RELATIONS BETWEEN SIBLING RELATIONSHIP QUALITY AND

ROMANTIC COMPETENCE AMONG YOUNG ADULTS

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A primary task of adolescence and young adulthood is to form and develop healthy romantic relationships. While the importance of sibling and romantic relationships have been examined separately, only recently have researchers begun to explore links between the two. The purpose of the present study was to investigate the connection between romantic competence and sibling relationships, especially sibling warmth and sibling conflict, as well as the role of sibling gender constellation in college-aged young adults. This study aimed to examine (a) whether there is an association between sibling relationship quality, such as sibling warmth and sibling conflict, and perceived romantic competence, and (b) the role of sibling gender constellation on the relationship between sibling relationship quality (sibling warmth and sibling conflict) and perceived romantic competence among undergraduate students. Correlation analyses indicated there was no statistically significant correlation between sibling warmth and perceived romantic competence ($p > .05$), whereas sibling conflict was statistically negative correlated with perceived romantic competence ($p < .01$). While sibling gender constellation did not have an interaction effect with sibling conflict on perceived romantic competence, which means sibling gender constellation did not have a moderating effect on the relationship between sibling conflict and perceived romantic competence. Limitations and applications of the present study were also discussed.

ACKNOWLEDGEMENTS

This dissertation is dedicated to adolescents and young adults in whom this research is intended to help both in the areas of sibling relationship quality and romantic competence. I hope that educators and families will better understand how to create the environment necessary for positive sibling relationships, so that the quality of sibling relationships improves, and the intimacy that flows through this positive, supportive system will offer the benefits of learning and development in other relationships.

I am so thankful for all my professors who have helped me throughout this process, mainly my committee chair, Dr. Rebecca J. Glover and Dr. Arminta Jacobson, have worked diligently on my behalf to help me through this process. I know both of you made sacrifices with your time to help bring out the best in my abilities that I might present something of worth to others. I also appreciate all the help I have received from my other committee members, Dr. Wendy Middlemiss, and Dr. Mei Chang, and Dr. Peggy Ceballos who helped me get started and refined my ideas.

Finally, I would also like to dedicate this dissertation to my father in the heaven, Fengjiang Sun, my dear mom, Qinxia Liu, and my brother, lijun Sun. Through great sacrifices of my time, efforts, and financial difficulties, I hope you all understand and benefit from the things I have learned and achieved. Without my parents' support, I am not able to be at this significant moment in my life. I hope they are proud of me for what I did so far, and I am so lucky and proud to be your daughter. I hope my brother and I can benefit in the way we spend our time together in the past, now, and in the future, that it might be more full, rewarding, and that we might increase our level of intimacy and be a stronger support to each other through life challenges. I am so grateful you are my brother.

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CHAPTER 1

INTRODUCTION

Research shows that 77.9% of children in the United States grow up with at least one sibling (Kreider & Ellis, 2011), and empirical studies illustrate that sibling relationships are special because they provide a critical interpersonal context for an individual's development and adjustment (Conger, Conger, & Martin, 2010; Cox, 2010; McHale, Updegraff, & Whiteman, 2012). Siblings are often intimate with each other's behaviors and thoughts, developing as individuals through similar family experiences and contexts (Cox, 2010; Recchia & Howe, 2009; Stocker, 2000). The frequent contact and companionship of siblings can develop relationships that include intense intimacy and conflict (Bevan, Stetzenbach, Batson, & Bullo, 2006; Dunn, 1983; Noller, 2005; Punch, 2008). Living with siblings also provides frequent opportunities and contexts to interact with individuals with different personalities, ages, and/or gender (Lanthier, 2007; McIntosh & Punch, 2009; Milevsky, Smoot, Leh, & Ruppe, 2005). Therefore, the sibling relationship has been described as one of the most critical and long-lasting bonds among family members (Cox, 2010; McGuire & Shanahan, 2010; McHale et al., 2012).

Although it is estimated that children spend more time interacting with siblings than with anyone else, including their parents (Buist, Deković, & Prinzie, 2013; Buist, Deković, Meese, & van Aken, 2002; McHale, Bissell, & Kim, 2009), it is the least-studied relationship within familial bonds when compared to parent-child relationships, peer relationships, and friendships (Dehart, Pelham, Fiedorowicz, Carvallo, & Gabriel, 2011; Dirks, Persram, Recchia, & Howe, 2015; Stocker, Burwell, & Briggs, 2002). Sibling relationships have unique developmental functions in that they are among the most enduring relationships and are both like and unlike parent-child and peer relationships (Cox, 2010; Dirks et al., 2015; Kochendorfer & Kerns, 2017).

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Like the relationship with parents, sibling relationships often involve strong emotional ties. However, unlike the relationship with parents, sibling relationships have age gaps that resemble those among their peers. Sibling relationships are generally described as multifaceted bonds (Lanthier, 2007; McGuire & Shanahan, 2010; McHale, Whiteman, Kim, & Crouter, 2007; Robertson, Shepherd, & Goedeke, 2014). The two key most common dimensions of sibling interactions are positivity (warmth and affection) and negativity (conflict and aggression) (Lanthier, 2007; McHale et al., 2007; McIntosh & Punch, 2009).

A primary task of adolescents and young adults is to form and develop healthy romantic relationships, which could promote and fulfill individuals' well-being, whereas the lack of healthy romantic relationships may lead adolescents and young adults to encounter various physical, cognitive, social, and emotional difficulties (Collins, 2003; Collins, Welsh, & Furman, 2009; Fadjukoff, Pulkkinen, & Kokko, 2005; Giordano, Manning, & Longmore, 2006). A critical component of healthy functioning in adolescence and young adulthood is having competence and confidence about their ability to develop healthy and satisfying relationships (Davila, Stroud, Miller, & Steinberg, 2007). Therefore, the development and correlated components of perceived competence in romantic relationships require researchers conduct empirical investigations concentrating on the significance of parental influences on perceived romantic competence in adolescence (Cassidy, 2008; Conger, Cui, Bryant, & Elder, 2001; Crockett & Randall, 2006; Cui, Conger, Bryant, & Elder, 2002; Feeney, 2008). Only recently have researchers started to investigate the connections between sibling relationships and romantic relationships.

The present study extended the research on sibling relationships by seeking connections between sibling experiences and romantic competence in early adulthood. In general, romantic relationships start in adolescence and continue to develop throughout adulthood (Collins et al.,

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2009). Links between peer and sibling relationships in childhood and adolescence have been well-documented (Kim, McHale, Osgood, & Crouter, 2006; Larson & Verma, 1999; Lockwood, Kitzmann, & Cohen, 2001), but little is known about connections between romantic and sibling relationships, especially during young adulthood (Crockett & Randall, 2006; Robertson et al., 2014). However, similarities between these two relationships give reasons to anticipate that the features of sibling relationships may provide a foundation for understanding the development and processes of romantic relationships (Robertson et al., 2014).

CHAPTER 2

REVIEW OF THE LITERATURE

Researchers have studied the influence of sibling relationships on the individual's social,

emotional, and cognitive development (Brumbaugh, 2017; Buhrmester & Furman, 1990; Buist et

al., 2013; Conger et al., 2010; Dunn, 1983; Dunn, 2007; East, 2009; McGuire & Shanahan, 2010;

McHale et al., 2012), as well as their connections to parental relationships (Cox, 2010; Dehart et

al., 2011), parent-child relationships (Cox, 2010; Dehart et al., 2011; Kochendorfer & Kerns,

2017), peer relationships (Brumbaugh, 2017; Dehart et al., 2015), and friendships (Brumbaugh,

2017; Cui, Conger, Bryant, & Elder, 2002; Stocker et al., 2002; Kochendorfer & Kerns, 2017).

