated with the Sensitive and Challenging Integrative Play Scale with their 24-month infants and again with their 6-year-old children. Parents' internal-working models of attachment were assessed by the Adult Attachment Interview. Security of attachment was assessed in the standardized Strange Situation procedure at 12 months of age with mothers and 18 months with fathers. The Separation Anxiety Test was administered to each 6-year-old child at home. At 10 years of age, the children were given the Attachment and Current Relationship Interview and at 16 they were administered the Adult Attachment Interview. The researchers hypothesized that fathers' sensitivity and play would serve as a unique and independent predictor of children's later attachment security and representation (Grossman et al., 2002).

The researchers found that fathers' Sensitive and Challenging Integrative Play Scale scores, which were predicted by caregiving quality during the first year, were highly consistent across 4 years, and were closely linked to the fathers' own internal working model of attachment (Grossman et al., 2002). In contrast, mothers' play sensitivity at 24 months was only modestly predicted by maternal sensitivity during the

first year, and was not stable across 4 years. Furthermore, quality of attachment, as assessed by the Strange Situation, for both parents was an antecedent for children's attachment security in the Separation Anxiety Test at 6 years. In addition, fathers' play sensitivity and infant–mother quality of attachment predicted children's internal working model of attachment at 10 years, but not vice versa. Lastly, dimensions of adolescents' attachment representations were predicted by fathers' play sensitivity only (Grossman et al., 2002).

The findings of the longitudinal study established that fathers' play sensitivity seems to be as much a part of the child–father attachment system as maternal caregiving is part of the infant–mother attachment system if attachment is perceived of as a balance between the infant's attachment and exploratory behaviors (Grossman et al., 2002). The father–infant quality of attachment measures predicted the child's attachment representation at 6, but not 10 and 16 years. Yet, father's sensitivity of emotional support and challenging toddlers in play situations was found to be a strong predictor of the child's attachment representation at 10 and 16 years. In contrast, mother–infant quality of attachment, but not maternal play sensitivity, predicted the child's attachment representation at 6 and 10 years. Thus, the results confirmed the researchers' hypothesis that fathers' play sensitivity is a better predictor of the child's long-term attachment representation compared to early infant–father security of attachment. This study supported findings from Lamb (1977) and Kromelow et al. (1990) that fathers' play sensitivity is an important part of the child–father attachment system, just as maternal caregiving sensitivity is an important part of the infant–mother attachment system (Grossman et al., 2002).

There are a number strengths and limitations to this study. An apparent limitation is that the families in the study came from Germany and were recruited in the mid 1970s, when the role and task divisions for fathers and mothers were traditional (Grossman et al., 2002). Thus, the findings may not be able to be generalized to today's Canadian or U.S. population. The small sample size also serves as a limitation to this study. Two methodological issues have to be considered when interpreting the findings. First, the Strange Situation procedure was conducted at 12 months with mothers and 18 months with fathers. Second, different play materials were given to mothers and fathers, and mother-toddler play was always observed first. However, there is no theoretical indication that the nature of creative play materials would affect the associations between security of infant attachment or parental play sensitivity to the children's security of attachment. A major strength of this research is its longitudinal nature. That is, the majority of fathers recruited at the birth of their child participated continuously over 16 years. Last, direct observations of father-child and mother-child interactions were performed, in contrast to other long-term follow-up studies that relied on maternal and paternal reports only. Overall, in this sample of German children from nonrisk families, mothers' longitudinal influences seem to rest on their functioning as a safe haven and a secure base from which to explore. In contrast, fathers' influence was found in their functioning as a sensitive, supporting, and gently challenging companion during exploration (Grossman et al., 2002).

In a parallel study, Liu (2008) compared three models of attachment relationship (the hierarchy model, the integrative model, and the independent model) to theoretically understand which model of attachment best explains the relative influences of father and

mother attachment on adolescents' perceived social support, expectations in peer interaction, self-worth, and depressive symptoms. I summarize the three models here: the hierarchy model assumes that attachment to mothers would dominate the child's developmental outcomes and that maternal attachment influences all other attachment relationships, including paternal attachment; the integrative model assumes that the child integrates attachment relationships from the mother and father into one representation; and the independent model suggests that maternal and paternal attachments are independent of each other and may differently predict the child's developmental outcomes. Liu (2008) hypothesized that the hierarchy model of maternal attachment would best predict adolescents' psychological functioning and any depressive symptoms. That is, the predictive power of adolescent–mother attachment would be stronger than that of adolescent–father attachment with all developmental variables.

The researcher used five well-validated and reliable self-report instruments to test the variables on 1,289 eighth-grade students. Regression analysis indicated that, compared to maternal attachment, paternal attachment was more significant in predicting friend support, peer expectations, and self-worth for both genders (Liu, 2008). This finding suggested that maternal attachment does not have such a dominant effect on adolescents' social functioning. Therefore, the analyses did not provide strong evidence to support Liu's hypothesis that the maternal attachment in the hierarchical model was significant. Firm support for the integrative model could also not be found with use of a MANOVA. Adolescents with a secure attachment to one parent always scored between the groups with one secure and one insecure attachment, and the differences did not reach statistical significance in most of the measured variables. With regard to the independent

model, the results of regression analyses indicated that among adolescent girls, family support was better predicted by maternal attachment, whereas social expectations in peer interactions, friend support, self-worth, and depressive symptoms were better predicted by paternal attachment. Adolescent boys' friend support and depressive symptoms were also significantly better predicted by paternal attachment, although the similarities ended there (Liu, 2008).

These findings provide support for the independent model, revealing that paternal attachment and maternal attachment have differential influences on adolescent social functioning and depressive symptoms (Liu, 2008). The limitation of this study was the threat to construct validity in the form of mono-method bias. That is, the study's multiple self-report measures may have shared a common respondent bias. Participants may have responded in a socially desirable way on all self-report instruments. In contrast, the large sample size served as a significant strength of this study. Liu's findings were congruent with previous studies that indicated that paternal attachment and maternal attachment contribute to adolescents' social functioning in distinct ways. Specifically, the researchers mentioned in this review all found that attachment to fathers and mothers are equally important for adolescents' family support and depressive symptoms, but attachment to fathers is more influential in peer support, social expectations of peer interactions, and self-worth (Liu, 2008).

In summary, several developmental psychologists have found that mothers and fathers perform different roles in the socialization of their children. The data indicate that these differential roles may have an effect on children from early infancy into adolescence. Specifically, the function of the fathers' play-based behavior with their

children is thought to activate children to explore their physical and social environments (Paquette, 2004). In a high-quality activation relationship, children learn to trust their own ability to cope with threats and strangeness in physical and social environments, as fathers encourage their children to take risks while ensuring that exploration is conducted in a secure context. Developmentally, secure attachment between fathers and their children can increase exploration and autonomy during adolescence. In this way, fathers seem to play an essential role in the social growth of their children and opening their children to the outside world. These findings generally indicate that children's interactions with their fathers play a significant role in their attachment and social development.

Parental and Peer Attachment During Adolescence

Before beginning a review of adolescent attachment, it is important to outline the efforts to empirically define and measure these constructs. Attachment during adolescence is assessed quite differently from the ways attachment is measured during infancy and early childhood. Research methods during infancy and early childhood are largely observational, focusing on dyadic processes that play out between parents and their children. In contrast, attachment during adolescence is typically assessed through self-report methods that are intended to capture underlying cognitive models of relationships. Thus, by definition, attachment during adolescence is treated as an intrapsychic construct and a characteristic of the individual (McElhaney, Allen, Stephenson, & Hare, 2009).

A growing body of work has begun to compare changes in attachment from childhood to adolescence. Specifically, during infancy and childhood, proximity seeking

is considered one of the hallmarks of the attachment relationship. Under even minimal stress, infants and young children seek physical closeness to their mothers, and protest involuntary separation from them, whereas fathers' play sensitivity seems to facilitate exploratory behaviors (Bowlby, 1969). Consistent with the need for exploration, adolescents typically explore new emotional terrain with their peers and romantic partners (Allen, 2008). Beginning in early adolescence, teens begin to express a preference to physically spend less time with their parents and more time with their peers. As a result, the organization of attachment relationships in adolescence is less about interactions in the parent-child relationship and more about how the adolescent conceptualizes these relationships (McElhaney et al., 2009). Typically adolescents have increased perspective taking and reasoning skills that allow them to compare relationships with different attachment figures (Allen, 2008). As a result, development during adolescence is subject to revisions of internal working models (Allen, 2008).

In particular, the ways some adolescents interpret their attachment relationships and experiences develops notably as a result of the rapid growth in formal operational thinking, including logical and abstract-reasoning abilities (Kuhn, 2009). This development allows an adolescent to construct an integrated and generalized attitude toward attachment experiences with caregivers (McElhaney et al., 2009). That is, cognitive and emotional developmental advances allow adolescents to reflect on their attachment relationships. The increase in cognitive differentiation between self and others is also a distinctive trait gained during this period, and it allows adolescents to start to establish a more coherent view of the self separate from interactions with caregivers (McElhaney et al., 2009). This development of formal operational thinking allows an

adolescent to contemplate abstract and nonfactual possibilities, resulting in comparisons of relationships between different attachment figures (Steinberg, 2005). In addition, adolescents gain communication skills and perspective, making it possible for them to modify their attachment-related behavior with their parents to meet their changing needs (Allen, 2008). Ultimately, they reduce their reliance on their parents as attachment figures and instead negotiate their needs with their parents.

Hazan and Shaver (1994) developed a theory to organize and interpret major bodies of empirical literature to explain how attachment relationships are broadened to include peers during adolescence. The researchers conceptualized that during infancy and childhood, a parental attachment figure typically provides care and security to an infant or child who is unable to provide security and care in return. Relationships in infancy and childhood are usually developed in the context of close physical proximity. In contrast, adolescent peer relationships begin to serve similar functions and satisfy the same needs for emotional support and security. That is, attachment with peers during adolescents begins with proximity seeking that is motivated by exploratory and affiliative needs. Close proximity provides the context for fostering support-seeking behavior. Subsequently, the increased predictability of the peer's behavior and availability reduces the need for close physical contact because the adolescent incorporates the peer's behavior into their internal working model and feels secure even when the peer is not present. Hence, repeated interactions in which comfort is sought and provided may lead to reliance on the peer as a base of felt security, as opposed to proximity seeking. Once the peer has reliably proven to be responsive in times of need, the secure-base phenomenon establishes itself. Parents, nonetheless, are never completely relinquished as

attachment figures, but instead their place in the attachment hierarchy changes (Hazan & Shaver, 1994).

There is some empirical support for Hazen and Shaver's (1994) hypothesis that attachment components shift from parents to peers and that parents still fulfill the role of primary attachment figures. Specifically, Nickerson and Nagle (2005) studied the differences in fourth-, sixth-, and eighth-grade students to compare the difference in parent and peer attachment, to pinpoint the timing of the introduction of peers into the attachment hierarchy. The researchers used a cross-sectional sample consisting of 279 participants who completed two self-report measures: the Parent and Peer Scales of People in My Life and the IPPA to assess attachment to parents and peers. The researchers found that half of fourth-grade students listed one of their parents as the person with whom they were most likely to spend time; by Grade 6, 32% nominated a parent, and by Grade 8 only 11% expressed a preference for spending time with parents over peers.

The results of this study indicated that early adolescents, compared to children in late childhood, reported less trust and communication with parents, and began to turn to peers to fulfill attachment needs of proximity seeking and safe haven (Nickerson & Nagle, 2005). In particular, girls reported more trust, communication, and overall attachment to peers than boys. The researchers concluded that early adolescence might represent an important time for the emergence of sex differences in attachment, as girls demonstrate more intimacy and self-disclosure with their friends, compared to boys. In addition, the researchers did not find any significant age differences in parent alienation, suggesting that despite conflict and distance with parents, these relationships are still likely to be

maintained. Parents continue to provide the secure base from which early adolescents explore other relationships. That is, there were no age differences in the secure base function of attachment, and more than 75% of the sample identified a parent as a person who could always be counted on. In contrast, the other 25% of participants, who viewed attachment to parents as less secure, were more likely to turn to their peers for proximity-seeking, safe-haven, and secure-base functions. Taken together, the researchers concluded that although peers become more prominent in early adolescents' social networks, a secure parent attachment during this time was still found to act as a stabilizing factor (Nickerson & Nagle, 2005).

There were some limitations to this study. First, the use of a cross-sectional design did not allow the researchers to know for certain whether differences in attachment relationships were related to age differences or to some other differences in the cohorts studied (Nickerson & Nagle, 2005). Second, conducting attachment research with children in this age group was challenging because of the lack of well-validated measures. Although the IPPA and Parent and Peer Scales of People in My Life were judged to be the best instruments available, the paper and pencil measures may not be as comprehensive as conducting interviews to explore the integrated working models of attachment. Third, the separation of mother-attachment from father-attachment would have allowed for better inferences regarding individual patterns of development in attachment relationships. Future research is needed to examine relationships with each attachment figure independently. Nonetheless, findings from this study described attachment hierarchies that indicate that peers become the central source of

companionship and emotional support, especially for girls and for youth who have an insecure attachment to their parents (Nickerson & Nagle, 2005).

Gorrese and Ruggieri (2012) recently confirmed Nickerson and Nagle's (2005) findings regarding gender differences in peer attachment and the security of attachment with parents during adolescence. Gorrese and Ruggieri used a meta-analytic approach to review literature on peer attachment with a focus on the associations between parent and peer attachment, gender differences, and age differences. The researchers focused on studies that included dimensions of trust, communication, and alienation derived from the IPPA measure. Gorrese and Ruggieri hypothesized that significant associations would be found between parent and peer attachment, with adolescents who were highly attached to their parents more likely to report a strong attachment to their peers. In addition, they expected girls to be more attached to their peers than boys. No age differences were postulated, due to contradictory results reported in the literature (Gorrese & Ruggieri, 2012).

In total, the researchers selected 65 articles that explicitly focused on peer attachment (Gorrese & Ruggieri, 2012). For each study, an effect size was computed. For the first meta-analysis on relationships between parents and peers, effect sizes were reported as correlations. Cohen's *d* was computed for the second meta-analysis on gender differences between attachment scores of girls and boys. A positive effect size indicated that girls were more attached to peers than boys. For the third meta-analysis on age differences, effect sizes were reported as correlations between age and attachment (Gorrese & Ruggieri, 2012).

Findings from the first meta-analysis on relationships with parents and peers confirmed the researchers' hypothesis that adolescents who report secure attachment with parents tend to exhibit secure attachments with close friends. That is, adolescents' security of attachment with their parents is linked with having a secure working model of friendships, in addition to a greater capacity for both closeness and separateness in relationships with friends. The researchers emphasized that there is a gap in literature on father attachment and adolescent peer relationships, as more attention has been placed on mother attachment and peer relationships. Furthermore, the researchers' hypothesis about gender differences was also confirmed. Girls reported higher scores on trust and communication with peers, compared to boys. The researchers found that girls' friendships are typically deeper and more interdependent than boys. Specially, girls revealed more empathy, a greater need for nurturance, and a desire to sustain intimate relationships. In contrast, boys tended to place more emphasis on having a peer who shares an interest in sports and hobbies. Lastly, the researchers found a nonsignificant correlation between age and peer attachment. However, this result should be taken with caution, as most studies focused on a small age range, limited to adolescent years with a cross-sectional design (Gorrese & Ruggieri, 2012).

The strength of this study was the researchers' use of journal articles in the meta-analysis (Gorrese & Ruggieri, 2012). The researchers did not include unpublished studies or abstracts from conferences to ensure that the studies were of high quality and peer reviewed. In contrast, these choices also limited the study because the researchers explained that excluding unpublished studies is likely to introduce an upward bias into the effect size found, which means that calculated effect sizes were likely to be larger.

The researchers emphasized a need for future research on father attachment and adolescent peer relationships, as there is a dearth of research on this topic (Gorrese & Ruggieri, 2012).