In addition, previous research has also investigated the influence of romantic

relationships on an individual's development and the connections to family factors such as

parental relationships and parent-child attachment (Davila, et al., 2017; Doherty & Feeney, 2004;

Feeney, 2008; Kochendorfer & Kerns, 2017; Rauer & Volling, 2007). However, only in the last

few years have the links between sibling relationships and romantic relationships drawn

attention. The following sections will illustrate empirical findings about sibling relationships,

heterosexual relationships, and the links between them. In addition, sibling gender constellation

and perceived romantic competence will be discussed afterward.

Sibling Relationships

Although adolescence and emerging adulthood are often regarded as the developmental

stages wherein individuals turn their attention from their families to other social contexts

(Collins et al., 2009; Drysdale & Rye, 2009), family experiences continue to be important and

relevant to adolescents' and young adults' development and well-being. Siblings, especially,

often remain companions, models, and sources of social support through the adolescents'

development stages, and they bring adolescents opportunities and experiences to practice and

enhance interacting skills with siblings of different genders, ages, and personalities (Lanthier,

2007; McHale et al., 2012; McIntosh & Punch, 2009).

In addition, sibling's social support may be particularly beneficial for adolescents and

young adults whose primary developmental assignments are to develop healthy intimate

relationships with individuals away from their families (Conger & Little, 2010; Dehart et al.,

2011; Erikson, 1968; Kochendorfer & Kerns, 2017). Siblings are often regarded as the first peers

with whom children interact. Thus, siblings may have great influence on establishing and

promoting positive and supportive relationships with peers, such as providing each other social

contexts in which to learn interpersonal skills and practice perspective-taking (Lanthier, 2007;

Lewis, 2005; Scharf & Mayseless, 2001; Scharf, Shulman, & Avigad-Spitz, 2005). Intimate

sibling relationships provide an environment for individuals to practice increasingly complex

social interactions and may have positive effects on the development of a sibling's other

relationships beyond the family (Lockwood et al., 2001).

Sibling experiences and interactions are critical for children as they develop skills to help

fulfill their social, emotional, and cognitive developmental needs (McGuire & Shanahan, 2010;

Yeh & Lemper, 2004). The strength and long-lasting features of sibling ties make sibling

relationships especially powerful. Empirical research has documented the effects of sibling

relationships in various domains such as academic engagement (Buist & Vermande, 2014),

problematic behaviors (Buist & Vermande, 2014; Slomkowski et al., 2009; Slomkowski, Rende,

Novak, Lloyd-Richardson. & Niaura, 2005), friendship (Sherman, Lansford, & Volling, 2006;

Stocker, 2000), and peer relationships (Stocker, 2000; Stocker et al., 2002). A majority of sibling

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research is concentrated in childhood, but sibling relationships are the most durable relationships for most individuals, and their impact is evident across an individual's lifespan (McGuire & Shanahan, 2010; Waldinger, Vaillant, & Orav, 2007). Therefore, the lifelong impact of siblings is important for researchers to understand, especial during young adulthood.

Romantic Relationships

Just as sibling relationships are regarded as essential components of child and adolescent development (McHale et al., 2012), romantic relationships are also viewed as a primary element of adolescents' and young adults' lives in all societies. Romantic relationships, which are characterized by physical and emotional affections of intimacy, compassion, love, desire, and reciprocity, refer to mutual commitment with continuous physical and emotional interactions (Feeney, 2008; Giordano et al., 2006). Compared to other relationships, romantic relationships often start during early to late adolescence, have a distinctive intensity, and are commonly characterized by expressions of love and passion with anticipated ongoing physical intimacy (Collins et al., 2009; Furman & Collins, 2009; Giordano et al., 2006).

Another term that helps in the understanding of romantic relationships is romantic experiences, which refers to a large set of activities and cognitions associated with behavioral, cognitive, and emotional situations with or without real experiences with an intimate partner. Collins et al. (2009) found that 36% of 13-year-olds, 53% of 15-year-olds, and 70% of 17-year-olds reported that they were in a romantic relationship in the past year. In late adolescence, large parts of an individual's life involve dating (Drysdale & Rye, 2009). Not only are romantic relationships popular and universal, but they are also regarded as critical to an individual's self-

value and social competence (Chen & French, 2008; Collins, 2003; Connolly, Furman, &

Konarski, 2000; Erikson, 1968; Furman & Collins, 2009).

Romantic relationships can also take large amounts of an adolescent's or a young adult's

time at the expense of other social activities. Starting in early adolescence, attracted by opposite-

gender peers, adolescents and young adults spend an increasing amount of time in mixed-gender

groups (Kochendorfer & Kerns, 2017; Richards, Crowe, Larson, & Swarr, 1998; Watzlawik &

Clodius, 2011). Gradually, intimate romantic partners, instead of family members and significant

others, become the primary figures in adolescents' and young adults' lives as they spend more

time interacting with their intimate partners than with parents, siblings, and friends (Bevan,

2010; Kochendorfer & Kerns, 2017).

Moreover, the power negotiation process may be especially critical in romantic

relationships of adolescents as they explore and balance the power dynamics within romantic

relationships before eventually developing their personal patterns of intimate behaviors and roles

(Campione-Barr, 2017; McGuirk & Pettijohn, 2008; Riggs, Cusimano, & Benson, 2011).

However, unbalanced power within a romantic relationship may reveal unhealthy development

in a relationship (Campione-Barr, 2017; Collins, 2003; Felmlee, 1994; Davila et al., 2017).

Therefore, the balance of power may further influence the stability of the romantic relationship.

By allowing adolescents and young adults to establish and promote power negotiation skills,

previous experiences and interactions with a sibling may provide a fundamental context for later

romantic relationship development (Campione-Barr, 2017; Lindell & Campione-Barr, 2017).

Emerging adulthood is often a period of exploration and practice, and many people

during this period have a series of different romantic relationships. As relationship experiences

accumulate, patterned styles of interacting with romantic partners may emerge or change

(Seiffge-Krenke, 2003; Seiffge-Krenke & Connolly, 2010). These developmental processes are complicated and multiple in nature. Over the course of time, a romantic relationship may take on new characteristics, acquire new meaning, and serve new functions (Furman & Collins, 2009; Seiffge-Krenke, 2003). However, empirical studies have focused on romantic relationships in adolescence, and little is known about the influence of sibling relationships on the development of romantic relationships during young adulthood.

<div align="center">Sibling and Romantic Relationships Comparison and Contrast</div>

Empirical research has investigated the associations between sibling experiences and a series of adolescent and young adult developmental outcomes (McHale et al., 2012; Scharf et al., 2005; Robertson et al., 2014), but little is known about the role of sibling experiences and relationships in adolescents' and young adults' romantic development. Research has investigated the connection between sibling dynamics and peer relationships (Updegraff, McHale, & Crouter, 2002), as well as this influence of siblings on risky sexual behaviors (McHale et al., 2009), showing the influence of sibling experiences and relationships in social contexts outside the family. Most research on the effects of family experiences has focused on the significant influence of parents on adolescents' behaviors and performance within their current or anticipated romantic relationships (Conger et al., 2001; Crokett & Randall, 2006).

Only two recent studies identified connections between adolescents' sibling experiences and romantic relationships in areas such as intimacy, conflict, control, and romantic competence (Doughty, Lam, Stanik, & McHale, 2015; Doughty, McHale, & Feinberg, 2015), proposing that siblings may influence an adolescent's romantic relationships. In fact, these findings are consistent with other research findings that sibling relationships are critical for the development

of secure and healthy attachments (Caspers, Yucuis, Troutman, Arndt, & Langbehn, 2007) and that some interpersonal skills acquired through sibling interactions and experiences—including perspective-taking, emotion regulation, and conflict resolution—are significantly important for developing and maintaining healthy relationships (Lockwood et al., 2001). Therefore, it is essential to identify the similarities and differences between sibling relationships and romantic relationships in order to have a better understanding of the links between these two types of relationships.

Based on research, sibling relationships have a number of similarities with romantic relationships, including their omnipresence and gender dynamics as well as their emotional tie and intensity, giving reason to assume that sibling experiences and romantic relationships may be closely associated. The first common characteristic employed in both sibling and romantic relationships in the lives of adolescents and young adults is the centrality of the other partner. Sibling relationships are often the first peer-like relationship to which children are exposed and may be critical in practicing and promoting skills for later development of secure romantic relationships (Kochendorfer & Kerns, 2017; Scharf & Mayseless, 2001).

Another key feature shared by both sibling and romantic relationships is the strength of emotional ties, either positive or negative, that these relationships create. Compared to friendships, sibling relationships are compulsory in nature. In general, siblings, especially close-in-age siblings, are able to communicate with and read each other in cohort-specific ways as they develop into maturity and face developmental challenges and difficulties in similar social environments (Caspers et al., 2007; McHale et al., 2012; Walker, Allen, & Connidis, 2005; Watzlawik & Clodius, 2011). These interpersonal skills developed through sibling interactions could be applied to eventual romantic relationships developed later.

Moreover, sibling intimacy can be developed in the processes of nurturing and caregiving between siblings; sibling relationships have a great influence on adolescents' and young adults' development of social skills and competence (Dehart et al., 2011; Lewis, 2005). Sibling dynamics with healthy and mutual intimacy have positive impacts on the development of other relationships later on, benefiting the individual's social skills and capacity for intimacy gained through sibling exchanges (Dehart et al., 2011; Lockwood et al., 2001). Through extending and enhancing the nature of the internalized social environments and expectations, siblings may have an influence on the development and quality of each other's romantic relationships.

A characteristic of sibling relationships that differs from the parent-child relationship but is similar to romantic relationships is role structure, which often illustrates the power dynamics within a relationship (Watzlawik & Clodius, 2011). Sibling relationships can be egalitarian, in which siblings are playmates and companions with equal power, or hierarchical. with one or the other trying to be dominant (Campione-Barr, 2017; Lindell & Campione-Barr, 2017). It is an ongoing process of power negotiation since the power balances and dynamics between siblings change over time, in particular when age differences are not prominent and influential for the development of siblings in adolescence and adulthood (East, 2009; Wheeler et al., 2016).

Dealing with and practicing consistent power negotiations with siblings in the family context may provide foundational environments for their romantic relationships later on since power negotiation and emotional control happen between romantic partners. Similar to sibling relationships, the structure of romantic relationships can be either egalitarian or hierarchical since power negotiation and control are shared between intimate partners (Collins et al., 2009; Rauer & Volling, 2007). As females gain as much power as males in modern society, youth of both sexes may develop more equitable romantic relationships with shared role structures and

balanced power dynamics (Campione-Barr, 2017; Lindell & Campione-Barr, 2017). Within romantic relationships, each intimate partner's social skills and competence may be of critical importance in helping either speak up about their needs and boundaries while keeping a power balance that satisfies both partners.

Meanwhile, a connection has been identified between conflict resolution styles and strategies of siblings and those utilized by romantic partners (Bevan, 2010; Reese-Weber & Bartle-Haring, 1998; Reese-Weber & Kahn, 2005). Effective conflict resolution skills are promoted through repeated experiences of conflict and conflict resolution between siblings, which may help adolescents and young adults successfully deal with conflict in later romantic relationships (Bedford, Volling, & Avioli, 2000). These research findings are consistent with Reese-Weber and Kahn's (2005) work as well, which indicates that conflict resolution styles and strategies developed through sibling experiences are also effective in dealing with conflicts in their romantic relationships later on. Sibling conflict may also help youth develop close attachments with romantic partners (Creasey, 2002; Updegraff et al., 2002). Thus, individuals who experience sibling conflict may develop more positive romantic relationships than those without sibling conflict experiences. The complicated findings in sibling conflict indicates the critical but intricate role sibling relationships play in adolescents' socio-emotional development and well-being.

Although connections between sibling and romantic conflict resolution styles and skills are not entirely consistent (Reese-Weber & Bartle-Haring 1998), sibling conflict seems to have a negative influence on individuals' developmental outcomes such as emotional and social skills (Buist & Vermande, 2014). Consistent with both attachment and social learning perspectives,

these research findings imply that early relational styles and experiences can carry over to the development of other later relationships.

In general, a positive correlation between other types of attachment relationships, such as early parent-child, peer relationships, and later romantic relationships has been found in previous research (Crockett & Randall, 2006), but the findings on the connection between sibling experiences and romantic relationships are conflicting across recent studies. For instance, Robertson et al. (2014) reported there is no correlational evidence to support a link between sibling experiences and romantic relationship quality; however, another study found there was a connection between some characteristics of sibling relationships and romantic relationship qualities (Doughty et al., 2015). For instance, sibling intimacy has a positive effect on romantic intimacy, while sibling conflict has a negative influence on romantic intimacy for girls but not for boys (Doughty et al., 2015). Therefore, it is important to investigate the links between sibling relationships and romantic relationships in the current study.

<div align="center">Sibling Gender Constellation</div>

As adolescents' developmental environments extend to a broader social context and they are more interested in interacting with mixed-gender peers, their interpersonal and communication skills are used in building romantic relationships (Lewis, 2005). Romantic relationships are assumed to serve a developmental function for adolescents similar to the function of sibling relationships for children in that they provide opportunities and experiences for adolescents to construct and enhance their capacity for physical and emotional intimacy and attachment (Seiffge-Krenke & Connolly, 2010). Therefore, the quality of romantic relationships

in adolescence is significantly important because of their close association with later romantic experiences and qualities in early adulthood (Furman & Collins, 2009).

Empirical research indicated the interaction skills acquired through positive sibling relationship experiences may help promote the potential for interpersonal skills and positive peer interactions and experiences, i.e., a congruent model (Lockwood et al., 2001; Shalash, Wood, & Parker, 2013). In addition, this model may be especially distinct for mixed-gender sibling dyads since interaction with an opposite-gender sibling during the gender-segregated period of early adolescence may provide comfort and skills needed when interacting with opposite-gender peers in adolescence (Furman & Collins, 2009). Sibling and peer relationships seem to compensate for each other as well. There is evidence that developing positive and satisfying peer relationships, including romantic relationships, is compensatory for individuals with unsatisfying sibling relationships (Shalash et al., 2013; Sherman et al., 2006).

Moreover, another study based on interviews of female sibling pairs proposed there are gender differences in concordance in sibling relationships with higher level of concordance in same-gender dyads (Killoren & Roach, 2014). Specifically, same-gender dyads, especially in females, have shown higher levels of intimacy, warmth, and support (Killoren & Roach, 2014; McHale, Updegraff, Tucker, & Crouter, 2000). However, another study with adolescent participants showed that male siblings, compared to both opposite-gender siblings and female siblings, reported more trustworthiness and are more likely to regard each other as a reliable companion or partner (Gamble, Yu, & Kuehn, 2011). Future studies on siblings are needed to inform the broader literature on family relationships.