In conclusion, several recent studies investigated the attachment system in adolescence with consistent findings, suggesting that adolescence is a time when peer relationships gradually take on more of the parent-directed safe-haven behavior experienced in infancy and early childhood. That is, by midadolescence, peers typically become the major source of intimacy and are key providers of emotional and social support. As relationships with parents shift and peers gain more importance, patterns of attachment may change as well. Specifically, researchers have consistently found that parental attachment influences adolescents' formation and development of peer relationships. For example, securely attached adolescents typically perceive their peer relationships as characterized by more social support, more intimacy, more affection, and fewer negative interactions. The findings, obtained from self-report measures primarily from the IPPA, showed that securely attached adolescents were able to generally display positive social interactions that resulted in social competence. These findings were a result of adolescent attachment ratings of both parents, and did not account for fathers or mothers separately. Furthermore, researchers called attention to the few studies on father-attachment in relation to adolescent peer relationships. Moreover, consistent evidence indicates that boys and girls exhibit different behavioral patterns in their peer relationships, with boys stressing independence and girls emphasizing interdependence and displaying high levels of trust and communication with peers. Thus, there is some

evidence that adolescent girls display a stronger attachment to peers in comparison to boys.

The next two sections of this review focus on adolescent girls' relationships with their peers to further understand the relational style of girls and its influence on social and emotional problems. The review will focus on a specific question that has interested scholars of emotional and social problems: "Why do adolescent girls display more emotional and social problems compared to adolescent boys?"

Adolescent-Female Peer Attachment and Social Stress

Theory and research on adolescent interpersonal relationships converge to suggest that girls may be more susceptible than boys to disruptions in their interpersonal worlds, particularly during adolescence. This gender difference is reflected in the types of challenges girls and boys experience, and in how they react to these challenges. Specifically, female peer relationships tend to be characterized by high levels of self-disclosure, intimacy, and emotional support, whereas male peer relationships are often based on companionship and joint activities (Rudolph & Rose, 2006). These gender differences intensify during adolescence because the peer group becomes a primary context for socialization and emotional experience, in addition to gender roles becoming more salient (Rudolph & Rose, 2006).

Because of girls' reliance on peers for emotional support and intimacy, disruptions in social networks and shifts in interpersonal roles that often accompany the transition into adolescence are likely to create higher levels of stress in female than in male relationships. For example, Henrich, Blatt, Kuperminc, Zohar, and Leadbeater's (2001) study indicated that adolescent girls' neediness and relatedness in peer

relationships are likely to be associated with a disruption in social functioning, which often results in social stress.

Data for the study were collected from an ethnically diverse sample of 261 sixth-grade students and 255 seventh-grade students at a public middle school in the State of New York (Henrich et al., 2001). The researchers used the Depressive Experiences Questionnaire for Adolescents to assess three primary constructs: *interpersonal concerns*, *self-criticism*, and *feelings of efficacy*. In addition, *neediness* and *relatedness* were measured by the subscales for the Interpersonal Concerns construct. Neediness items involved intense fears and concerns about loss of rejection in general, whereas relatedness items involved concerns about loss of rejection that are more situational or relationship specific. Furthermore, four aspects of social functioning were assessed: interpersonal competence, peer attachment, number of close friends, and popularity. The researchers used the Adolescent Interpersonal Competence Questionnaire to assess five components of competence in close friendships with peers: self-disclosure, providing emotional support to friends, management of conflicts, assertiveness, and initiation of friendships. In addition, the Peer-Attachment Scale from the IPPA was used to assess friendship quality. Participants also completed a friendship-nomination questionnaire in which they nominated up to 10 friends in their grade and ranked how close they were to each friend on a 5-point scale that ranged from 1 (*best friend*) to 5 (*acquaintance*). Using this scale, four types of friendship networks were identified: isolates, dyads, liaisons, and clique members (Henrich et al., 2001).

The results of the study indicated that the differentiation between neediness and relatedness appears to be more salient among girls than boys (Henrich et al., 2001). For

adolescent boys, relatedness but not neediness was positively linked with increased interpersonal competence and the quality of attachment to peers. For adolescent girls, relatedness was significantly and positively linked with interpersonal competence, whereas neediness was significantly and negatively linked with interpersonal competence, peer attachment, number of close friends, and popularity. In addition, neediness differentiated girls who were social isolates from girls who were more involved in friendship groups. Therefore, for girls, neediness and relatedness tended to result in opposite effects. Neediness may disrupt and inhibit social functioning, whereas relatedness may contribute to the ability of young adolescent girls to form relationships, participate in social networks, and thus gain popularity. Overall, girls in this study generally had higher levels of both types of interpersonal concerns and had higher levels than boys on all of the measures of social functioning, which is suspected to result in high levels of social stress (Henrich et al., 2001).

The researchers concluded that adolescent girls may be more vulnerable to interpersonal issues, compared to adolescent boys (Henrich et al., 2001). Compared to boys, girls typically interacted more with their same-sex friends, self-disclosed more, and thought more about their relationships. As a result, the researchers inferred that girls are generally more reactive to interpersonal stressors, compared to boys. The findings also indicated that there is a point at which excessive neediness crosses some boundary of competent interpersonal functioning for girls. That is, very needy girls' vigilance for rejection, excessive demands for reassurance, sympathy from friends, desire for exclusivity in friendships, and excessive monitoring of their friendships may be a result of poor interpersonal functioning. In addition, the researchers suggested that peer

rejection may also result from this neediness and lead to social isolation, which further results in social stress (Henrich et al., 2001).

It is important to note that the study was limited to adolescent self-report measures, and thus bias may have been introduced by the researchers' method (Henrich et al., 2001). That is, instead of only using self-report measures, a more valid method of operationalizing interpersonal constructs would be to use multiple measures, such as parent or teacher reports to capture the essence of the constructs. Nonetheless, the strength of this study was that the self-report measures chosen all had good internal consistency, predictive, and discriminate validity. In addition, the sample had diverse participants from various ethnic groups and socioeconomic backgrounds (Henrich et al., 2001).

Furthermore, some studies suggested that adolescent girls experience more interpersonal conflict in peer relationships, compared to adolescent boys, indicating that adolescent girls' friendships are more fragile in that they are shorter in duration compared to boys' friendships. Specifically, Benenson and Christakos (2003) interviewed 60 girls and 60 boys between the ages of 10 and 15 years about their difficulties in current and past close same-sex friendships. The researchers hypothesized that girls' closest same-sex friendships were more fragile than those of boys and girls would be more likely to display additional signs of vulnerability to dissolution. Participants in the study came from four schools in Montreal, Canada that served a population ranging from working-class to lower middle-class backgrounds, categorized by the city of Montreal, using educational and income levels of parents (Benenson & Christakos, 2003).

The goals of the interview were to understand the duration of current close same-sex friendships, as well as to predict vulnerability in these friendships (Benenson & Christakos, 2003). First, the duration of the participants' closest same-sex friends was recorded. Then, anticipated emotional reactions to the potential termination of the closest same-sex friendship were measured. Here, it was theorized that individuals who expressed more distress about the potential breakup of the friendship already might be more concerned about its dissolution. The third measure documented whether the closest same-sex friendships of participants already had been threatened. The researchers hypothesized that friendships that had been threatened were more vulnerable to future termination. The last measure recorded the existence of prior close same-sex friendships that had ended. The researchers assumed that a history of previous close same-sex friendship terminations would be associated with a general vulnerability to future relationships of this type (Benenson & Christakos, 2003).

The researchers found evidence that girls' closest same-sex friendships were more fragile than those of boys (Benenson & Christakos, 2003). In particular, females' current same-sex closest friendships were newer than males' same-sex friendships. That is, boys' friendships had endured for a longer period of time than those of girls. The researchers found that even though girls' closest same-sex friendships had lasted a significantly shorter period of time than boys' friendships, one third of girls' closest same-sex friends had done something to harm the friendship, compared with half that number for boys. In addition, girls reported having had more former close same-sex friendships that had ended. The girls in this study also reported that their lives were more affected by the termination of prior same-sex friendships, as girls were reported to find themselves more

alone and isolated than boys, who were more likely to be surrounded by a larger group of friends. Surprisingly, these results were remarkably consistent across the three grade levels represented in the study (Benenson & Christakos, 2003).

The current study is limited by the use of only a female interviewer. A male interviewer may elicit different responses. For example, male participants may report more difficulties in their same-sex friendships to a male interviewer, although research has consistently demonstrated that individuals of both sexes generally divulge more personal information to female interviewers than male (Winstead & Griffin, 2001). Nonetheless, the inclusion of both male and female interviewers would enhance the validity of the current findings. Furthermore, the generalizability of the study results require replicating the study with individuals with a more ethnically and economically diverse populations, with other age groups, and across different cultures. Despite these limitations, the findings of this study are consistent with a number of prior studies that have examined sex differences in the duration of close same-sex friendships. Overall, researchers have concluded that close same-sex friendships of girls are shorter in duration than those of boys, and are generally more fragile for girls.

A common theme that emerges among researchers is that girls place greater emphasis on the maintenance of their interpersonal relationships and demonstrate more concern about social evaluation than their male counterparts. The combined research indicated that adolescent girls' investment in their peer relationships may contribute to excessive concerns about the judgment of others. Perhaps as a consequence of their interpersonal engagement, girls demonstrate heightened concerns about the status of their relationships and about peer evaluation. The next section of this review will consider, in

greater detail, how adolescent girls' interpersonal style is likely to impact their emotional development.

Adolescent Female Peer Attachment and Internalizing Behavioral Problems

Many researchers have argued there is a difference in gender socialization during adolescence between girls and boys. Specifically, the distinct gender socialization pressures and demands for conformity have resulted in a well-known hypothesis called the gender-intensification hypothesis (Hill & Lynch, 1983). Hill and Lynch (1983) built on early research that explained behavioral differences between adolescent boys and girls and proposed that a convergence of biological, social, and cognitive changes were responsible for the differences between the developmental trajectories of girls and boys. Specifically, in their review, Hill and Lynch documented that adolescent girls had greater anxiety and self-esteem problems, resulting in greater internalization of problems, compared to boys. They explained that because girls were more intimate and connected in their social relationships, more social and behavioral problems may have resulted, in comparison to boys. Boys, on the other hand, were more inclined to exhibit physical aggression in their social relationships, resulting in more externalizing behavioral problems. Some 25 year later, there is some consistency in the hypothesis made by Hill and Lynch about adolescent girls' social and behavioral problems.

In 2006, Rudolph and Rose proposed a speculative, integrative peer-socialization model, suggesting that sex differences in emotional and behavioral adjustment can be partially accounted for by sex differences in peer relationships. These differences include adolescent girls' greater tendency to engage in extended dyadic interactions, engage in cooperative, prosocial behavior, and self-disclose to friends. Their summary found that

boys tended to interact in a larger network of peers who engage in rough-and-tumble play and competitive organized play. The researchers proposed that these sex differences affect the development of emotional adjustment problems (Rudolph & Rose, 2006).

According to the speculative model, researchers hypothesized that high levels of interpersonal concerns and need for approval are more characteristic of girls than boys, and are expected to have both positive and negative effects (Rudolph & Rose, 2006). Specifically, adolescent girls' behavioral styles should protect against the development of interpersonal problems. For example, engaging in a peer group where interactions are usually characterized by cooperation and prosocial behavior should enhance interpersonal security. Specifically, the greater self-disclosure among girls may have positive impacts on their self-esteem. Self-disclosure is believed to be a means by which friends can validate one another's developing identities. In contrast, girls' interpersonal style may negatively impact their emotional well-being. That is, adolescent girl's tendency to self-disclose may provide a context for social problems (for example, talking excessively about problems), which may contribute to the development of internalizing problems (Rudolph & Rose, 2006).

Despite the emotional cost, Rudolph and Rose (2006) suspected that female interpersonal styles generally protect girls against developing externalized behavioral problems. Because girls' peer groups in adolescence call for higher levels of cooperative and prosocial behavior compared to boys' peer groups, externalizing behaviors such as disruptive and aggressive behaviors among girls are likely to be criticized by peers. Boys, in contrast, are more likely to acquire externalizing behaviors in their peer group to use

for fighting or aggressive acts, which are understood to be learned through rough-and-tumble play and organized and competitive sports (Rudolph & Rose, 2006).

Two studies have been conducted to test Rudolph and Rose's (2006) ideas. In the first study, Rudolph and Conley (2005) studied 474 fifth-grade students from the University of Illinois Transition to Adolescence Project, which involved a group of early adolescents recruited from several midwestern school districts. The districts included students from a wide range of socioeconomic backgrounds. The study involved a two-wave, short-term longitudinal design, in which adolescents completed a variety of questionnaire measures during the spring of 1 school year and the fall of the following school year, approximately 6 to 7 months apart. Specifically, the adolescents completed the Fear of Negative Evaluation scale to test social-evaluative concerns and the Children's Depression Inventory to test depressive symptoms. Teachers provided reports of adolescents' prosocial behaviors and aggression using the Teacher Assessment of Social Behavior (Rudolph & Conley, 2005).

As anticipated, girls reported higher levels of social-evaluative concerns compared to boys, which is consistent with the prediction that female and male differences in personality attributes reflect a heightened investment in relationships (Rudolph & Conley, 2005). In addition, researchers confirmed that heightened concerns of social evaluation were also associated with heightened prosocial behavior, diminished aggression, and higher levels of depression, concurrently and over time. Specifically the researchers explained the observed sex differences in depression by suggesting that social-evaluative concerns act as a mechanism underlying adolescent girls' vulnerability to depression. In addition, the social-evaluative concerns may have served as a critical

self-regulatory function by motivating adolescent girls to engage in relationship-enhancing behaviors and inhibit expressions of aggression that would jeopardize their relationships. This study extended the existing research by examining one pathway that underlies adolescent girls' interpersonal competence and depression. The researchers encouraged future studies to consider another pathway; specifically to study adolescent girls' attachment security and their risk for depression and engagement in risky behaviors, resulting in the opposite effect (Rudolph & Conley, 2005).

The data used in this study may have been influenced in part by the source of information for each key construct (Rudolph & Conley, 2005). In particular, the researchers used teachers as informants to test the interpersonal competence perceived by others, which served as a strength of this study, as prior research confirmed that self-perceived competence is linked to relationship investment. However, social concerns may have been more strongly linked to depression than to interpersonal competence because adolescents completed the depression measures, whereas teachers completed the interpersonal-competence measure. Thus, the shared method variance between social-evaluative concerns and depression, but not interpersonal competence, may have affected the strength of the study (Rudolph & Conley, 2005).

In a second study, Newman et al. (2007) studied 733 ethnically and socioeconomically diverse adolescents ranging from the age of 11 to 18 years. Participants were recruited from eight school districts and one urban minority scholarship program in the Midwest. The sample was 61% female; 61% of participants were non-Hispanic Whites, 28.5% African American, and 1.4% Asian. The researchers explored the role of being integrated into a peer group and suspected that group membership would

act as a protective factor in preventing internalizing and externalizing behavioral problems in adolescent girls and boys. Specifically, peer-group membership was differentiated by peer-group affiliation, a sense of group belonging, and the importance of group membership. To assess peer-group affiliation, participants were asked to “list the different groups and types of kids” at their school. The importance of group membership was assessed by asking participants “How important is it for you to find a group that provides you with a sense of belonging?” The response scale for this item ranged from 1 = not very important to 5 = very important. Last, participants completed the Group Belonging Scale to assess the quality of peer-group belonging (Newman et al., 2007).

The researchers had four hypotheses in total (Newman et al., 2007). The first hypothesis was supported and found that girls had higher internalizing scores than boys, whereas boys had higher externalizing scores than girls. The second hypothesis was also supported, finding that peer-group membership was more important for girls than boys. The results indicated that most girls had significantly higher scores on group belonging and on the measure of group membership than boys, confirming that group membership is more important to most girls than to boys, and that girls generally experience a greater sense of group belonging than do boys. The third hypothesis was that a positive sense of group belonging would be associated with lower internalizing and externalizing behavioral problems. Surprisingly, the researchers found that girls who had more internalizing behavioral problems than boys indicated an increase in peer-group belonging. The researchers’ final hypothesis was supported, indicating that both girls and boys for whom group membership was very important, but who had a lower sense of group belonging, had significantly more internalizing and externalizing behavioral

problems than adolescents for whom group membership was important and had a positive sense of group belonging (Newman et al., 2007).