The ability to successfully process the intricacies of mixed-gender relationships is fundamental for the development of opposite-gender romantic relationships in adolescence.

Based on social developmental norms, an individual's romantic relationships often emerge in adolescence following a period of gender segregation, emphasizing gender differences that are deficient in mixed-gender interactions and social competence since individuals of different genders develop different skills and strategies to form intimacy and attachment (Furman & Collins, 2009). To be more specific, siblings who are close in age experience more intimacy as well as more conflict than other siblings; female sibling dyads as well as opposite-gender sibling dyads exhibited more intimacy and less conflict than male sibling dyads (Buhrmester & Furman, 1990; Doughty et al., 2015; Gamble et al., 2011, Scharf et al., 2005). Therefore, sibling gender constellation could be an important variable in understanding sibling relationships as well as their associations with romantic relationships.

In addition, frequently interacting with a sibling of the opposite gender may moderate the influence of gender segregation by providing practical opportunities to observe and develop interaction skills with an opposite-gender sibling and that sibling's peer group (Furman & Collins, 2009). In the current study, sibling gender constellation specifies if the participant and the chosen sibling are the same gender or opposite gender. Regarding the role of sibling-gender constellation, one recent study indicated that adolescents with opposite-gender sibling experiences are more likely to show higher opposite-gender romantic competence than those with same-gender sibling experiences (Doughty et al., 2015). Because of the potential benefit of opposite-gender siblings in the development of specific interaction skills (Van Volkom & Beaudoin, 2016), one of the goals in this study was to investigate the role sibling-gender constellation played in understanding the correlation between sibling relationship quality and romantic competence among young adults.

Perceived Romantic Competence

It is difficult to understand adolescents and young adults' romantic relationships empirically due to their short-term in nature (Brumbaugh, 2017; Collins, 2003). Examining romantic development through relevant constructs that are essential to adolescents' and young adults' romantic relationships could be an effective solution, but those relevant constructs are not limited to the time when adolescents and young adults are actively involved in romantic relationships (Seiffge-Krenke, 2003; Seiffge-Krenke & Connolly, 2010). One of the essential components in romantic relationships is perceived romantic competence, originally developed from social competence, which refers to adolescents' beliefs or self-concepts about how proficient they could be in romantic relationships overall (Bouchey, 2007; Chen & French, 2008). Examining the specific construct of perceived romantic competence could extend the study of romantic development across a wider range of development in adolescence, not limited to those who have experienced or are currently involved in romantic relationships (Davila et al., 2007). Studying perceived romantic competence can also promote a deep and broad understanding of romantic relationships in adolescent development, rather than confining research to specific romantic experiences (Bouchey, 2007; Davila et al., 2007).

In addition, adolescents' and young adults' perception of romantic competence is an under-explored domain in related research, making it important to study the constructs and processes that shape and promote its development. Previous research revealed that, in general, individuals' perceived romantic competence continually increases across adolescence as they gain social and romantic experience (Conger et al., 2001; Young, Furman, & Laursen, 2011). However, little is known about how and to what extent this positive functioning path works through young adulthood. Although romantic competence was found to be a critical element

assessing the quality of romantic relationships in young adulthood (Conger et al., 2001; Davila et al., 2017), studies on this topic are rare (Seiffge-Krenke, 2003).

Among the existing research on perceived romantic competence, Doughty and colleagues (2015) found a link between sibling experiences and adolescents' perceived romantic competence after controlling for the parent-adolescent relationships. Adolescents with higher levels of sibling conflict demonstrated lower levels of perceived romantic competence, whereas those with higher levels of sibling intimacy showed higher levels of perceived romantic competence (Doughty et al., 2015). Moreover, another study found a strong positive connection between conflict styles within sibling relationships and conflict styles with romantic partners (Shalash et al., 2013). However, how and to what extent adolescents' and young adults' romantic development may be affected by siblings, particularly for those who grow up with a sibling of the opposite gender, has not been fully explored in this domain. Therefore, it is essential to identify the links between sibling relationship quality—including sibling warmth and conflict—and young adults' perceived romantic competence, as well as the role of sibling-gender constellation in the development of romantic competence and its association with sibling relationships.

CHAPTER 3

STATEMENT OF THE PROBLEM

The Current Study

The present study examined the relative contribution of sibling warmth and conflict on college-age young adults' development of romantic competence, as well as tested the moderating role of sibling gender constellation in the correlation between sibling relationship and perceived romantic competence. Based on the Adult Sibling Relationship Questionnaire (ASRQ) developed by Stocker, Lanthier, and Furman (1997), sibling warmth in this study was defined as behaviors within sibling dyads, such as intimacy, similarity, affection, admiration, acceptance, knowledge, emotional support, and instrumental support, whereas sibling conflict was regarded as behaviors such as antagonism/opposition, domination, quarreling, and competition. Building on existing research on romantic relationships in adolescents, perceived romantic competence, generated from social competence, was defined as an individual's thoughts about how proficient he/she is in forming romantic relationships, generally.

The purposes of this study were to explore the connections between perceived romantic competence and sibling relationship quality (i.e., sibling warmth and sibling conflict), as well as the role of sibling gender constellation plays in understanding the links among sibling warmth, sibling conflict, and perceived romantic competence of young adults. This study aimed (a) to examine whether there is an association between sibling relationship quality (sibling warmth and sibling conflict), measured by the Adult Sibling Relationship Questionnaire (ASRQ), and perceived romantic competence, measured by Interpersonal Competence Questionnaire-15 (ICQ-15), in young adults, and (b) to examine the role of sibling-gender constellation on the relations

between sibling relationship quality (sibling warmth and sibling conflict) and perceived romantic competence among college-aged young adults.

Furthermore, this study aimed to examine not only whether sibling relationship quality and perceived romantic competence were connected, but also the prediction that young adults with opposite-gender siblings would demonstrate higher levels of perceived romantic competence was tested. Again, since intimacy with parents can account for both sibling relationship quality and perceived romantic competence (Daughty et al., 2015), intimacy with parents was assumed the same to all participants, and thus excluded in the present study.

Significance of the Study

Because of the prevalence and intensity of adolescents' and young adults' sibling and romantic relationships, it is essential to have a better understanding of the potential connections between these relationships, which, in turn, could promote the overall understanding of adolescents' and young adults' socioemotional development and well-being. To be specific, conflicts between siblings can be resolved through negotiating dominance and balancing the dyadic power in the family context without a relationship dissolution. However, conflicts between romantic partners require one to balance his/her own thinking, behavior, or interest with those of the romantic partner in order to maintain a healthy relationship (Laursen, Finkelstein, & Betts, 2001). In relationships where conflict is not resolved effectively, adolescents and young adults are more likely to experience conflict and even violence later on (Sadeh, Javdani, Finy, & Verona, 2011). Therefore, effective conflict management is essential for maintaining effective and healthy romantic relationships (Shulman, Tuval, Mashiach, Levran & Anbar, 2006). Sibling relationships, providing opportunities and experiences of conflict negotiation and intimate

support, may enhance the techniques and strategies adolescents and young adults apply in conflicts with their romantic partners later on.