In general, the results confirmed Rudolph and Rose's (2006) theory that adolescent girls who report more internalizing problems also view group membership as important, but do not have a positive sense of group belonging (Newman et al., 2007). Hence, the results highlighted that both boys and girls who reported fewer internalizing and externalizing behavioral problems also experienced a sense of group belonging. This way of looking at group membership helped identify how adolescents, especially girls, may be vulnerable to developing behavioral problems when their desire for group belonging is not being met. However, some limitations of the study should be considered. Specifically, the parental-consent process biased the study sample, including those adolescents and their families who had positive relationships (at least to the extent that adolescents brought home study slips that were filled out by a parent and returned by the student). That is, families that are more disorganized or where there is parent-child conflict may have been less likely to return the forms and more likely to have serious externalizing and internalizing problems. The researchers called attention to the need for more research that addressed this developmental pathway of adolescent-parent relationships and behavioral problems, in relation to peer-socialization problems (Newman et al., 2007).

A second line of research involves another recently studied construct, corumination, defined by Rose (2002) as extensively discussing problems in the context of a dyadic relationship. Rose conceptualized this process as a response to stress that is characterized by frequently discussing problems, mutual encouragement of discussing

problems, revisiting the same problem repeatedly, speculating about causes and consequences of problems, and focusing on negative feelings. Corumination is more common among adolescent girls than boys, as self-disclosure has accounted for closer friendships among girls than boys (Rose, Carlson, & Waller, 2007). Based on rumination research, researchers found consistent indications that greater corumination among girls is associated with greater emotional difficulties among girls than boys.

Specifically, in 2002 Rose tested 608 third-, fifth-, seventh-, and ninth-grade youth to measure corumination among friends. The sample consisted of 87% European American, 6% African American, 2% American Indian, 1% Asian American, 1% Hispanic American, and 3% biracial students. A 27-item Co-rumination Questionnaire was developed for this research to assess the extent to which participants typically coruminated with close same-sex friends. Participants also responded to five items from the Intimate Exchange subscale of the Friendship Quality Questionnaire to assess the extent of self-disclosure in same-sex friendships. To test rumination, the Responses to Depression Questionnaire was used. A friendship-nomination measure was used to identify reciprocal friendships. A self-reported and friend-reported Friendship Quality Questionnaire were used to test friendship quality and closeness. Lastly, the Children's Depression Inventory and the Revised Children's Manifest Anxiety Scale assessed internalizing symptoms (Rose, 2002).

The researcher concluded that girls reported corumination, self-disclosure, higher levels of positive friendship quality and closeness, and higher internalizing symptoms than did boys (Rose, 2002). These differences were more pronounced among adolescents than children, due to higher levels of corumination among adolescent girls, compared

with younger children. Furthermore, corumination was significantly and positively correlated with self-reported positive friendship quality and closeness, and internalizing symptoms. In addition, corumination and self-disclosure were each significantly and positively correlated with self-reported positive friendship quality and closeness. However, only corumination and not self-disclosure was related to internalizing symptoms. Overall, the results indicated that higher levels of corumination among girls than boys helped account for closer friendships among girls than boys (assessed by both self- and friend reports), but also for more depressive and anxiety symptoms among girls than boys (Rose, 2002).

Generally, the research contributes to strengthening the friendship literature regarding the association between close friendships, corumination, and internalizing problems in adolescent girls (Rose, 2002). However, a limitation of the study was that it relied primarily on self-reports. Assessing emotional adjustment with clinical interviews would be imperative to ensure that associations with internalizing symptoms were not due to shared method variance, and that bias was not introduced by the method. In contrast, the strength of this study was the multiple measures that captured the essence of each construct: corumination (rumination and corumination scales), friendship quality (through self- and friend reports), and internalizing symptoms (anxiety and depression in separate self-reports). Although this study was consistent with the idea that corumination may be a peer-relationship process that has positive and negative adjustment consequences, the study did not test whether corumination was an antecedent of friendship and emotional-adjustment changes.

Thus, in a second study by Rose et al. (2007), the researchers tested whether corumination was a risk factor for depression and anxiety, but a protective factor for friendship problems. To test the relationship between corumination and adjustment, the researchers studied 813 third-, fifth-, seventh-, and ninth-grade youth during a 6-month period that was divided into Time 1 and Time 2. The sample was 86% European American, 10% African American, and 1% each Native American, Asian American, Hispanic American, and biracial. No information was collected regarding participants' parents' education, occupation, or socioeconomic status. To be included in the study, participants had to have data for corumination, friendship participation, depression symptoms, and anxiety symptoms at Time 1 and 2 (Rose et al., 2007).

Participants in the sample completed several self-report measures including the friendship-nomination measure that determined the participants' three best friends; the 27-item Co-rumination Questionnaire; the Friendship Quality Questionnaire that was used to assign youth their highest priority friend to report on for friendship quality; the Children's Depression Inventory; and the Revised Children's Manifest Anxiety Scale (Rose et al., 2007). The results of the study yielded considerable across-time stability for corumination, depression, anxiety, and positive friendship quality. At each point in time, adolescent girls scored higher than younger children and adolescent boys for corumination. Notably, Time 1 corumination predicted increases in positive friendship quality, depression, and anxiety, separately and over time for adolescent girls only. In addition, adolescent girls with depression and positive-friendship quality each predicted increases in corumination. Adolescent girls with anxiety and positive friendship quality also predicted increases in corumination. The findings indicated that when support

processes for adolescent girls involved talking about problems excessively, the effect on emotional adjustment might be negative rather than positive. Hence, the effects of corumination for adolescent girls only resulted in increased levels of depressive and anxiety symptoms. The results suggested that friendships may play an important role in the development of girls' internalizing behavioral problems (Rose et al., 2007).

Although the study contributed significantly to research on the impact of friendship and adolescent well-being, there were some limitations (Rose et al., 2007). The longitudinal design was a strength of the study, but studying participants for longer than 6 months would have been more useful. Specifically, the stability of friendship quality, depression, and anxiety tend to change over the period of a full school year. Although corumination did predict changes in friendship and emotional adjustment, the magnitude of these effects was small. Hence, a longer time period may weaken the stability, leaving more unaccounted variance at a later assessment. Corumination is only one of the many potential factors affecting adolescent girls' internalizing behavioral problems. The study focused on positive aspects of friendships because a relatively direct link was expected between corumination, internalizing behavioral problems, and friendship quality. However, the researchers acknowledged that future studies should also assess the problematic aspects of friendships to help understand adolescent girls' internalizing behavioral problems (Rose et al., 2007).

Collectively, this research demonstrated that female adolescent same-sex peer relationships can indeed increase the development of internalizing behavioral problems, while reducing the risk of externalizing behavioral problems. The fact that certain interpersonal styles are responses to social problems suggests interesting adjustment

outcomes for girls compared to boys. Although considering peers as socializing agents can be argued to be important, some researchers suggested there are also likely to be other pathways to adolescent girls' development of behavioral problems. Specifically, father–daughter attachment has also been shown to possibly increase the risk of internalizing behavioral problems for some adolescent girls. The final section of this review will bring attention to the influence of father attachment on adolescent girls' emotional problems.

The Influence of Father Attachment on Adolescent Girls' Internalizing Behavioral Problems

Thus far, the studies in this review have identified that adolescents tend to disengage from parents during early adolescence and instead are increasingly susceptible to peer influence. Adolescent girls, in particular, are found to have increased social stress and social problems that have been linked to the development of internalizing behavioral problems. This section of the review will demonstrate that there has also been some indication that an insecure father attachment may influence the development of internalizing behavioral problems in adolescent girls.

Specifically, Rosenthal and Kobak (2010) studied adolescent-attachment hierarchies to understand the association between the placement of attachment figures and adolescent girls' increased internalized behavioral problems. Two samples were recruited from the mid-Atlantic region of the United States: the first sample from a private high school and the second from a college introductory psychology class. In total, 212 high school students, ranging from 13 to 18 years, and 198 college students aged 18 to 22 completed an online survey. Several self-report measures were used. Specifically,

the Important People Interview was used to assess adolescents' attachment hierarchies by identifying and rank-ordering attachment figures. The Youth Self-Report obtained information regarding adolescent internalizing behavioral problems. Lastly, parent-teen relationship was studied using the Mother and Father Acceptance Scale on the Shortened Child Report of Parental Behavioral Inventory. The researchers hypothesized that developmental differences would occur between high school and college groups, with increased identification of peers as attachment figures in the college sample. In addition, they anticipated that adolescents who ranked peers as their highest attachment figure would be at greater risk for internalizing behavioral problems (Rosenthal & Kobak, 2010).

The researchers found differences in the compositions and structure of adolescents' attachment hierarchies between early high school participants (those in ninth and 10th grades), later high school participants (in 11th and 12th grades), and college participants (Rosenthal & Kobak, 2010). Specifically in the college sample, romantic partners were placed in the highest position in the organization of hierarchies; fathers, in contrast, were placed in the lowest position. The structure of adolescents' hierarchies was more complicated in the high school sample, in that adolescents with internalizing behavioral problems placed peers in the highest hierarchy and fathers in the lowest hierarchy. The researchers suggested that forming attachment bonds to friends during mid- to late adolescence likely resulted in efforts to compensate for poor or nonexistent relationships with their fathers. The strong negative correlation between friend's placement and father placement ($r = -.45$) suggested the dependence of these variables and may indicate a general maladaptive pattern characterized by low-father and high-friend placement (Rosenthal & Kobak, 2010).

One considerable limitation of this study was the hierarchal system arrangement (Rosenthal & Kobak, 2010). That is, the researchers were not able to account for adolescents at risk for internalizing behavioral problems and the level of attachment that peer and father relationships provided. It may be the case that some adolescents with emotional problems have low security attachments to their peers in addition to their fathers. In contrast, peer-attachment ratings may have superseded that of fathers, perhaps due to the desire of adolescents to physically spend less time with their fathers. As a result, the cross-sectional design of this study created several limitations to the weight of the findings. Further investigation is needed to link father attachment to adolescents' internalizing behavioral problems by understanding how adolescents with positive and negative social relationships are affected by internalizing behavioral problems. The current sample also limits the generalizability of the findings to a homogenous sample of middle-income European American high school and college students. The composition and structure of adolescents' attachment hierarchies may be quite different among girls compared to boys or in a more ethnically diverse sample. Nonetheless, the current research shed light on how adolescents maintain, organize, and gradually transform relationships with multiple attachment figures (Rosenthal & Kobak, 2010).

To further explore the link between multiple attachment figures and internalizing behavioral problems, Liu (2006) explored how peer support, social expectations of peer interactions, and depressive symptoms were related to paternal and maternal attachment, separately. Liu (2006) studied 1,144 eighth-grade students (622 boys; 522 girls) from eastern Taiwan who were randomly selected by stratified cluster sampling. The participants were administered a series of measures: the Children Depression Inventory,

Children's Perception of Security, the Children's Expectation of Social Behavioral Questionnaire, and Perceived Social Support from Friends.

The results of the study mostly supported Liu's (2006) proposed model, revealing that paternal and maternal attachment significantly predicted adolescent depressive symptoms, either by a direct path or by means of peer support and social exceptions of peer interactions. In addition, adolescents in Taiwan with a secure attachment to fathers and mothers tended to receive support in their peer relationships, were less likely to interpret rejection and disappointment in peer interactions, and had fewer depressive symptoms. With regard to depressive symptoms for adolescent girls, direct links between paternal attachment and depression revealed that adolescent girls tended to use paternal attachment as the secure source of psychosocial distress. In other words, a low-security father–daughter attachment was positively correlated with the development of adolescent girls' depressive symptoms. In contrast, a direct link between maternal attachment and depressive symptoms for adolescent boys suggested that security with fathers might be less influential in predicting adolescent boys' depressive symptoms. Liu supported this finding by specifying that relational theory indicates that relationships are more important for girls and that girls are more committed than are boys to sustaining connections (Liu, 2006). The results of this study may not be generalizable to Canada or the United States, as the culture and family values in Taiwan may be quite different from those in Canada and the United States. Therefore, further research is needed in Canada or the United States to confirm the link found in Taiwan between father–daughter attachment and depressive symptoms.

In another study related to internalizing behavioral problems, Van Eijck et al. (2012) examined the longitudinal direction of effects between adolescent girls' and boys' generalized-anxiety-disorder (GAD) symptoms and perceived mother- and father-attachment quality. The researchers defined GAD as an excessive, persistent, and uncontrollable worry related to social-evaluative concerns in interpersonal interactions. The purpose of the study was to test the longitudinal, bidirectional relationship between perceived attachment quality with fathers and mothers and GAD symptoms in adolescents from age 12 to 20. Additionally, the researchers examined whether gender and age affected this relation. The researchers hypothesized that the relation would be stronger for girls than for boys and that during early adolescence, GAD symptoms are more strongly related to perceived parent-adolescent attachment-relationship quality than during middle adolescence (Van Eijck et al., 2012).

The sample of this study consisted of 1,313 Dutch adolescents who participated in the longitudinal project on Conflict and Management of Relationships (Van Eijck et al., 2012). For participant selection, there were no exclusionary criteria. Participants came from different Dutch junior high and high schools from a province in The Netherlands: 49% of the adolescents were boys. Participants were divided into an early- to middle-adolescence cohort ($n = 923$) and middle- to late-adolescence cohort ($n = 490$). Two self-report measures were used to assess the researchers' questions: the GAD scale of the Screen for Child Anxiety-Related Emotional Disorders and the IPPA-R. Data were analyzed for fathers and mothers separately. Participants completed the questionnaires during two annual assessments (Van Eijck et al., 2012).

The results indicated that adolescents who reported higher levels of GAD symptoms perceived lower quality attachment relationships with both mothers and fathers 1 and 2 years later. In contrast, adolescents who reported lower quality attachment with fathers reported higher levels of GAD symptoms 1 and 2 years later. This finding supports attachment theory, proposing that parents foster healthy development among adolescents (Bowlby, 1979). This path of perceived father-attachment relationship to GAD symptoms was stronger than the path of GAD symptoms to perceived father-adolescent attachment. The difference between GAD and attachment-relationship quality with fathers and mothers was unexpected, in that researchers hypothesized that GAD symptoms would be found for mothers, but not fathers. Yet, the findings revealed that attachment quality with only fathers predicted GAD symptoms, suggesting that fathers play an important role in the development of adolescents. No differences were found in the cross-lagged paths between perceived attachment-relationship quality and GAD symptoms by gender or age (Van Eijck et al., 2012).

This study had several important strengths and limitations (Van Eijck et al., 2012). A major strength of the study was the longitudinal design, which allowed researchers to distinctly understand the direction of paths between GAD symptoms and perceived parent-adolescent attachment relationships. Previous studies investigated this association with a cross-sectional design. Furthermore, the researchers separated fathers from mothers in an effort to examine the distinct relationship between GAD symptoms in adolescents. This was an important strength, as fathers are generally neglected in the research of anxiety symptoms. In contrast, one limitation of the study was the choice of sample. The study only included adolescents from the general population, and because of

this, the study cannot be compared to studies that gathered data from adolescents diagnosed with GAD. In addition, because the sample consisted of Dutch adolescents, the results cannot be generalized to other samples of adolescents. Nonetheless, the research was significant in detecting that only for fathers, the perceived quality of attachment relationship predicted later GAD symptoms in adolescents. Moreover, the results indicated the importance of encouraging paternal involvement with adolescents, as well as the importance of involving fathers in research and treatment with adolescents (Van Eijck et al., 2012).

Overall, there has been little consideration of the role of attachment to fathers, compared to attachment to mothers, as it relates to internalizing behavioral problems in adolescent girls. Assessing attachment to both parents, independently, seems to be the exception and not the norm in available research. Although the evidence is limited, these findings suggested that attachment to fathers has a comparable impact to attachment to mothers in the development of adolescent girls' internalizing symptoms. However, more research is needed in this area to fully grasp the association between quality father attachments and emotional problems in adolescent girls.

Summary

In many cultures, societal norms have dictated that mothers are to assume the caregiver role, whereas fathers have the role of breadwinner and playmate. Given mothers' greater involvement in their children's lives, it is expected that attachment to mothers may influence the development of their adolescent children's internalizing symptoms more strongly than father attachment. Most theories on parental influences have reflected this view by emphasizing the importance of the quality of mother-child

relationship and almost ignoring the role of fathers (Lamb, 2010). Alternatively, some researchers have shown that fathers have unique influences in many areas of child development. For example, it has been found that attachment to father is associated with children's responses to novel situations and social interactions (Grossman et al., 2002). In addition, attachment to fathers may be related to internalizing symptoms when children face changes in their social life that require social competence to make successful adjustments. For example, attachment to fathers may be especially relevant when adolescent girls experience disruptions in their friendships, which has been found to frequently occur in the relational styles of adolescent girls. The current research will explore the relationships between father attachment and adolescent girls' social competence and social problems in relation to internalizing behavioral problems. By understanding these dynamic interactions, interventions can be targeted toward systematic difficulties in family and peer systems.

Clinical Relevance of the Current Study

During adolescence, girls are more prone to developing internalizing problems in comparison to boys (McGuinness, Dyer, & Wade, 2012). Researchers suggested that socializing experiences with peers intertwine in the development of these vulnerabilities (Rudolph & Rose, 2006). Researchers also indicated that fathers contribute to their adolescent daughters' internalizing behavioral problems and their children's social competence (Williams & Kelly, 2005). However, no research to date explored the unique interaction between the quality of father attachment, social competence, social problems, and emotional problems for adolescent girls. The role of fathers in their adolescent daughters' social development has been neglected, as most studies have focused on

attachment to mothers only. Examination of the quality of father attachment is needed to understand the vulnerabilities and risk factors that may influence the trajectory for such problems. Understanding the important role of fathers in their adolescent daughters' emotional and social development may lead to effective interventions to help prevent disorders from developing by educating parents and girls about the importance of a strong paternal connection, and implementing intervention skills to help reduce social problems.

It has been well established that men are generally less likely than women to use mental health services and tend to remain uninvolved in treatment (Cusack, Deane, Wilson, & Ciarrochi, 2004). This pattern of underuse of mental health services by men is consistent across race, ethnicity, age, and parental status (Addis & Mahalik, 2003). Not surprisingly, fathers are significantly less involved in clinical interventions for their children, adolescents, and families than are mothers (Phares et al., 2010). By studying the impact that fathers have on their daughters' social and emotional development, fathers may be more inclined to participate in treatment programs and services with their daughters. There is accruing evidence to suggest that fathers have a positive influence on children's psychosocial problems when they are included in the mental health treatment of their children (Phares et al., 2010). Thus, building awareness on the impact fathers have on their daughters' mental health may elicit participation from more fathers, encouraging them to be emotionally sensitive to their daughters' psychosocial development during adolescence.

It is also important to recognize that for some adolescent girls, beliefs about whether they are worthy of love, connection, and nurturance from their fathers may be

intimately tied to emotional and social problems. Thus, this study is intended to illuminate the perspective of adolescent girls and their beliefs about their emotional connection with their fathers and their peers. It may be the case that adolescent girls with emotional and social problems have expectations about their fathers that keep them from developing strong emotional connections with their fathers. Emotional expectations can be identified through the use of the IPPA-R measure, which includes questions such as, “Talking over my problems with my father makes me feel ashamed or foolish,” “I don’t get much attention from my father,” and “I feel like it’s no use letting my feeling show around my father.” Adolescent girls, who endorse responses to these questions and others may be emotionally removed from their father or convey a belief that their father is emotionally removed, and unable or unwilling to understand emotions. Exploring the emotional expectations of adolescent girls can encourage fathers and daughters to take responsibility for their role in the attachment relationship in an effort to strengthen their bond.

In addition, the data may be clinically relevant to problems seen or presented by adolescent girls in psychotherapy or mental health treatment. Exploring the research questions in this study with adolescent girls will assist clinicians to understand the specific relationship among social problems, emotional problems, and father attachment. If a poor father–daughter attachment is found to be associated with girls who endorse social problems and internalizing behavioral problems, then interventions, treatment, and prevention programs can help in establishing a strong connection between fathers and their daughters. Careful engagement of fathers in treatment may lead to more healing and long-term recovery.

This study focuses on subclinical problems of adolescent girls. From a developmental perspective, subclinical problems are important to study because they may act as a pathway to disorders (Graber & Sontag, 2009). Adolescent girls with elevated internalizing symptoms, but not disorders, tend to have impairments in functioning that are similar to those seen among youth who meet criteria for disorders (Graber & Sontag, 2009). Thus, factors that predict a progression on a pathway to internalizing disorders in adolescent girls are important to study, to prevent and treat these problems, and to mitigate their further development.

Chapter III: Methods

The methods chapter is divided into five sections. The first section includes the description of instruments. In the second section, I discuss the justification for the use of the measures. In the third section, I describe the demographic variables of participants. The fourth section includes the procedures used to collect the archival data and the procedure used for the present study. In the last section, I describe the method of statistical analysis of the data.

Description of Instruments

For this study, three measures not previously analyzed were selected as variables of interest from archival data found in Ferrari's (2008) study on "Attachment, Personal Resources and Coping in Trait-Anxious Adolescent Girls."

Demographics. The Youth Profile Questionnaire is a self-report instrument designed to obtain demographic information from participants such as age, grades, race, ethnicity, parents' marital status, and living arrangements.

Father attachment. Participants completed the Inventory of Parent and Peer Attachment- Revised (IPPA-R), developed by Armsden and Greenberg (1989). This self-report measure assesses the quality of perceived adolescent attachment to mothers, fathers, and peers on a 5-point Likert-scale-response format. The measure assesses three aspects of attachment, which results in an overall attachment score: Trust, Communication, and Alienation. The Trust scale measures the degree of mutual understanding and respect in the attachment relationship; the Communication scale assesses the extent and quality of spoken communication; and the Alienation scale assesses feelings of anger and interpersonal alienation. The IPPA-R is one of the first

instruments to address the issues and quality of father–daughter attachment in adolescence (Lamb, 2010). It is comprised of 25 items in each of the following three sections: (a) Mother-Attachment, (b) Father-Attachment, and (c) Peer-Attachment, yielding an overall attachment score for each section. Overall, the Father-Attachment (IPPA-R) will be the primary scale used to determine attachment in this study.

Social Competence, social problems, and internalizing behavioral problems.

The Youth Self Report (YSR) is a self-report measure consisting of 112 items taken from the Child Behavior Checklist (Achenbach & Rescorla, 2001), rewritten in the first person. The measure is part of the Achenbach System of Empirically Based Assessments and is to be completed by the child or adolescent.

The YSR consists of two parts: competence scales and problem scales.

Competence scales reflect different aspects of competence that are grouped into Activities, Social, School, and Total Competence. These items request information about specific activities, as well as ratings of the amount and quality of involvement in activities and relationships. The problem scales contain 103 problem items and 16 socially desired items. For each item, respondents used a 3-point Likert-type scale to rate how well the item described them during the past 6 months: *not true (0)*, *somewhat true (1)*, and *very true or often true (2)*. The YSR is combined to form eight narrow-band scales (syndromes) and two broadband scales (internalizing and externalizing). The internalizing problem scale reflects scores on the anxious/depressed, withdrawn/depressed, and somatic complaint subscales. The externalizing problem scales reflect on two narrowband scales: rule-breaking behavior and aggressive behavior.

In the present study, I intend to explore all of the YSR scales referring to social competence (three broad items, e.g., “About how many close friends do you have”), social problems (11 items; e.g., “Get teased”), and total internalizing behavioral problems (total of three internalizing syndromes: anxious/depressed—14 items; withdrawal/depressed—8 items, and somatic complaints—11 items). The YSR data will be considered an interval level of measurement, as the numbers reflect a continuous-measurement scale.

Justification for the Use of the Measures

Inventory of Parent and Peer Attachment—Revised (IPPA-R). During adolescence, self-report measures may be used to assess attachment, in contrast to observational measures used in infancy (McElhaney et al., 2009). Self-report measures allow researchers to understand the cognitive-based representations of adolescents’ internal working models (Berlin, Cassidy, & Appleyard, 2008). However, there are only a few psychometrically validated self-report measures that assess cognitive representations of father attachment. Most of these measures are developed for older adolescents or adults, and combine mother and father attachment into one measurement variable. For example, the initial version of the Parental Bonding Inventory involved adults retrospectively answering questions regarding the parental attachment they experienced during their adolescent years. The only valid and reliable attachment tool that assesses father attachment beyond infancy and prior to late adolescence is the IPPA-R (Armsden & Greenberg, 1989).

Gullone and Robinson (2005) investigated the revised version of the IPPA to evaluate its reliability and validity. The researchers compared the IPPA-R to the PBI,

which was found to have sound psychometric properties (Parker et al., 1979). Parker and colleagues (1979) reported a split-half reliability of .88 for the Care scale and .74 for the Overprotection scale. The overall Mother and Father Attachment score on the IPPA-R was strongly positively correlated with the Care dimension of the PBI ($r = .73$) and moderately negatively correlated with the Overprotection dimension of the PBI ($r = -.51$). In addition, the subscales of the Mother and Father Attachment scores were moderately correlated with the PBI dimensions ($r = .65$).

In addition, Armsden and Greenberg (1989) reported good internal consistency for the IPPA-R with a Cronbach's alpha coefficient for attachment at .89. Convergent validity has been reported on the basis of moderate correlations with other measures, including the Family Self-Concept subscales of the Tennessee Self-Concept Scale ($r = .78$ with parent attachment) and Social Self-Concept subscale ($r = .46$ with parent attachment). Also, significant positive correlations between parent attachment and the Cohesion ($r = -.56$), Expressiveness ($r = .52$) and Organization ($r = .38$) subscales on the Family Environment Scale have been reported. In addition, significant negative correlations with the Conflict ($r = -.36$) and Control ($r = -.20$) subscales on the Family Environmental Scale were reported (Armsden & Greenberg, 1989). Researchers concluded that the IPPA-R is a valuable tool for the assessment of parent and peer attachment in youth between the ages of 9 and 15 years. The IPPA-R has been shown to be the only reliable and valid measure that assesses key aspects of attachment relationships (i.e., trust, communication, and alienation) during adolescence.

Youth Self-Report (YSR). Internalizing behavioral problems do not occur in isolation from other disorders and problems (Graber & Sontag, 2009). However, many

studies of subclinical symptoms focus on a single outcome. Examination of cooccurrence or comorbidity is important to determine with internalizing behavioral problems. Caron and Rutter (1991) cautioned that failure to identify comorbid conditions can result in two problems. First, effects associated with the identified condition may be attributable to other conditions; and second, the experience of the other condition may influence the course of the first condition. Identifying comorbid conditions and the correlates of these conditions is essential to understanding the developmental processes of psychopathology across adolescence.

Syndromal classifications are based on endorsement of a constellation of symptoms that cooccur in a statistically consistent manner (Graber & Sontag, 2009). It has been studied that depressive symptoms frequently occur concurrently with other symptoms and disorders (Kessler et al., 1996). Nearly half of all adolescents who meet diagnostic criteria for depression have a comorbid condition (McGee et al., 1990). For anxiety symptoms, comorbidity is also commonly reported across studies (Zahn-Waxler, Klimes-Dougan, & Slattery, 2000). Comorbidity observed between anxiety and depression is quite high as well (Lewinsohn, Zinbarg, Seeley, Lewinsohn, & Sack, 1997). Consequently, comorbidity may affect the severity of impairment experienced by the individual, and thus impact the course of treatment.

Achenbach and Rescorla (2001) developed a syndrome scale that classifies anxiety and depression together, along with withdrawal from social contacts and depression. The scale distinguishes non-referred adolescents across multiple cultures and nations. The Achenbach and Rescorla's Youth Self-Report syndromal scale will be used

in this study to identify subclinical internalizing problems based on the comorbidity of symptoms. This study will also use the Social Problems scale.

The YSR is a well-validated, normative measure of problematic behavior in youth aged 11 to 18. The test–retest reliability for the empirically based problem scales is $r = .88$ and internal consistency was assessed at $r = .71$ to $.95$ (Achenbach & Rescorla, 2001).

Participants From Archived Data

Participants included a total of 246 Canadian adolescent females from two Catholic high schools. The obtained archival demographic information included age, race/ethnicity, living arrangements, and parents' marital status (see Table 1).

The nonrandom sample consisted of middle-adolescent girls aged 14–16 years old ($M = 15.1$) who attended two Canadian Catholic high schools from the ninth- (35%), 10th- (35%), and 11th (30%) grades (see Table 1). Fully a third of participants were Caucasian and another third were Asian/Pacific Islanders. For living arrangements (see Table 1), 70% of the adolescent girls lived with both biological parents. As presented in Table 1, 85% of the adolescent girls' parents were married. Thirty girls were excluded from the study as result of incomplete parent-consent forms ($n = 6$), absence from school on data-collection day ($n = 11$), and incomplete surveys ($n = 13$).

Table 1

Description of Study Participants

| Characteristics (N=246) | | Total % (n) |
|--------------------------------|-----------------------------------|----------------|
| Age, 14-16 | Mean | 15.1 |
| | Range | 2 |
| Race, % (n) | White | 37% (91) |
| | White Non-Hispanic | 1.2% (3) |
| | African | 0.4% (1) |
| | Hispanic | 2.0% (5) |
| | Asian/Pacific Islander | 35.4% (87) |
| | Aboriginal | 0% (0) |
| | Filipino | 10.2% (25) |
| | Mixed | 9.8% (24) |
| | Other | 4.1% (10) |
| Lives With, % (n) | Natural Mother & Father | 70.2% (172) |
| | Mother only | 6.9% (17) |
| | Father only | 2.4% (6) |
| | Mother and Step-Father | 0.4% (1) |
| | Father and Step-Mother | 0% (0) |
| | Mother and Father plus | 14.7% (26) |
| | Mother plus | 2.9% (7) |
| | Father plus | 0.4% (1) |
| | Other (Father/Stepmother + other) | 1.2% (3) |
| Parental Martial Status, % (n) | Married | 85.0% (209) |
| | Divorced | 6.1% (15) |
| | Separated | 7.3% (18) |
| | Widowed | 1.6% (4) |

Note. Source: *Attachment, personal resources and coping in trait-anxious adolescent girls*, by L. Ferrari, 2008, doctoral dissertation, available from ProQuest Theses and Dissertations database, UMI No. 305247166.

Procedures

Archived study. From two Catholic high school, 246 Canadian females completed a packet of questionnaires in 2008 for a study on “Attachment, Personal Resources and Coping in Trait-Anxious Adolescent Girls” (Ferrari, 2008). Human Subjects/Ethics Review Board approval was required by Antioch University Seattle and the Catholic Archdiocese Independent School Board. Once approval was granted, the researcher met with school administrators and explained the purpose and procedures of the study. The researcher obtained final approval from school administrators to conduct the research at their school with their students. Thereafter, the school administrator posted an announcement about the study on the school website for students and their parents to read. The announcement educated parents and students about the purpose of the study and the procedure. The announcement also informed the parents and students that the study would take place during regular class time and that parental consent was required for participation in the study.

Student participants were informed of the purpose, procedures, and limits to confidentiality during class time by the researcher. The risks and benefits of the study were outlined in a consent form that was presented to potential student participants during the class presentation of the study. Potential participants were instructed to give the consent form to their parents. The possible risks included feeling embarrassment or discomfort when answering the survey questions. The participants were informed that they could skip any question they did not want to answer and that they could quit participation at any time. The researcher also explained in the consent form that there would be no direct benefit to the student in participating in the study. Instead, the study

was intended to increase the researcher's understanding of how adolescent girls deal with their problems to provide more recommendations, interventions, treatment, and education to adolescent girls, parents, teachers, and other service professionals. Students who were given parental consent and had agreed to participate in the study were requested to return the consent form to the researcher on data-collection day. The researcher provided a \$5.00 gift card with the consent form as an expression of appreciation for participation in the study. At the time of collection, parental consent was given to use the data for additional research beyond that study.