In summary, understanding the links between adolescents' and young adults' sibling relationships, especially sibling conflict, and perceived romantic competence could help identify effective conflict management skills that are helpful in both relationships in order to provide effective interventions for adolescents' and young adults' future romantic relationship development. Moreover, by understanding the role of sibling gender constellation in the links between sibling relationships and perceived romantic competence, effective and gender-specific interventions could be developed to help males and females build healthy romantic relationships later on in order to promote their individual development. To be more specific, understanding the role of sibling-gender constellation could especially help children with same-gender siblings from an early age to develop and practice their mixed-gender conflict skills that are critical for their later romantic relationships.

Research Questions and Hypotheses

Based on research findings from the literature and supporting theories, three research questions were generated:

1. Is there a relationship between young adult's sibling relationship quality (i.e., sibling warmth and sibling conflict) and their perceived romantic competence?

2. Does sibling gender constellation moderate the relationship between perceived romantic competence and sibling warmth in young adults?

3. Does sibling gender constellation moderate the relationship between perceived romantic competence and sibling conflict in young adults?

Based on theoretical support, it was hypothesized that:

1. Young adults' perceived romantic competence would be positively correlated with their sibling warmth, while negatively correlated with their sibling conflict. That is,

young adults with higher levels of sibling warmth and lower levels of sibling conflict would demonstrate higher levels of perceived romantic competence.

2. The relationship between sibling warmth and perceived romantic competence would be moderated by sibling gender constellation. That is, the relationship between young adults' sibling warmth and perceived romantic competence would be stronger in opposite-gender sibling dyads than for those in same-gender sibling dyads.

3. The relationship between sibling conflict and perceived romantic competence would be moderated by sibling gender constellation. That is, the relationship between sibling conflict and perceived romantic competence would be stronger in opposite-gender sibling dyads than for those in same-gender sibling dyads.

CHAPTER 4

METHODOLOGY

Participants

Participants for this study included 119 undergraduate students at a large metropolitan university in the Southwest U.S. Participants' age ranged from 18 to 29 years, with a mean age of 20.65 years ($SD = 2.56$). Of the 119 participants in this study, 82.4% ($n = 98$) were females and 17.6% ($n = 21$) were males. For the ethnicity distribution, 56 participants (47.1%) identified as White/Caucasian, 32 (26.9%) were Hispanic/Latino, 13 (10.9%) were Black/African American, 9 (7.6%) were Asian, 7 (5.9%) identified as other, and 2 were Native American/American Indian.

Participants were required to have at least one sibling. Participants with more than one sibling were asked to identify the sibling closest to them in age, based on months, on whom to focus as they responded to questions regarding to the sibling relationship. The age range for participants' sibling was 6-40 years with a mean age of 20.35 years ($SD = 5.54$). Of the 119 participants, 54 (45.4%) identified same-gender siblings and 65 (54.6%) identified opposite-gender siblings. Regarding the birth order of the participants, 51 participants (42.9%) were first borns, 37 (31%) were second borns, and 24 (20.2%) were the third borns, which accounted for 94.1% of the participants. Of the siblings, 31 (26.1%) were first borns and 65 (54.6%) were second borns, which accounted for 80.7% of the chosen siblings. Participant and the sibling are identified as the same race for each pair. For the relationship between the participant and the chosen sibling, 99 pairs (83.2%) were identified as biological siblings and 18 pairs (15.1%) were half siblings, which accounted for 98.3% of total participants; 2 pairs (1.7%) were step siblings.

Initially, 141 participants were involved in the study, however 21 failed to complete the survey instruments and 1 participant did not meet the age requirement of the study, leaving 119 participants. A priori power analysis utilizing G-Power software was conducted to determine the appropriate sample size for the study at the beginning. In order to achieve an acceptable power level for both analyses (power level = .80; $p < .05$; Cohen's $d = .50$), at least 84 participants were required for the study. Therefore, it was determined that 119 participants met the minimum requirement for effect sample size.

Procedures

Upon receiving approval from the university's Institutional Review Board (IRB), the researcher contacted undergraduate instructors from one college within the targeted university. The researcher explained the study via email or face-to-face meetings using a script and/or flyers approved by the IRB for recruitment purposes. After receiving instructors' approval, the researcher visited classes to recruit participants and/or requested instructors post an announcement regarding the study on the appropriate online learning management system for each class. Flyers were also posted throughout the campus to recruit additional participants.

Informed consent was obtained as participants entered the online survey; participants were informed about the confidentiality of the study and were told participation would involve anonymous compilation of responses to questionnaires. Each participant completed the instruments in the following order: demographic information, sibling relationship quality, and perceived romantic competence. Upon completion of the survey, the name of every 10th participant was entered into a drawing to win one of the ten $10 gift cards, with a $100 compensation in total.

Instrumentation

Sociodemographic Information

The demographic survey contained 16 questions regarding participants' and their chosen siblings' age, gender, sibling numbers, birth order, and ethnicity, as well as their life structure, such as how far they lived from their sibling, how often they contacted and saw each other, how often they saw each other for family gathering or events, and their biological relationship.

Siblings Relationship Quality

Sibling relationship quality was measured using the Adult Sibling Relationship Questionnaire (ASRQ; Stocker et al., 1997). The 81-item ASRQ assessed sibling relationships in young adulthood using 3 higher-order factors with 14 subscales: Warmth (Intimacy, Similarity, Affection, Admiration, Acceptance, Knowledge, Emotional Support, and Instrumental Support), Conflict (Antagonism/opposition, Domination, Quarrel, and Competition), and Rivalry (Maternal Rivalry and Paternal Rivalry). All the ASRQ items except Rivalry were assessed via a Likert scale ranging from 1 = *hardly at all* to 5 = *extremely much*, with higher scores indicating more warmth or conflict existing between siblings.

Internal consistency coefficients for the 81-item version measured by Cronbach's alpha were .97, .93, and .88 for warmth, conflict, and rivalry, respectively; two-week test-retest reliability coefficients for each subscale were .95, .89, and .87, respectively (Stocker et al., 1997). Paternal and maternal rivalry items, implying perceptions of unequal treatment from parents, were rated using a different 5-point Likert scale (1 = *participant is usually favored*, 5 = *sibling is usually favored*). Stocker et al. (1997) also demonstrated convergent validity of the ASRQ by correlating subjects' ASRQ responses with reports by their siblings and found

significant agreement between siblings on the warmth ($r = .60$, $p < .01$), conflict ($r = .54$, $p < .01$), and rivalry subscales ($r = .33$, $p < .01$). In addition, the correlations between the composite factors of sibling relationships of Warmth, Conflict, and Rivalry were high and statistically significant. The factor analysis results of the ASRQ English version yielded minimum correlations among the main factors: Warmth and Conflict ($r = -.19$); Warmth and Rivalry ($r = -.17$); Conflict and Rivalry ($r = .23$) ($p < 0.05$) (Stocker et al., 1997).

According to a previous study using ASRQ as an instrument measuring sibling relationship quality (Finzi-Dottan & Cohen, 2011), a relatively high correlation was identified between participants' thoughts of the relationship and their perception of their siblings' thoughts of the relationship (Warmth, $r = .92$; Conflict, $r = .90$; Parental favoritism/disfavoritism, $r = .81$). Tani, Guarnieri, and Ingoglia (2013) developed a reduced 43-item version of the ASRQ to describe participants' perception of their relationship with the chosen sibling. In the current study, only the Warmth and Conflict subscales (37 items) from the reduced ASRQ were used since these two subscales have frequently been utilized in other studies and there was no theoretical and literature evidence on the links of rivalry and romantic competence.