The students' participation in the study was confidential. There was no identifying information such as the student's name on the study forms. Students who returned their parent-consent forms were given a separate numbered measurement questionnaire packet. Numbers were assigned instead of names to each of the questionnaire packets and consent forms. Students received a numbered packet that matched their numbered consent form. A total of five measurement instruments were administered by the researcher in person to the adolescent girls at their high school. The questionnaire packet included (a) a demographic measure to assess age, gender, ethnicity, marital status, student grades and open-ended questions, (b) a measure of attachment, (c) a measure of anxiety, (d) a measure of coping; and (e) a measure of internalized/externalized problems and social/academic competence. The study data was kept in a locked file cabinet.

Present study. Human Subjects/Ethics Review Board approval was requested as an expedited review, because the research involved the study of existing (archival) data. At the time of data collection, parental written consent was given for the use of data for additional research beyond that study. For this study, three measures not previously

analyzed were selected as variables of interest from archival data found in Ferrari's (2008) study: (a) The Youth Profile Questionnaire measuring demographic information, (b) Inventory of Parent and Peer Attachment-Revised assessing father attachment, and (c) Youth Self Report measuring social problems, social competence, and internalizing behavioral problems. There was no anticipated risk of harm to participants, as the researcher analyzed secondary existing data. Likewise, there was no direct benefit of the research to participants. Moreover, the archival data were saved on a private computer that was password protected to which only the researcher had access. The intent of the present research was to increase the understanding of the role of fathers in their adolescent daughters' emotional and social development to provide more recommendations, interventions, treatment, and education to adolescent girls, fathers, teachers, and other service professionals.

Data Analysis

The archival research design is a survey design, intended to understand the effects of father attachment, social competence, social problems, and internalized behavioral problems among adolescent girls. There are three predictor variables (father attachment, social competence, and social problems), which were measured by the IPPA-R and YSR. The one criterion variable (total internalizing behavioral problems) was measured by the YSR. Data were analyzed using the Statistical Package for the Social Science (SPSS) version 16.0 software.

Bivariate correlations. Bivariate correlations were performed for each of the study variables to understand the strength of the relationships among the predictor variables (father attachment, social competence, and social problems) and criterion

variable (internalizing behavioral problems). The data will be displayed as a scatterplot for each bivariate relationship, to ensure relationships are linear.

Multiple regression. A standard multiple regression was conducted to understand the best combination of predictor variables by their ability to account for the most variance in the criterion variable. *R* squared indicates the proportion of variance in the criterion variable (Internalizing Behavioral Problems) that was shared by the weighted combination of predictor variables (father attachment, social competence, and social problems). The literature in this area indicated that father attachment, social problems, and social competence have some effect on adolescent girls internalizing behavioral problems. Thus, the results are anticipated to indicate how well this set of variables is able to predict internalizing behavioral problems in adolescent girls; it will also reveal how much unique variance each of the predictor variables explained in the criterion variable.

Chapter IV: Results

This study sought to answer the following questions: (a) Is there a relationship among the perceived quality of father attachment and adolescent girls' social competence, social problems, or internalizing behavioral problems? (b) How well can perceived quality of father attachment, adolescent girls' social problems, and social competence, uniquely predict internalizing behavioral problems among adolescent girls? This chapter will discuss participants who were eliminated from the archival sample, as well as describe the results of the descriptive statistics, bivariate correlations, and multiple regression analysis.

Sample Size

The archival sample contained 246 participants; 7 participants were eliminated from the analysis due to incomplete Father-Attachment surveys, yielding a final sample of 239. The missing data were treated via listwise deletion, both in the correlation and regression analysis.

Descriptive Statistics

Descriptive statistics for the study variables are presented in Table 2. The descriptive table is used to provide a very general, overall summary of the variables that were used in the study. For example, the mean and the median indicate the central tendency of the variables. The range and standard deviation are measures of variability. Skewness indicates the lack of symmetry of the distribution (whether the distribution has shifted to the left and is positively skewed, or to the right and is negatively skewed), and kurtosis measures the size of the tails. Taken together, these statistics describe the shape of the distributions of the variables.

Table 2

Descriptive Table for Study Variables

| | Father attachment | Social competence | Social problems | Total internalizing problems |
|----------------|-------------------|-------------------|-----------------|------------------------------|
| Mean | 82.1 | 58.6 | 59.9 | 59.6 |
| Median | 83.0 | 63 | 58 | 59.4 |
| Std. Deviation | 22.9 | 8.2 | 8.4 | 10.5 |
| Minimum | 25 | 29 | 50 | 32 |
| Maximum | 124 | 65 | 80 | 91 |
| Range | 99 | 36 | 30 | 59 |
| Skewness | -.27 | -1.5 | .64 | .29 |
| Kurtosis | -.70 | 1.68 | -.55 | .06 |
| Shapiro-Wilk | .98 | .78 | .91 | .99 |
| <i>df</i> | 239 | 239 | 239 | 239 |
| Sig. | .000 | .000 | .000 | .107 |

Note. Father Attachment raw score range 25-125; Social Competence clinical T <37; Social Problems & Total Internalizing Problems clinical T >63.

It was found that a large majority of adolescent girls scored high on the Father Attachment scale (*Range* = 99, *Mean* = 82.1, *SD* = 22.8) and Social Competence scale (*Mean* = 58.6, *SD* = 8.2). On average, adolescent girls reported to be in the borderline range for Social Problems (*Mean* = 59.9, *SD* = 8.4) and Total Internalizing Behavioral Problems (*Mean* = 59.6, *SD* = 10.5). Moreover, Father Attachment and Social Competence scores were negatively skewed (*Skewness* = -.27 and -1.5, respectively), whereas Social Problems and Total Internalizing Problems were positively skewed (*Skewness* = .64 and .29, respectively). All study variables, except Total Internalizing Behavioral Problems, were nonnormally distributed. However, a nonparametric test is not needed because Pearson's correlation r does not require normality assumptions to be met. Multiple regression, in contrast, requires the errors to be normally distributed. The normal Q-Q plot, discussed below, indicates that this assumption was met.

Bivariate Correlations

Checking assumptions of bivariate correlation. Bivariate scatterplots are used to explore the relationship between two continuous variables. The scatterplots provide an indication of whether the variables are related in a linear (straight-line) or curvilinear fashion. A curvilinear relationship yields an r value that underestimates the true strength of the relationship. It is important that the data is linear (and not curvilinear), because Pearson's r is designed to capture only the linear relationship between two variables. A bivariate correlational analysis alone cannot detect a curvilinear relationship. A scatterplot is needed to inspect the data points to provide a better idea of the nature of the relationship between the variables. The Pearson's correlation coefficient r is an appropriate measure of the degree of association for the variables indicated in Figures 1–6, as there is no indication of curvilinear relationships.

Moreover, there were a total of 13 participants from the dataset who were found to be possible outliers. A potential outlier is identified if its value is less than or equal to the first quartile minus 1.5 times the interquartile range, or is greater than or equal to the third interquartile plus 1.5 times the interquartile range (Pallant, 2007). Using this criterion, 7 potential outliers were identified for the Social Competence variable, and 5 potential outliers for the Total Internalizing Problems variable. Bivariate correlations were run with and without these participants, and eliminating these participants did not change the results of the analysis (significant correlations were still significant). All of the participants were kept in the analysis, as there is no theoretical reason for excluding them.

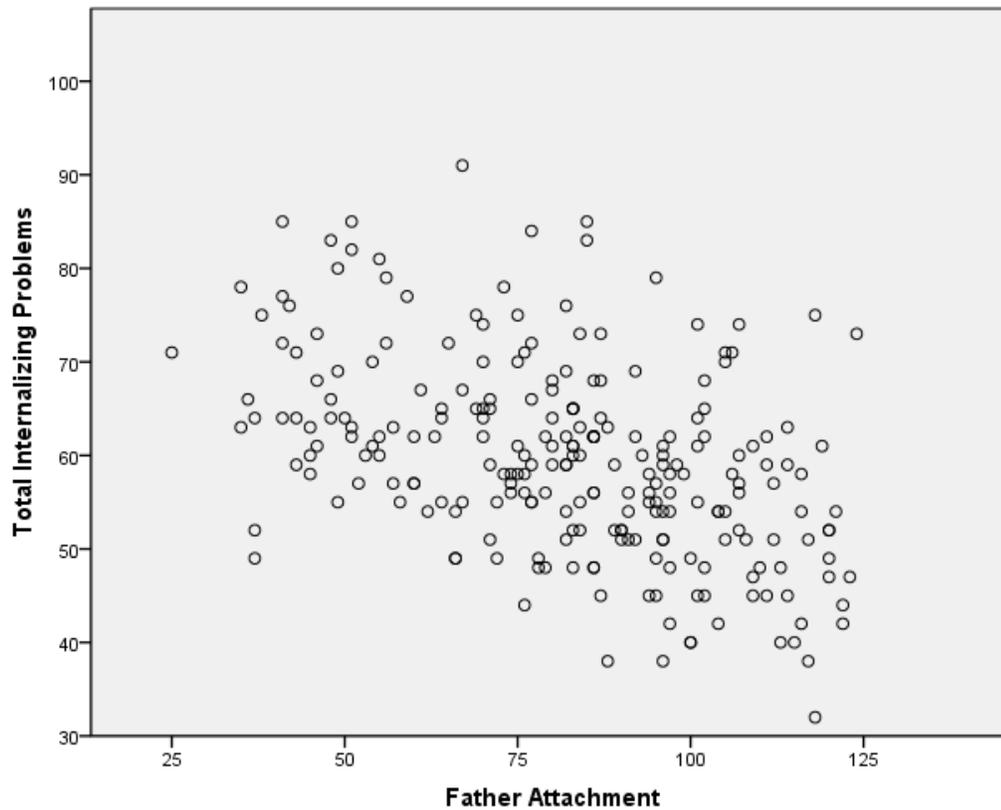


Figure 1. The relationship between Total Internalizing Problems and Father Attachment appears to be linear.

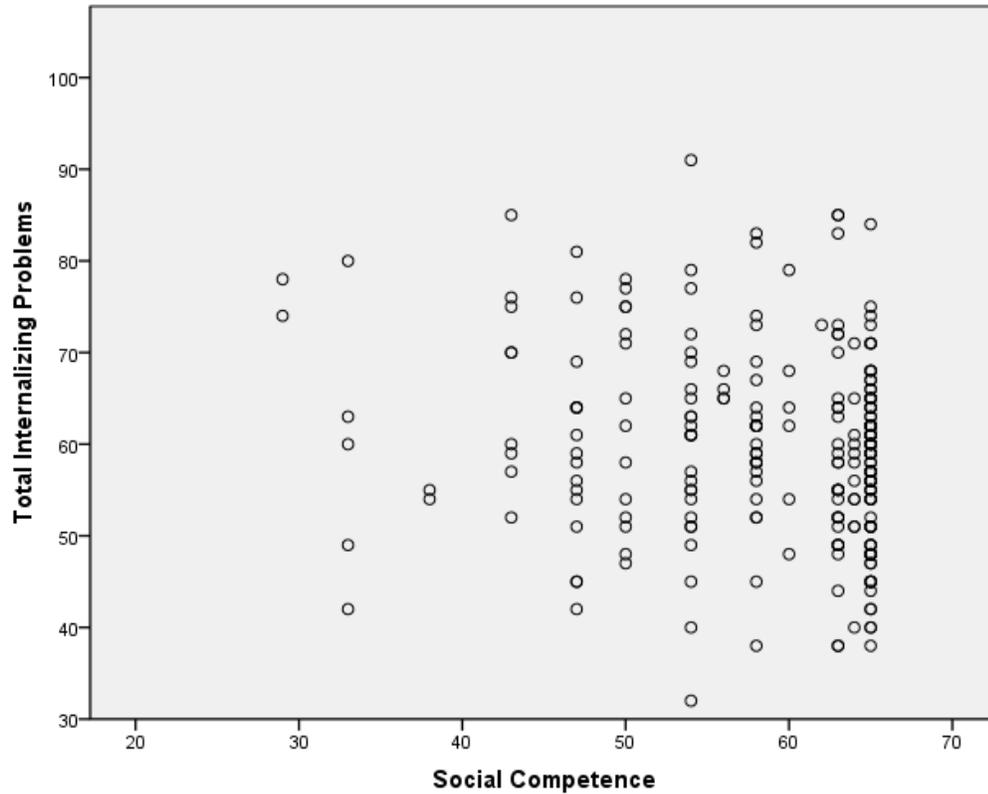


Figure 2. No curvilinear relationship was detected between Total Internalizing Problems and Social Competence. Due to the ceiling effect of Social Competence (cutoff score of 65) present, the relationship between the two variables may be underestimated by the correlation coefficient. The correlation coefficient r is an appropriate measure of the degree of association between the two variables because there is no indication of a curvilinear relationship.

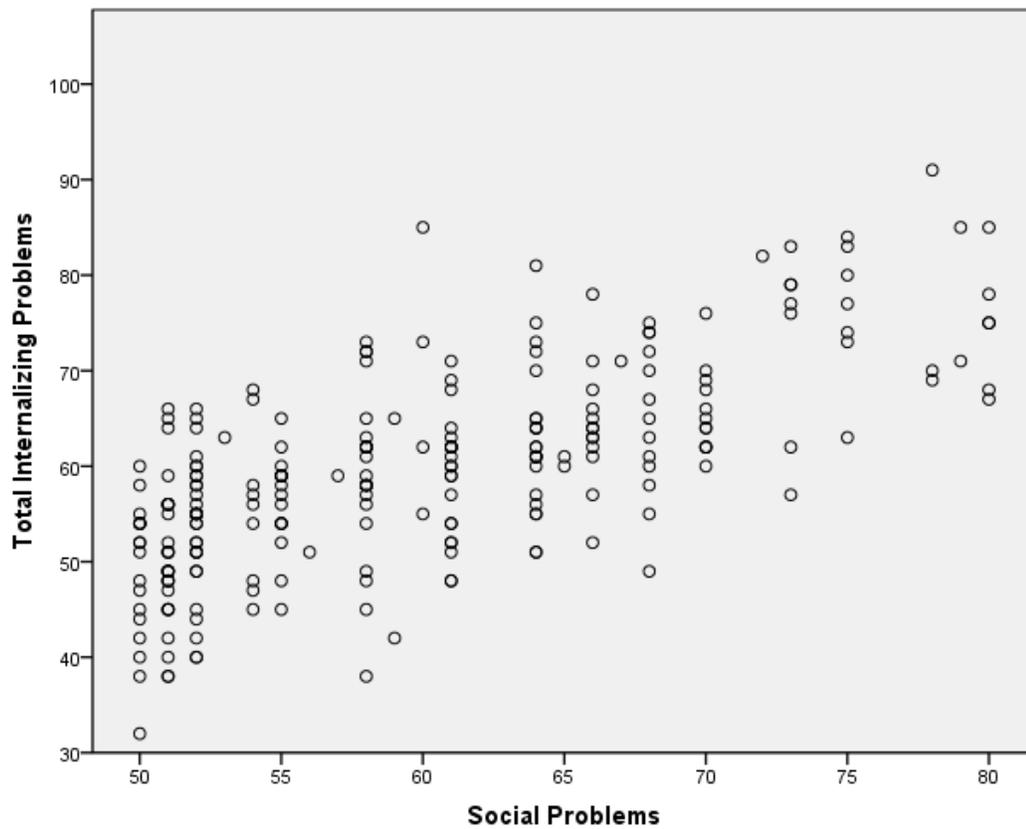


Figure 3. The relationship between Total Internalizing Problems and Social Problems appears to be linear.