In detail, the Global Warmth Scale ($n = 25$) consisted of items describing similarity (e.g., "To what extent do you and your sibling think alike?"; 4 items), intimacy (e.g., "To what extent do you and this sibling talk about things that are important to each other?"; 3 items), affection (e.g., "To what extent do you consider your sibling a good friend?"; 3 items), admiration (e.g., "How much do you and this sibling admire each other?"; 3 items), acceptance (e.g., "To what extent do you and this sibling accept each other's personality?"; 3 items), knowledge (e.g., "How much do you and this sibling know about each other?"; 3 items), emotional support (e.g., "How much do you and this sibling try to cheer each other up when one of you is feeling down?"; 3

items), and instrumental support (e.g., "How much do you and this sibling give each other practical advice?"; 3 items). In addition, the global conflict scale (n = 12) consisted of items focusing on quarreling (e.g., "How much do you and this sibling argue with each other?"; 3 items), antagonism (e.g., "How much do you and this sibling irritate each other?"; 3 items), competition (e.g., "How much do you and this sibling feel jealous of each other?"; 3 items), and dominance (e.g., "How much are you and this sibling bossy with each other?"; 3 items). In all these subscales, higher scores indicated higher levels of warmth or conflict in the participants' perception of their relationship with the chosen sibling. In the current study, alpha coefficients for sibling warmth and sibling conflict were .95 and .85, respectively.

Perceived Romantic Competence

Young adults' perceived romantic competence was measured using the Interpersonal Competence Questionnaire-15 (ICQ-15; Coroiu et al., 2015). The ICQ-15 was an adapted form based on the full 40-item version of ICQ developed by Buhrmester, Furman, Wittenberg, and Reis (1988). According to Buhrmester et al. (1988), this questionnaire evaluated participants' competence dealing with situations with peers, friends, and romantic partners.

The original 40-item ICQ addressed various social situations in which a person may or may not show social competence. Each item of the ICQ was assessed using Levenson and Gottman's (1978) 5-point Likert scale (1 = *I'm poor at this; I'd feel so uncomfortable and unable to handle this situation, I'd avoid it if possible*; 2 = *I'm only fair at this; I'd feel uncomfortable and would have lots of difficulty handling this situation*; 3 = *I'm OK at this; I'd feel somewhat uncomfortable and have some difficulty handling this situation*; 4 = *I'm good at this; I'd feel quite comfortable and able to handle this situation*; 5 = *I'm EXTREMELY good at*

this; I'd feel very comfortable and could handle this situation very well) to show their level of competence and confidence dealing with each type of situation.

The combination of item scores yielded five scale scores, including five domains of interpersonal competence: (a) the ability to initiate relationships (Initiation, 8 items), (b) the ability to assert displeasure with others (Negative Assertion, 8 items), (c) the ability to disclose personal information (Disclosure, 8 items), (d) the ability to provide emotional support and advice (Emotional Support, 8 items), and (e) the ability to manage interpersonal conflict (Conflict Management, 8 items). For each scale, higher scores indicated higher levels of interpersonal competence.

In the current study, the shortened version of ICQ (ICQ-15) developed by Coroiu et al. (2015) was used, in which the above five domains were assessed with only 3 items each. Internal consistency of the total scale for ICQ-15 was high (Cronbach's α = .87); reliability coefficients of the subscales ranged from .61 to .75, with Initiation (α = .73), Negative Assertion (α = .75), Emotional Support (α = .70), Disclosure (α = .61), and Conflict Management (α =.62). Coroiu et al. (2015) determined the ICQ-15 was a valid, reliable, and time-efficient measure of interpersonal competence, which could be used in research studies as an alternative to the full version of the ICQ. In the present study, the reliability coefficient for perceived romantic competence was .69.

Data Analysis

By reviewing the data set carefully, there was no data missing in the data set. Sibling gender constellation, which was dummy coded as a dichotomous variable (0 = same-gender dyads and 1 = opposite-gender dyads). Before running further statistical analysis, items of each

instrument were grouped into previously determined subscales for the used measures. The variables of sibling warmth, sibling conflict, and perceived romantic competence were treated as continuous data, while sibling gender constellation was treated as a dichotomous variable. The collected data was analyzed using IBM SPSS version 25. Descriptive statistical analysis was conducted to get a general idea of the data and to allow identification of the basic characteristics.

In order to clarify the form of relationship between sibling warmth or sibling conflict and perceived romantic competence, some assumptions were checked before conducting regression analyses. A scatterplot was created for sibling warmth and perceived romantic competence to test Research Question 2 and a second scatterplot was created for sibling conflict and perceived romantic competence to test Research Question 3. By analyzing the scatterplots, linear patterns were detected with a positive slope for each value of sibling warmth and a negative slope for each value of sibling conflict. Although not identical or exactly normal, the distributions of perceived romantic competence did not denote any issues involving normality or homoscedasticity. Sibling warmth and sibling conflict were uncorrelated with errors, and it was assumed there was no measurement error in sibling warmth or sibling conflict and the residuals were independent.

According to the histogram of the residuals with a normal curve superimposed, the residuals appeared close to normal. Moreover, the pattern indicated no problems with the assumption that the residuals were normally distributed at each level of perceived romantic competence and constant in variance across levels of perceived romantic competence. In order to check the normality of residuals, the P-P plot was also consulted from the regression output. The residual plot showed a random scatter of the points with a constant spread, with no values beyond the $\pm$ 2 standard deviation reference lines (i.e., no outliers). Therefore, the residuals were

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approximately normally distributed. Thus, the assumptions for regression analysis appeared to

have been met.

CHAPTER 5

RESULTS

Correlation Analyses

The normality distribution assumption of the data was checked and achieved for this study by checking the skewness and kurtosis of each variable, which are between -2 and 2 (see Table 1). Correlation analyses were conducted to examine the direction and degree of correlations between sibling warmth, sibling conflict, sibling gender constellation and perceived romantic competence (see Table 2). Correlations among the 3 continuous variables (sibling warmth, sibling conflict, and perceived romantic competence) were analyzed using Pearson's *r* correlation. In that sibling gender constellation is a binary variable, the correlation between sibling gender constellation and the 3 continue variables was analyzed using Point-Biserial correlation. Based on the first research question, it was hypothesized that there would be a positive relationship between sibling warmth and college-age young adults' perceived romantic competence and a negative relationship between sibling conflict and perceived romantic competence.

Table 1

Means, Standard Deviations, Skewness, and Kurtosis for Sibling Warmth, Sibling Conflict, Sibling Gender Constellation, and Perceived Romantic Competence

Variables	*n*	*M*	*SD*	Skewness	Kurtosis
Sibling Warmth	119	86.49	19.767	-.708	.407
Sibling Conflict	119	30.19	8.840	.197	-.151
Sibling Gender Constellation	119	.55	.500	-.188	-1.999
Perceived Romantic Competence	119	51.76	9.145	-.295	.925

The results of correlation analysis indicated there was a statistically significant ($p < .01$) moderate negative relationship between sibling conflict and perceived romantic competence ($r = -.333$), and about 11.1% of the variance in perceived romantic competence was explained by sibling conflict ($r^2 = .111$). The relationship between sibling warmth and perceived romantic competence was not statistically significant ($r = .114$, $p > .05$); only 1.3% of the variance in perceived romantic competence was explained by sibling warmth ($r^2 = .013$). Sibling warmth and sibling conflict were not statistically correlated with each other ($r = -.163$, $p > .05$). The correlation between sibling conflict and sibling gender constellation ($r = -.176$; $p > .05$) as well as the correlation between perceived romantic competence and sibling gender constellation (($r = -.039$; $p > .05$)) were also not statistically significant.