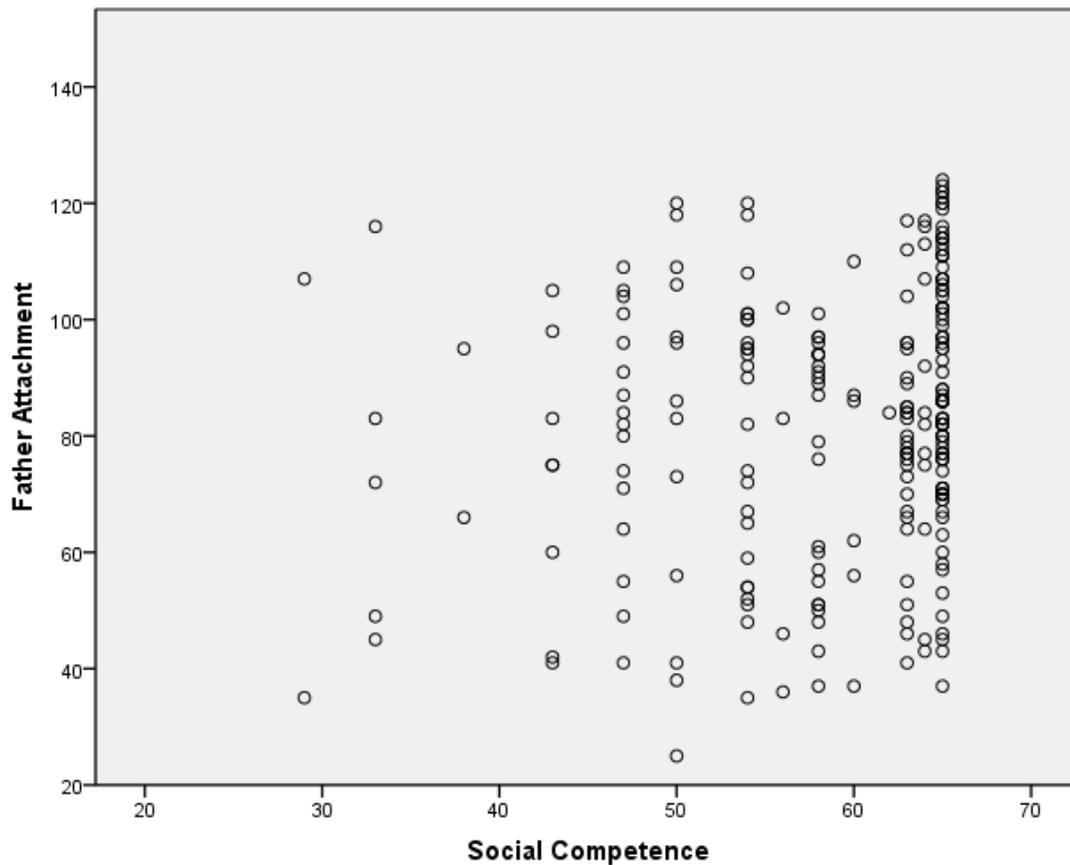


Figure 4. There appears to be no curvilinear relationship between Father Attachment and Social Competence. Due to the ceiling effect of Social Competence (cutoff score of 65), the relationship between the two variables may be underestimated by the correlation coefficient. The correlation coefficient r is an appropriate measure of the degree of association between the two variables because there does not appear to be curvilinear relationship present.

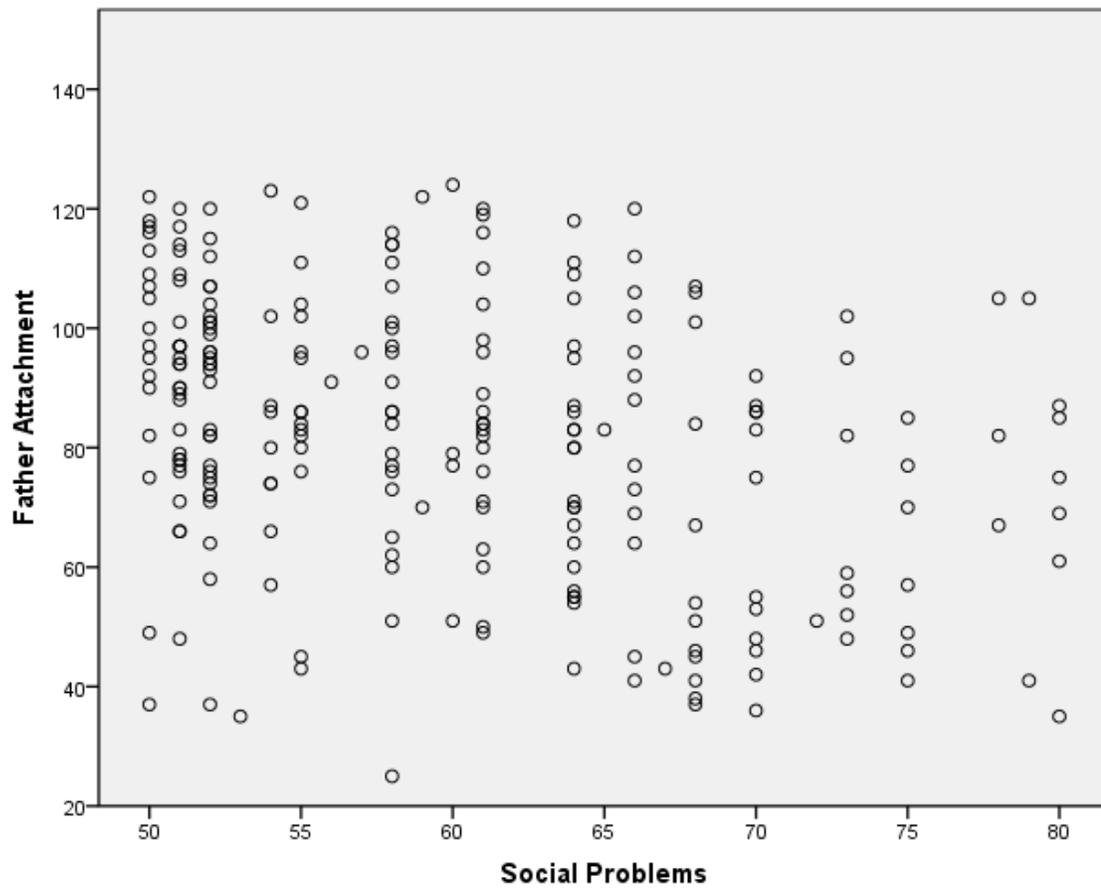


Figure 5. The relationship between Father Attachment and Social Problems appears to be linear.

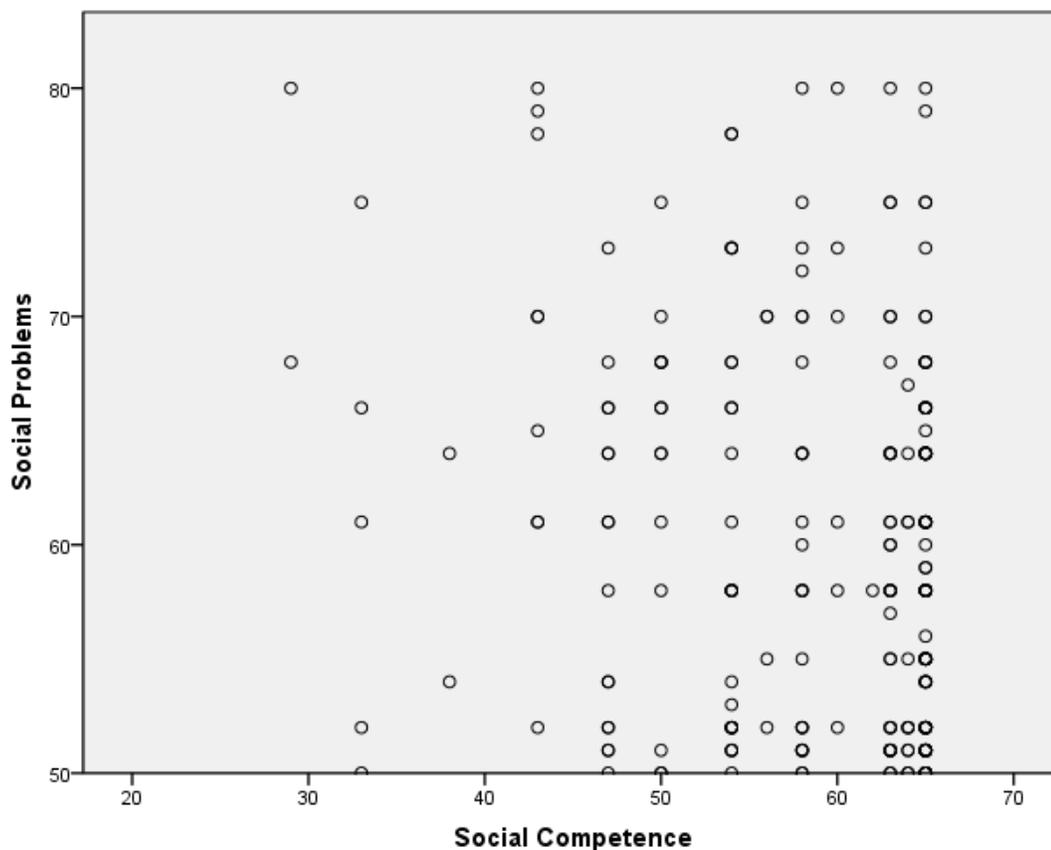


Figure 6. There appears to be no curvilinear relationship between Social Problems and Social Competence. Due to the ceiling effect of Social Competence (cutoff score of 65), the relationship between the two variables may be underestimated by the correlation coefficient. The correlation coefficient r is an appropriate measure of the degree of association between the two variables because there does not appear to be a curvilinear relationship present.

Bivariate correlations were performed among the study variables to understand the strength of their relationships (see Table 3). The relationships among the criterion variable and all of the predictor variables were statistically significant. Total Internalizing Problems was strongly and negatively associated with Father Attachment, $r(237) = -.46, p < .01$. Total Internalizing Problems were also moderately and negatively associated with Social Competence, $r(237) = -.17, p < .01$. There was also a very strong, positive

correlation between Total Internalizing Problems and Social Problems, $r(237) = .70, p < .01$.

The relationships among the predictor variables were also found to be statistically significant. Father Attachment was moderately associated with Social Competence, $r(237) = .16, p < .05$. In addition, Father Attachment was strongly and negatively associated with Social Problems, $r(237) = -.35, p < .01$. Lastly, Social Competence was moderately and negatively associated with Social Problems, $r(237) = -.20, p < .01$.

Table 3

Bivariate Correlation Among Study Variables

| | Father attachment | Social competence | Social problems | Total internalizing problems |
|------------------------------|-------------------|-------------------|-----------------|------------------------------|
| Father attachment | 1 | | | |
| Social competence | .16* | 1 | | |
| Social problems | -.35** | -.20** | 1 | |
| Total internalizing problems | -.46** | -.17** | .70** | 1 |

Note. Missing data were treated via listwise deletion. 7 participants were excluded from the analysis; $N=239$, * $p < .05$; ** $p < .01$.

Multiple Regression Analysis

A standard multiple regression was used to predict Total Internalizing Problems from Father Attachment, Social Competence, and Social Problems. The assumptions for multiple regression were checked using five different tests. First, the assumption that the regression model has the correct functional relationship between the independent variables and the dependent variable was checked via the residual scatterplot in Figure 7. The residual scatterplot demonstrated that the regression model is specified correctly, because the Lowess plot of the residuals against the fitted values appears horizontal. Second, the Q-Q plot of the distribution of the observed residuals against the normal

distribution was inspected, as demonstrated in the scatterplot Figure 8. The results displayed a straight line indicating no major deviation from normality. Hence, the assumption that the errors are normally distributed has been met.

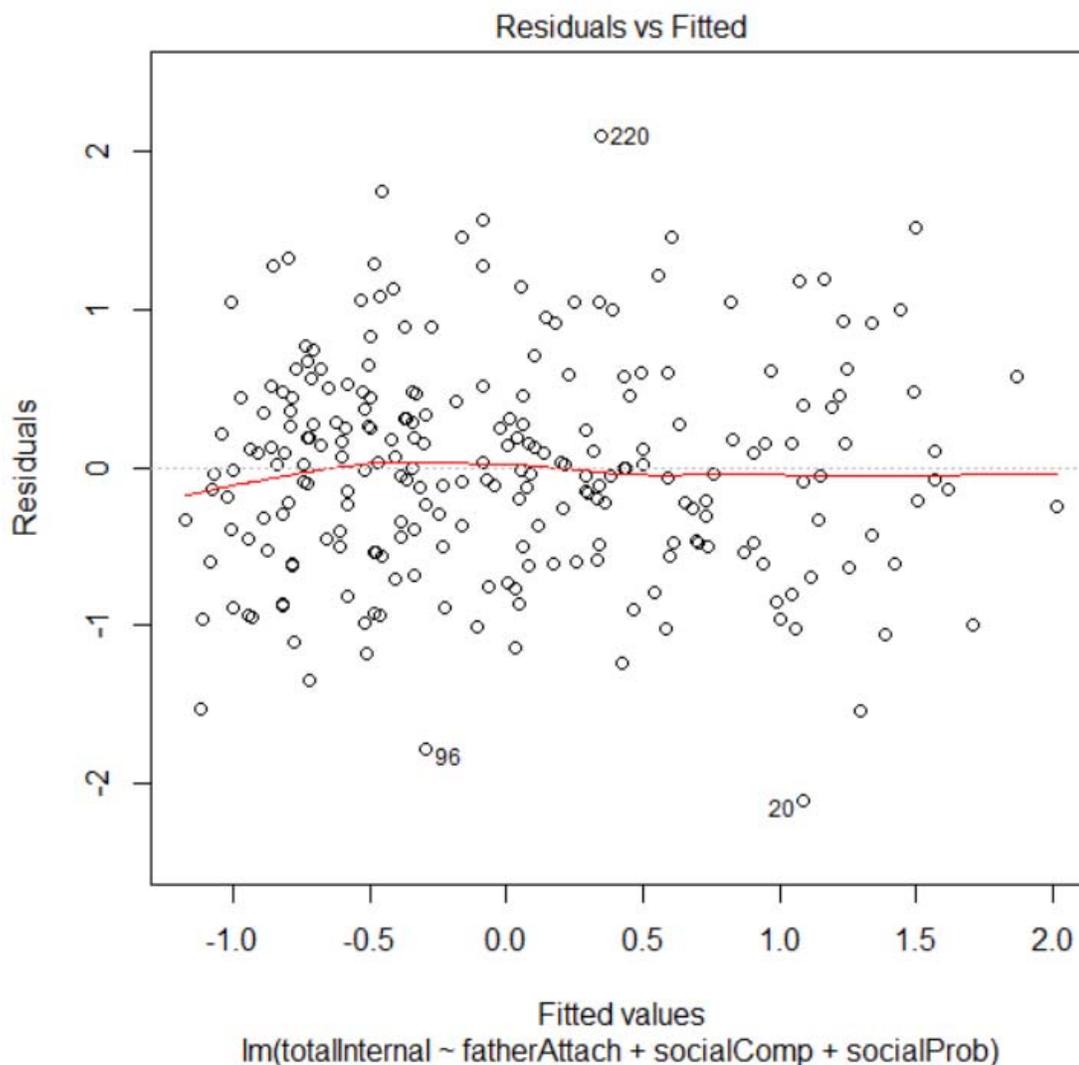


Figure 7. Check for correctly specified model. By plotting the Lowess curve of the residuals against the fitted values, the assumption that there is a correct functional relationship between the independent variables and dependent variables is tested. The scatterplot demonstrates that the regression model is specified correctly as the fitted values are horizontal.