Table 2

*Correlations for Sibling Warmth, Sibling Conflict, Sibling Gender Constellation, and Perceived Romantic Competence (*n = *119)*

Variables	Sibling Warmth	Sibling Conflict	Romantic Competence
Sibling Warmth			
Sibling Conflict	-.163		
Perceived Romantic Competence	.114	-.333**	
Sibling Gender Constellation	-.197*	-.176	-.039

*$p < 0.05$ (2-tailed). **$p < 0.01$(2-tailed).

Multiple Regression Analyses

Based on previous research, it was hypothesized that sibling gender constellation would have a moderating effect on the relationship between sibling warmth or sibling conflict and perceived romantic competence. Therefore, Research Questions 2 and 3 were generated to identify the role of sibling gender constellation as a moderator.

Based on the results of correlation analysis in Table 2, sibling warmth was determined to not function as a statistically significant predictor for perceived romantic competence ($r = .114$, $p > .05$), therefore, there was no need to examine the moderating role of sibling gender constellation on the relationship between sibling warmth and perceived romantic competence. Therefore, Research Question 2 was not examined.

However, the correlation coefficient between sibling conflict and perceived romantic competence was statistically significant ($R = -.333$, $p < .01$). Sibling conflict was determined to be a statistically significant predictor for perceived romantic competence. The coefficient of determination was $R^2 = .111$, which means about 11.1% of the variance in perceived romantic competence was explained by sibling conflict in the overall model (see Table 2). Therefore, the moderator effect of sibling gender constellation on the relationship between sibling conflict and perceived romantic competence was examined (Research Question 3), and the interaction variable, sibling conflict by sibling gender constellation, were computed using SPSS. For this analysis, the independent variables were sibling conflict, sibling gender constellation, and sibling conflict by sibling gender constellation. A moderating analysis using multiple regression was performed to test the third hypothesis for the main and interaction effects of sibling gender constellation and sibling conflict on perceived romantic competence among young adults.

Table 3

Multiple Regression on Sibling Conflict, Sibling Gender Constellation, and Sibling Conflict by Sibling Gender Constellation as Predictors of Perceived Romantic Competence (n=119)

Variable	R^2	ΔR^2	B	β	p
Model 1					
Constant	.111		62.172		< .01
Sibling Conflict			-.345	-.333	< .01
Model 2		.020			

Variable	R^2	ΔR^2	B	β	p
Constant	.131		59.626		< .01
Sibling Conflict			-.234	-.227	.103
Sibling Gender Constellation			4.83	.264	.416
Sibling Conflict by Sibling Gender Constellation			-.218	-.378	.243

Note. Dependent variable: Perceived Romantic Competence.

The results of multiple regression analysis indicated the predictive effect of sibling conflict and sibling gender constellation on perceived romantic competence was statistically significant and explained 13.1% of the variance in perceived romantic competence ($R^2 = .131$, $p < .01$). However, the interaction effect of sibling conflict and sibling gender constellation on perceived romantic competence was not statistically significant ($p > .05$), see Table 3. This suggested that sibling gender constellation did not have a moderating effect on the relationship between sibling conflict and perceived romantic competence.

CHAPTER 6

DISCUSSION

The purpose of the study was to investigate the relationship between sibling warmth, sibling conflict and perceived romantic competence for adolescents and young adults. In addition, the moderating effect of sibling gender constellation on the relationship between sibling warmth and perceived romantic competence as well as the relationship between sibling conflict and perceived romantic competence was explored. The results provided some evidence for the main and interaction effects of gender constellation on romantic competence. Sibling warmth was found to not function as a statistically significant predictor for young adults' perceived romantic competence. However, sibling conflict was found to have a statistically significant negative effect on perceived romantic competence.

The existing research on the relationship between sibling relationship quality, such as sibling warmth and sibling conflict, and young adults' perceived romantic competence was limited (Doughty et al., 2015). However, sibling warmth and sibling conflict experienced within the family context were identified as significant factors influencing adolescents' and young adults' perceived romantic competence (Doughty et al., 2015). The findings of the current study were consistent with previous studies with regard to the negative effect of sibling conflict on perceived romantic competence but not consistent with sibling warmth as sibling warmth was found not to be a statistically significant predictor for perceived romantic competence. Therefore, the second hypothesis was not examined.

Regarding the third research hypothesis, although there was a statistically significant negative effect of sibling conflict on perceived romantic competence, sibling gender constellation was not found to be a moderator for the relationships between sibling conflict and

perceived romantic competence. That is, young adults with either same- or opposite-gender siblings seemed to have similar levels of perceived romantic competence with the same level of sibling conflict. Moreover, as sibling conflict increased, the level of perceived romantic competence decreased for both sibling gender groups.

Limitations

The current study extended existing research on the links between sibling relationship quality (sibling warmth and sibling conflict) and perceived romantic competence, as well as examined the role of sibling gender constellation. There were several limitations of this study. First, the research only surveyed the participant's perception of his/her sibling relationship and the chosen sibling's perception was not directly investigated. Those chosen siblings may have had different views of the sibling relationship than the participants theorized. Future research should involve both individuals within the sibling dyad to create a more complete picture.

In the current study, the older and younger siblings within the sibling dyad were not identified, and the romantic competence skills of these siblings may be influenced differently by the sibling relationship. Future studies should investigate differences in perceived romantic competence between older siblings and younger siblings based on sibling warmth and conflict. In addition, for same-gender siblings, male same-gender pairs and female same-gender pairs were not examined. Another limitation of this study is the sampling. Instead of random sampling, convenience sampling was utilized, which may not represent the majority of college students. Therefore, replication studies with a more diverse sample using random sampling needs to be done to validate the study.

Application

 Understanding the links between sibling conflict and perceived romantic competence could identify effective conflict management skills helpful in relationships in order to provide effective interventions for adolescents' and young adults' future romantic development. Moreover, by clarifying the links between sibling warmth and perceived romantic competence, researchers and parents can provide effective support for adolescents and young adults as they develop and enhance their sibling relationships from an early age. In addition, by understanding the role of sibling gender constellation in sibling relationships quality and perceived romantic competence more effective and specific interventions could be developed to help males and females accordingly, build healthy romantic relationships to better promote their effective individual development.

APPENDIX A

INFORMED CONSENT FORM

University of North Texas Institutional Review Board

Before agreeing to participate in this research study, it is important that you read and understand the following explanation of the purpose, benefits and risks of the study and how it will be conducted.

Title of Study: Relations between sibling relationship quality and romantic competence among young adults

Principal Investigator: Dr. Rebecca J. Glover, Professor, Department of Educational Psychology, University of North Texas (UNT).

Student Investigator: Li Wei Sun, M.Ed. and M.S., Doctorate Candidate, Department of Educational Psychology, University of North Texas (UNT).

Purpose of the Study: You are being asked to participate in a research study that examines the links between sibling relationship quality and romantic competence in heterosexual relationships.

Study Procedure: You will be asked to participate in a research study designed to investigate your sibling relationship quality and romantic competencies in heterosexual relationships through Qualtrics. These questions will take less than 20 minutes of your time. It is imperative that you answer these questions honestly and with your best judgment. There are no wrong answers as long as they are truthful.

Foreseeable Risks: There are not any potential risks involved in this study. You may choose not to participate or to withdraw from the study at any time without penalty or loss of any benefit to which you might otherwise be entitled.

Benefit to the Subjects or Others: This project may benefit your family life through the opportunity to think about your personal experience. This study may contribute to the literature of sibling relationships and its connection to future romantic relationships, and it may also clarify the specific effect of sibling gender constellation on sibling relationships and romantic competence.