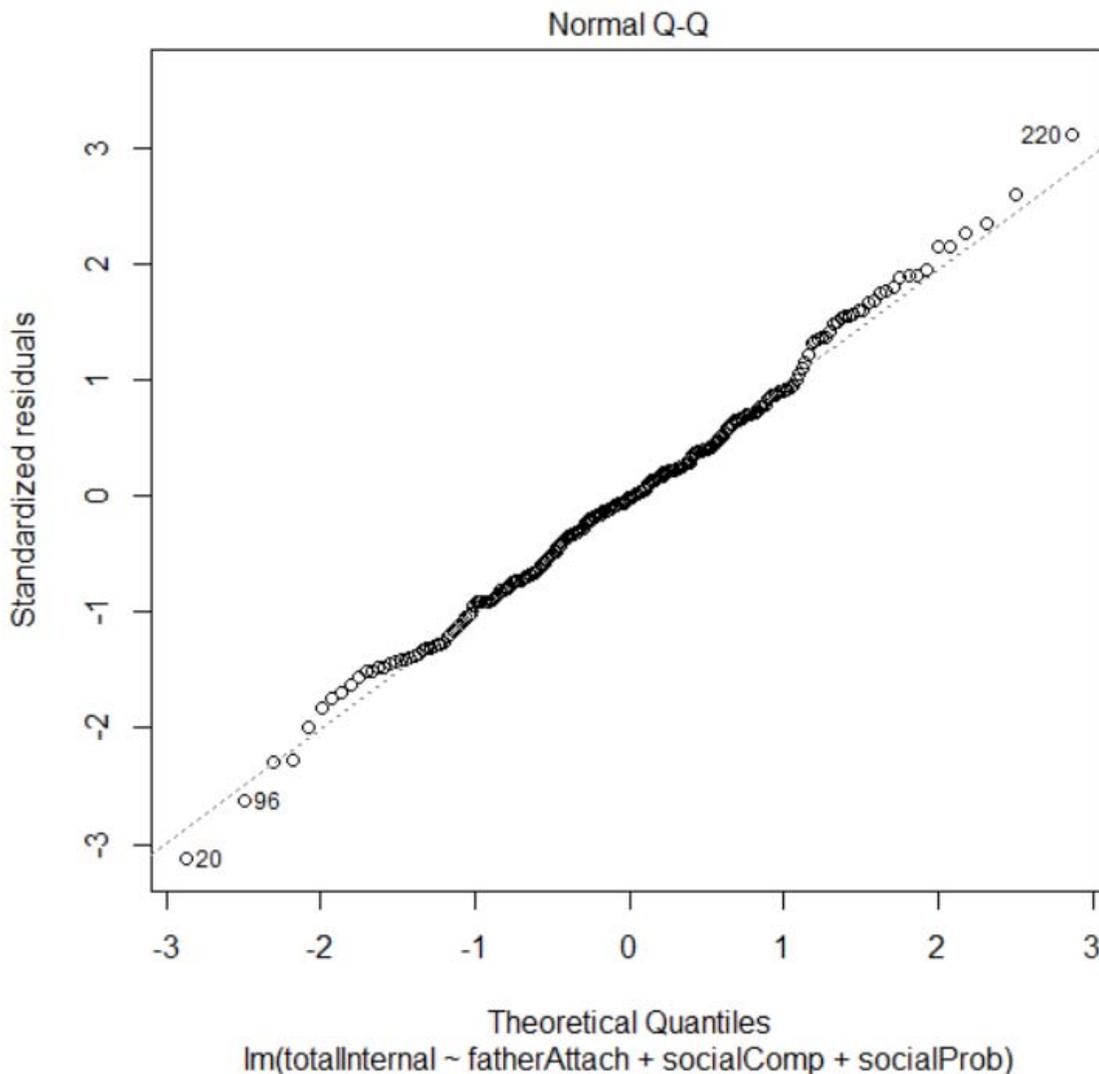


Figure 8. Normality check. This scatterplot examines the assumption that the errors are normally distributed. The Q-Q plot of the distribution of the observed residuals against the normal distribution indicates a straight line; hence, the assumption that the errors are normally distributed has been met.

Third, a check for homoscedasticity of the residuals was performed (see Figure 9).

To clarify, residuals are the differences between the obtained and predicted criterion variable scores; in other words, it is the error of prediction. If the homoscedasticity assumption were tenable, one would expect to see the points dispersed evenly about the

reference line. When examining the scatterplot in Figure 9 of the square root of the standardized residuals against the fitted values, it appears that the variability of the residuals are mostly evenly distributed, although the variability does seem to increase slightly with the fitted values. The assumption of homoscedasticity of the residuals may have been violated to a slight degree. As a result of this violation, the regression analysis is weakened, although not invalidated. Thus, the inferences about regression coefficients will need to be interpreted with caution. Fourth, a check for multivariate outliers was performed, as depicted in Figure 10. An outlier is an observation with large residuals. In other words, it is an observation whose criterion variable value is unusual, given its values on the predictor variables. An outlier may indicate a sample peculiarity or may indicate a data-entry error. By measuring the leverage of how far an observation deviated from the mean of that variable, outliers can be detected. From the scatterplot of deleted residuals versus leverage, none of the points appear to have distance or leverage; therefore, there are no suspected outliers.

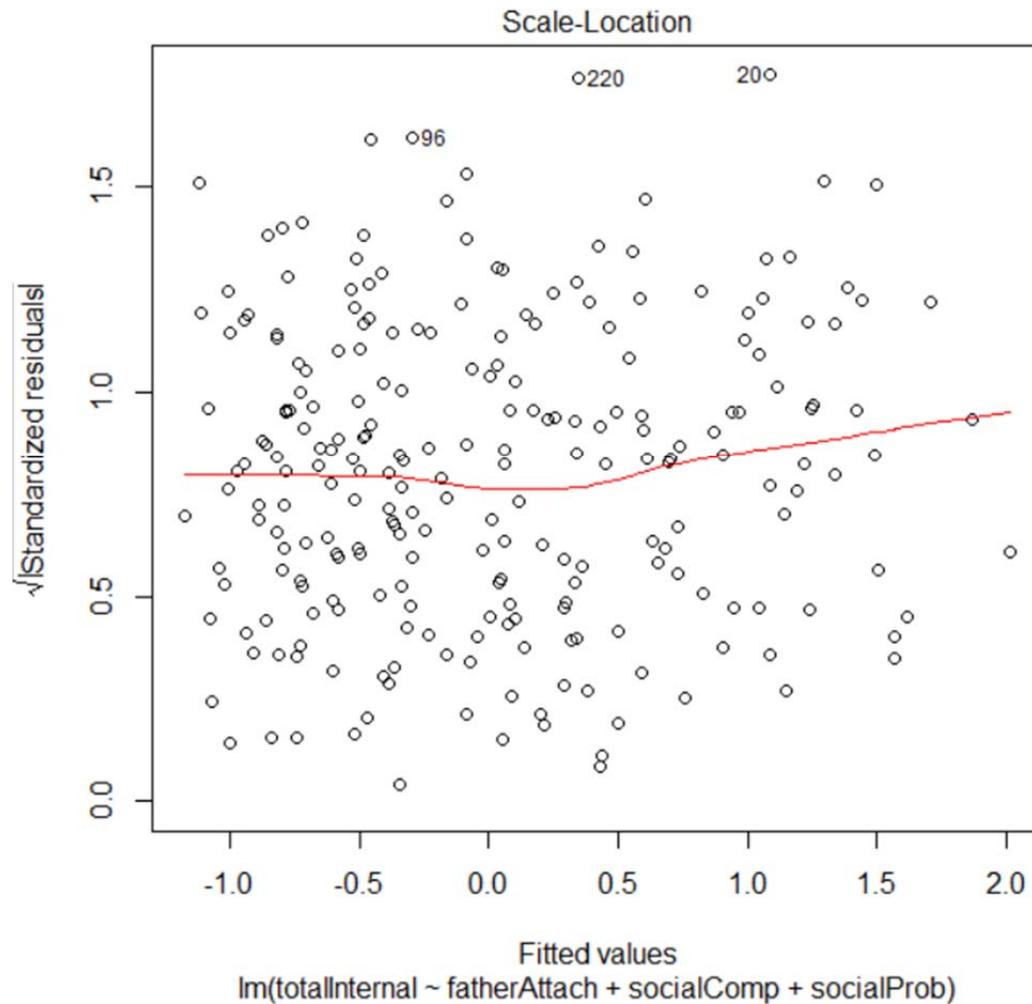


Figure 9. Homoscedasticity check. When examining the plot of the square root of the standardized residuals against the fitted values, it appears that the variability of the residuals are mostly evenly distributed, although the variability does seem to increase slightly with the fitted values. As a result, the assumption of homoscedasticity of the residuals may have been violated to a slight degree.

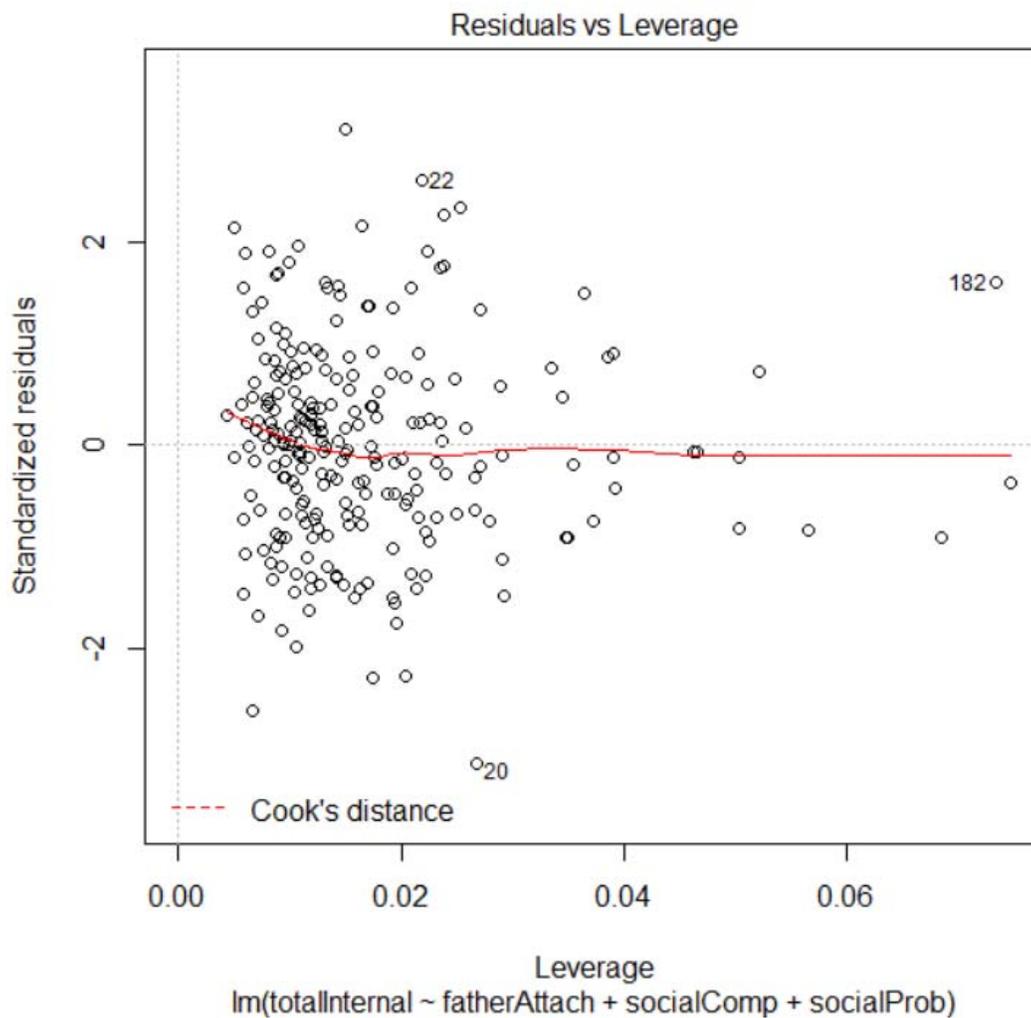


Figure 10. Multivariate outliers check. From the scatterplot of deleted residuals versus leverage, none of the points appear to have distance or leverage; therefore, there are no suspected multivariate outliers according to the Cook's distance method.

Fifth, a multicollinearity check was performed. Multicollinearity is a problem that arises when moderate to high intercorrelations ($r = .9$ and above) exist among predictor variables to be used in the regression analysis. If the predictors are highly intercorrelated, they essentially contain the same information and therefore measure the same construct. Tolerance is one way to assess for multicollinearity. Specifically, tolerance is an indicator of how much variability of the specified predictor variable is not explained by the other predictors in the model. If the values are very small (less than .10), then the multiple correlation with other variables is high, suggesting the possibility of multicollinearity. The regression coefficient results in Table 4 demonstrated that there is no evidence for multicollinearity, as the tolerance levels were very high for all three predictors. Lastly, it is important to note that the errors of observations gathered next to each other were not checked, as there was no theoretical reason to suspect that this assumption was violated because the participants were not grouped or hierarchically arranged.

Table 4

Regression Coefficient Results

| | Unstandardized coefficients | | | Standardized coefficients | | | Tolerance |
|-------------------|-----------------------------|----------------|-----------------|---------------------------|----------------|-----------------|-----------|
| | <i>b</i> | Standard error | <i>p</i> -value | β | Standard error | <i>p</i> -value | |
| (Intercepts) | 23.53 | 5.82 | <.001* | 0.00 | 0.04 | .983* | |
| Father attachment | -0.11 | 0.02 | <.001* | -0.25 | 0.05 | <.001* | 0.87 |
| Social competence | -0.01 | 0.06 | .917 | -0.01 | 0.05 | .917 | 0.95 |
| Social problems | 0.76 | 0.06 | <.001* | 0.61 | 0.05 | <.001* | 0.85 |

Note. 7 participants were excluded from the analysis; $N=239$, $*p < .001$; $R^2 = 0.545$, $adj R^2 = .539$, $F(3, 235) = 93.81$, $p < .001$.

$$\text{Total Internalizing Problems} = \beta_0 + \beta_1 \text{ Father Attachment} + \beta_2 \text{ Social Competence} + \beta_3 \text{ Social Problems.} \quad (1)$$

The data were fit to the standard regression model specified in Equation (1) above. The notations in Equation (1), β_1 , β_2 , and β_3 refer to the standardized regression coefficients. The intercept, β_0 is zero. Each standardized regression coefficient (β_1 through β_3) represents the amount of change, in standard deviation units, of Total Internalizing Problems given a one-standard-deviation change in each of the predictor variables, respectively, holding all other variables constant in the model. To explain the model, as hypothesized, Father Attachment had a moderate and significant negative relationship with Total Internalizing Problems, $\beta_1 = -.25$, $t(235)=-5.32$, $p < .001$. That is, a one standard deviation increase in Father Attachment was associated with a .25 standard deviation decrease in Total Internalizing Problems, over and above the effects of Social Competence and Social Problems on Total Internalizing Problems.

In contrast, there was a significant, positive, and high level of association between Social Problems and Total Internalizing Problems, $\beta_3 = .60$, $t(235)=12.88$, $p < .001$. That is, a one-standard-deviation increase in Social Problems was associated with a .60 standard deviation increase in Total Internalizing Problems, over and above the effects of Father Attachment and Social Competence on the dependent variable. This result was also consistent with the hypothesis that Social Problems would uniquely predict internalizing behavioral problems in adolescent girls.

The relationship between Social Competence and Total Internalizing Problems, however, was very small and non-significant once Father Attachment and Social

Problems were considered. That is, Social Competence was significantly negatively correlated with Internalizing Behavioral Problems, $r(237) = -.17, p < .01$, as discussed in the correlation results section above. However, when Father Attachment and Social Problems were added to the model, Social Competence did not add significant information to predict Total Internalizing Problems, $\beta_2 = -.01, t(235) = .917, p < .001$. Therefore, these results do not support the hypothesis that Social Competence would protect against Internalizing Behavioral Problems in adolescent girls. That is, once Social Problems and Father Attachment have been controlled for, greater Social Competence no longer significantly contributes to fewer Internalizing Behavioral Problems.

Together, Father Attachment, Social Competence and Social Problems accounted for 54.5% of the variance in Total Internalizing Problems in this sample, $adj R^2 = .539, F(3, 235) = 93.81, p < .001$. The magnitude of β_1 through β_3 provide an indication of how much variance is accounted for by each of the predictors, although this relationship is relative, not exact.

Chapter V: Discussion

In this section, the main findings will be first discussed in the form of the three hypotheses using previous research literature. Then, the research implications of the study will be presented, as well as suggestions for future research. Finally, the limitations of the study are reviewed.

Significant Findings

The first research question investigated the relationship among the perceived quality of father attachment and adolescent girls' social competence, social problems, and internalizing behavioral problems. The null hypothesis was not supported by the findings because there was a statistically significant correlation among the variables. The second research question examined how well the perceived quality of father attachment, adolescent girl's social problems, and social competence each uniquely predicted internalized behavioral problems in adolescent girls. Hypothesis 1 was supported by standard multiple regression analysis, which confirmed that the perceived quality of father attachment and social problems each uniquely predicted internalized behavioral problems in adolescent girls. However, Hypothesis 2 was not supported by the standard multiple regression results. That is, social competence did not appear to be protect against internalizing behavioral problems. The non-significant regression effect may have been spurious.

The Role of Father Attachment

The findings from this study were consistent with previous research (Brumariu & Kerns, 2010; Liu, 2006; Rosenthal & Kobak, 2010; Van Eijck et al., 2012; Williams &

Kelly, 2005) that indicated that adolescent girls who indicated having emotional problems, namely internalizing behavioral problems, were poorly attached to their father.

The results can be interpreted in two ways. One possibility is that poor paternal attachment has an influence on the development of internalizing behavioral problems in adolescent girls. That is, according to attachment theory, Bowlby (1973) emphasized that children's concerns about attachment figures' availability constitute the basis of anxiety. Based on their experimental history with caregivers, children learn to predict attachment figures' availability. If children's attempts to predict caregivers' availability fail, they respond with fear and anxiety. Further, Bowlby (1982) asserted that uncontrollable and prolonged loss, perceived or actual, increases vulnerability to depression. The lack of caregiver's availability that contributes to attachment insecurity promotes perceptions of the self as a failure; perceptions that will be carried out and further reinforced throughout subsequent losses that fuel depressive symptomology. Thus, according to Bowlby's attachment theory, the results of this study suggested that paternal attachment has a dominant effect on adolescent girls' emotional functioning. Alternatively, a second possibility is that internalizing behavioral problems in adolescent girls effect their relationship quality with their fathers. Individuals with internalizing behavioral problems have a dysfunctional cognitive style. They have the tendency to generate fearful mental representations and predictions of escalating risk and danger, and may, over time, interpret their environment as more threatening (Williams & Kelly, 2005). Thus, the effects of internalizing behavioral problems on perceived attachment relationship quality with fathers may result in more negative perceptions of the attachment relationship by the adolescent. In sum, perceived attachment relationship quality might affect internalizing

behavioral problems in adolescent girls, and in turn, internalizing behavioral problems might affect perceived attachment relationship quality, negativity. The cross-sectional nature of this study makes the directionality of this finding impossible to determine. Future studies should use a longitudinal, full recursive design to investigate this direction of effect.

This study also found that the severity of adolescent girls' social problems was negatively correlated with father attachment. Conversely, a strong father attachment was associated with adolescent girls' increased social competence. These findings resonate with previous research on the influence of father attachment on children's social development. Specifically, Lamb (1977), in an early review of studies on fathers, depicted fathers as the link between the child and the outside world. Fathers have been shown to provide knowledge and advice, and provide the child with new experiences while serving as familiar companions to the child during these experiences (Bretherton et al., 2005). Further, research investigating the impact of fathers on their children's social development suggests paternal attachment is powerful in predicting the child's problem-solving capacity (Easterbrooks & Goldberg, 1987), social competence, social efficacy, social adjustment (Liu, 2008), and interpersonal cognition in peer interaction (Zimmerman, 2004). Thus, attachment theory seems again to be the appropriate theoretical frame to interpret the results of this study. Bowlby (1979) pointed to two variables that influence an individual's later capacity to make affiliative bonds: (a) the extent to which a child's parent provides him/her with a secure base, and (b) the extent to which the parent encourages the child to explore from it. In view of the ecology of fathering, this study reaffirmed that a strong father attachment may play an especially

salient role in supporting their adolescent daughter's social development, as well as providing psychological security.

Past research on adolescent development indicated that adolescents with secure relations to parents not only have fewer depressive and anxious symptoms (Priel & Shamai, 1995) and fewer negative social problems (Barrett & Holmes, 2001), but also perceive higher levels of social support (Sarason et al., 1991), and express more positive perceptions of self-worth and social competency (Arbona & Power, 2003; Arnsden & Greenberg, 1989). Nevertheless, these studies rarely specified the relative influence of fathers on their adolescent daughter's social functioning and psychosocial adjustment. The findings from the current study challenge gender stereotypic assumptions that fathers have a relatively minor impact on their daughters' development. Attachment to fathers, as found in this study, is a powerful relationship that has the ability to negatively influence adolescent girls' emotional and social problems and positively influence their social competence.

The Role of Social Problems

Based on these findings, father–daughter teen-relationship factors appear to be important, though not the sole predictor of internalizing behavioral problems. Adolescent girls' social problems were also found, in the correlational and regression analysis, to be a very powerful variable in predicting internalizing behavioral problems. Specifically, in the regression analysis these results hold true when controlling for social competence and father attachment. The findings are consistent with the integrative peer-socialization model, which indicates that adolescent girls show more negative emotional reactions to interpersonal stress than boys, in the form of anxiety and depression (Rudolph & Rose,

2006). Specifically, studies found that adolescent girls are more likely than adolescent boys to be preoccupied with negative thoughts about their friends and to experience negative affect in their peer and family contexts (Newman et al., 2007; Rudolph & Conley, 2005). Because relationships are more central to the self-definition and identity of females, adolescent girls have a greater tendency than boys to value close relationships, to rely on relationships as a source of emotional support, and to be concerned about maintaining harmonious relationships and being evaluated positively by others (Rose, 2002). Stress or conflict in relationships was found by previous researchers to threaten the emotional well-being of adolescent girls (Benenson & Christakso, 2003; Newman et al., 2007). Thus, the results of this study reaffirm that social problems may be an especially strong risk factor for emotional distress in adolescent girls.

In addition, the findings above converge with previous research that found some personality attributes associated with social problems to be linked with negative emotions. In particular, dependency and jealousy in close relationships (symptoms associated with social problems in the YSR) have been linked to negative affect, anxiety, and depression (Blatt, Schaffer, Bers, & Quinlan, 1992; Fritz & Helgeson, 1998; Gore, Aseltine, & Colten, 1993). The present study further confirmed that adolescent girls' increased vulnerability to internalizing behavioral problems is linked to their behavior in close relationships.

The Role of Social Competence

This study also shed light on the role of adolescent girls' social competence. As anticipated, the research findings from this study indicated that adolescent girls' social competence was negatively related to social problems. That is, as adolescent girls' social

competence increased, their social problems decreased. Moreover, there was a discrepancy between the correlational and regression analysis with regard to the influence of social competence on adolescent girls' internalizing behavioral problems. Consistent with previous studies, the correlational analysis revealed that social competence protected girls against emotional difficulties such as depression and anxiety (Rose, 2002; Rudolph & Rose, 2006). However, the regression analysis suggested that social competence in adolescent girls does not provide any unique contribution for predicting internalizing behavioral problems, over and above father attachment and social problems. This unexpected finding can be explained by the confounding variables, Social Problems and Father Attachment. That is, the relationship between social competence and internalizing behavioral problems may have no direct causal connection, yet it may be wrongly inferred in the correlational analysis that it does, due to the presence of a confounding variable, such as Social Problems or Father Attachment. In the regression model where internalizing behavioral problems is regressed on social competence, it may be the case that social problems or father attachment are actually the true causal factors for internalizing behavioral problems. Ultimately, the regression analysis implies a spurious relationship between social competence and internalizing behavioral problems. A hierarchical multiple regression needs to be performed to better understand the possible spurious relationship between adolescent girls' social competence and internalizing behavioral problems.

Implications for Clinical Practice and Future Research

Findings from this study have several important implications for the treatment of adolescent girls' social and emotional problems. In general, the findings suggest that

adolescence is a critical time for girls to maintain healthy paternal and peer relationships; maintaining these relationships may foster their social and emotional well-being.

Specifically, the study provided empirical evidence that showed father attachment to have a particular connection to adolescent girls' emotional and social development.

These findings are important for mental health therapists on several levels. Specifically, when compared to mothers, fathers rarely are included by clinicians to participate in the treatment of their children's psychological problems (Phares et al., 2010). This pattern is true for single parents (e.g., separated, divorced, or never-married parents) and married or remarried parents (Phares et al., 2010). Offering father–daughter treatment in therapy may have important ramifications for the effectiveness of the therapy, as there has been empirical evidence that engaging fathers in therapy can enhance the therapeutic effectiveness of those services (Phares et al., 2010). Perhaps more educational efforts, such as highlighting the influence fathers have on their adolescent daughters' psychosocial development, could help therapy seem more appealing to fathers. In this realm of educational training, graduate programs should include more extensive training on family systems to alert therapists to the importance of father attachment on their adolescent daughters' psychosocial development.

Furthermore, findings indicated that social problems place adolescent girls in Catholic schools at risk for developing internalizing behavioral problems such as anxiety, depression, and somatic complaints, but also inhibit social competence in girls. This interaction likely has a bidirectional and transactional influence on each element; that is, social problems lead to internalizing behavioral problems, which in turn leads to more social problems. These findings are clinically significant for educators and mental health

practitioners treating adolescent girls at subclinical levels of emotional and social problems. Specifically, research affirms that more targeted prevention programs are cost effective, practical, and beneficial in the long run to help adolescent girls with subclinical problems, compared to adolescent girls with internalizing disorder (Post, Leverich, Xing, & Weiss, 2001). Notably, Post et al. (2001) identified several reasons that treatment and prevention programs for internalizing symptoms during adolescence should be a focus in practice. First, these researchers noted that internalizing symptoms are frequently untreated among adolescents. Second, Post and colleagues (2001) provided evidence that recurrent episodes of the disorder become harder to treat. Finally, early treatment of anxiety and depressive disorders may be protective against recurrent episodes later in development. Thus, the findings reaffirm the need for treatment providers to deliver services to adolescent girls at subclinical levels of emotional and social problems.

The current study raises several questions that provide direction for future research. In particular, there are many ways in which a close father–daughter relationship may help protect against emotional and social problems during childhood, such as high arousal activities and play based interactions. However, more research is needed to determine which aspects of the father–daughter relationship in adolescence may affect broad domains of behavioral adjustment. Specifically, further research is needed to understand how fathers affect vulnerability to social and emotional distress in their adolescent girls.

Moreover, the findings provide some preliminary evidence that father attachment may be particularly relevant to the emotional and social development of adolescent girls. However, additional inquiry is essential to establish if father attachment still significantly

predicts internalizing behavioral problems after controlling for the effect that mothers have on their adolescent daughters. Furthermore, involving different methods and samples will be important in future studies. Self-reports were employed in the present study. On the positive side, this allowed for a large sample and high participation rate. However, verifying these results with other methods is important. For example, assessing father attachment with an observational assessment would be useful. Replicating the findings with outside assessments of emotional adjustment, such as parent reports or clinical interviews, will be important as well. Finally, future research examining adolescent girls' social and emotional problems should focus on the physiological mechanisms underlying the effects of such problems, such as the influence of puberty and early maturing girls.

Limitations

There were four foreseeable limitations to the current study. First, the present study employed a correlational approach, making it impossible to draw conclusions on cause-effect relationships of attachment and psychopathology in adolescents. Second, the data on attachment, social problems, social competence, and symptoms of internalizing behavioral problems were retrieved from single informants—adolescents—by means of self-report measures. As a result, associations may have been elevated due to participants responding in a way that reflected a response bias rather than the construct being measured, as there were no collateral informants to confirm the reports. For example, participants may have guessed the hypothesis of the study and responded in a way that confirmed the researchers' inferences or, conversely, in a socially desirable way that made them believe they looked good. Another limitation was that participants may have

had a lack of insight into their problems, resulting in an inability to convey their experience through self-report measures. As a result, the cross-sectional design of this study created several limitations to the weight of the findings. Observational, parent-report measures, and interviews may be helpful in assessing and clarifying the process of father attachment and its correlates in future research.

Lastly, the sample was retrieved from two Catholic private schools, which represents a small cross section of the Canadian population. One school was located in a higher socioeconomic area than the other school. The majority of the participants resided in two parent households and self-identified as Caucasian. Thus, the results of this study cannot be generalized to all adolescent girls, but rather only to Caucasian adolescent girls who attend a religiously affiliated private school in Canada. Future studies should employ a longitudinal design that involves multiple measures over an extended period of time with broader sampling.

Conclusions

By understanding the dynamic interaction among father attachment, social problems, social competence, and internalizing behavioral problems, interventions can be targeted toward adolescent girls' difficulties. This research offers greater understanding of the role fathers play in their adolescent daughters' lives and the influences fathers have on their daughter's social and emotional development from the perspective of Canadian Catholic adolescent girls' self-reports. The current study adds to the limited existing literature on father–daughter attachment. However, more research is needed to fully understand fatherhood as a construct and to make the role of fathers one that is publically visible and highly appreciated.

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Appendix A
Father Attachment (IPPA-R)

INVENTORY OF PARENT AND PEER ATTACHMENT (IPPA-R)

Authors:

Gay C. Armsden, Ph.D. and Mark T. Greenberg, Ph.D.

This part asks about your feelings about your father, or the man who has acted as your father. If you have more than one person acting as your father (e.g. natural and step-father) answer the question for the one you feel has most influenced you.

| | Almost never or never true | Not very often true | Sometimes true | Often true | Almost always or always true |
|--|-------------------------------------|------------------------------|-------------------|---------------|--|
| 1. My father respects my feelings. | 1 | 2 | 3 | 4 | 5 |
| 2. I feel my father does a good job as my father. | 1 | 2 | 3 | 4 | 5 |
| 3. I wish I had a different father. | 1 | 2 | 3 | 4 | 5 |
| 4. My father accepts me as I am. | 1 | 2 | 3 | 4 | 5 |
| 5. I like to get my father's point of view on things I'm concerned about. | 1 | 2 | 3 | 4 | 5 |
| 6. I feel it's no use letting my feelings show around my father. | 1 | 2 | 3 | 4 | 5 |
| 7. My father can tell when I'm upset about something. | 1 | 2 | 3 | 4 | 5 |
| 8. Talking over my problems with my father makes me feel ashamed or foolish. | 1 | 2 | 3 | 4 | 5 |
| 9. My father expects too much from me. | 1 | 2 | 3 | 4 | 5 |
| 10. I get upset easily around my father. | 1 | 2 | 3 | 4 | 5 |
| 11. I get upset a lot more than my father knows about. | 1 | 2 | 3 | 4 | 5 |
| 12. When we discuss things, my father cares about my point of view. | 1 | 2 | 3 | 4 | 5 |
| 13. My father trusts my judgment. | 1 | 2 | 3 | 4 | 5 |
| 14. My father has his own problems, so I don't bother him with mine. | 1 | 2 | 3 | 4 | 5 |
| 15. My father helps me to understand myself better. | 1 | 2 | 3 | 4 | 5 |
| 16. I tell my father about my problems and troubles | 1 | 2 | 3 | 4 | 5 |
| 17. I feel angry with my father | 1 | 2 | 3 | 4 | 5 |
| 18. I don't get much attention from my father. | 1 | 2 | 3 | 4 | 5 |
| 19. My father helps me to talk about my difficulties. | 1 | 2 | 3 | 4 | 5 |
| 20. My father understands me. | 1 | 2 | 3 | 4 | 5 |
| 21. When I am angry about something, my father tries to be understanding. | 1 | 2 | 3 | 4 | 5 |
| 22. I trust my father. | 1 | 2 | 3 | 4 | 5 |
| 23. My father doesn't understand what I'm going through these days. | 1 | 2 | 3 | 4 | 5 |
| 24. I can count on my father when I need to get something off my chest. | 1 | 2 | 3 | 4 | 5 |
| 25. If my father knows something is bothering me, he asks me about it. | 1 | 2 | 3 | 4 | 5 |

Permission for use of IPPA-R

Dear Ms. Sandhu,

You have my permission to publish the father attachment section of the IPPA in your dissertation appendix. I would be pleased to receive a copy of your findings.

Thank you for your email.

--Gay Armsden