Compensation for Participants: You will be offered a chance to win a $10 Amazon gift card as a result of completing the survey. Every 10th participant will be entered into a drawing for a $10 Amazon gift card to win the prize. If you desire to be entered into the prize drawing, you will be prompted for an email address at the end of the survey.

Procedures for Maintaining Confidentiality of Research Records: All information will be confidential through password protected website and Qualtrics survey website. Participant surveys will be automatically cryptically coded so that individual information will remain anonymous. The survey data will be kept in a secure computer and only used for this research. Confidentiality will be maintained to the degree possible given the practices and technology of the online survey company. Your participation in this online survey involves risks to confidentiality similar to a person's everyday use of the internet.

Questions about the Study: If you have any questions about the study, you may contact Li Wei Sun at liweisun@my.unt.edu, or contact my dissertation chair, Dr. Glover at becky.glover@unt.edu.

Review for the Protection of Participants: This research study has been reviewed and approved by the UNT Institutional Review Board (IRB). The UNT IRB can be contacted at (940) 565-4643 or with any questions regarding the rights of research subjects.

Research Participants' Rights: By beginning the survey, you acknowledge that you have read this information and agree to participate in this research, with the knowledge that you are free to withdraw your participation at any time without penalty.

- The consent form explains the study to you, possible benefits and potential risks of the study. If you have any questions you can contact Li Wei Sun at liweisun@my.unt.edu, or contact my dissertation chair, Dr. Glover at becky.glover@unt.edu

- You understand that you do not have to take part in this study, and your refusal to participate or your decision to withdraw at any time will involve no penalty or loss of rights or benefits.

- You understand why the study is being conducted and how it will be performed.

- You understand your rights as a research participant and you voluntarily consent to participate in this study.

- Your decision whether to participate or to withdraw from the study will have no effect on your grade or standing in this course.

APPENDIX B

SOCIODEMOGRAPHIC INFORMATION

The sociodemographic information questions are some general questions about your sibling and yourself. If you have more than one sibling, please choose the sibling with the closest to age. If you have two siblings with the same age difference, please randomly choose one. Please check, or fill in the correct response.

1. What is your age? _____

2. What is your sibling's age? _____ (If you have more than one sibling, please choose the closest-in-age sibling) all the sibling questions below refer to the chosen sibling here.

3. What is your gender?
    1.   Male
    2.   Female

4. What is the chosen sibling's gender?
    1.   Male
    2.   Female

5. How many female siblings do you have?
    1.   1
    2.   2
    3.   3
    4.   4
    5.   5
    6.   6
    7.   7 and more
    8.   0

6. How many male siblings do you have?
    1.   1
    2.   2
    3.   3
    4.   4
    5.   5
    6.   6
    7.   7 and more
    8.   0

7. What is your birth order?
    1.   First
    2.   Second
    3.   Third
    4.   Fourth
    5.   Fifth
    6.   Sixth
    7.   Other

8. What is the chosen sibling's birth order?

1. First
2. Second
3. Third
4. Fourth
5. Fifth
6. Sixth
7. Other

9. Please specify your ethnicity.
   1. White/Caucasian
   2. Hispanic/Latino
   3. Black/African American
   4. Native American/American Indian
   5. Asian
   6. Pacific Islander
   7. Other

10. Please specify the chosen sibling's ethnicity.
    1. White/Caucasian
    2. Hispanic/Latino
    3. Black/African American
    4. Native American/American Indian
    5. Asian
    6. Pacific Islander
    7. Other

11. How far does the chosen sibling living from you?
    1. Same home
    2. Same city
    3. Different city, less than 100 miles
    4. Between 100 to 200 miles
    5. Between 200 to 500 miles
    6. Between 500 to 1000 miles
    7. More than 1000 miles

12. How often do you and this sibling see each other?
    1. At least once a day
    2. At least once a week
    3. At least once a month
    4. At least once in 6 month
    5. At least once a year
    6. Less than once a year

13. How often does this sibling contact you?
    1. At least once a day
    2. At least once a week
    3. At least once a month

4.　　At least once in 6 month
　　　5.　　At least once a year
　　　6.　　Less than once a year

14. How often do you contact this sibling?
　　　1.　　At least once a day
　　　2.　　At least once a week
　　　3.　　At least once a month
　　　4.　　At least once in 6 month
　　　5.　　At least once a year
　　　6.　　Less than once a year

15. How often do you and this sibling see each other for family gatherings or events?
　　　1.　　At least once a week
　　　2.　　At least once a month
　　　3.　　At least once in 6 month
　　　4.　　At least once a year
　　　5.　　Less than once a year

16. What is your relationship with the chosen sibling?
　　　1.　　Biological sibling
　　　2.　　Twin
　　　3.　　Step sibling
　　　4.　　Half sibling
　　　5.　　Adopted sibling

APPENDIX C

EXTENDED LITERATURE REVIEW

Sibling Relationships

Socio-emotional development in adolescence has been associated with the emotional tie and strength of sibling relationships including sibling intimacy and conflict (Kim, McHale, Crouter, & Osgood, 2007; Branje, Van Lieshout, Van Aken, & Haselager, 2004). Grounded in social learning theory, most of the studies conclude behaviors and skills learned and reinforced from the family contexts can fulfill youth's social competencies that benefits their relationship development outside the family (Cui et al., 2002). For instance, peer competence has a positive relationship with sibling intimacy (Kim et al., 2007). Regarding social development, socio-emotional skills developed are promoted through successful interactions with siblings and are more significant and complicated than those skills gained through interactions with parents. Thus, sibling relationships may be particularly critical for youth's development (Kramer, 2010; Kramer & Conger, 2009).

Sibling interactions play an important role in shaping daily activities and experiences of youth's early lives. A large portion of children's non-school time is spent with their siblings, which provides a familial context for adequate interactions and experiences (McHale et al., 2012; Watzlawik & Clodius, 2011). The amount of time children play with siblings changes across development, as children develop their independence and interaction skills applied to the development of other relationships outside the family and home (Brumbaugh, 2017; Larson & Verma, 1999). However, through continued accumulation of shared experiences and understanding, youth still spend considerable amounts of time with their siblings in adolescence and young adulthood (Walker, Allen, & Connidis, 2005). As sibling relationships grow more significant, the potential for these relationships to promote siblings' individual development and

fulfillment increases as well (Riggs, Cusimano, & Benson, 2011; Riggs & Kaminski, 2010; Whitton et al., 2008).

<center>Sibling and Romantic Relationships Comparison and Contrast</center>

However, sibling experiences could be either positive or negative. To be more specific, research indicated that positive sibling experiences have a positive correlation with youth's peer relationships, but the connections between negative sibling experiences and youth's interpersonal development is not clear (Bevan, 2010; Branje et al., 2004; Recchia & Howe, 2009; Riggs & Kaminski, 2010). In actuality, sibling conflict or aggression is a common phenomenon and has been identified as a result of unequal access to family resources and lack of social competence and interpersonal skills (Crockett & Randall, 2006; Dirks et al., 2015; Dunn, 2007; Kramer, 2010). Moreover, sibling conflict is associated with individuals' social adjustment problems, such as externalizing behaviors, lower self-esteem, and depression (Kim et al., 2007; Kramer, 2010; Kramer & Conger, 2009). However, research reveals that conflict experiences between siblings can help promote social and interaction skills by providing youth opportunities and social contexts to practice emotional expressions and regulations, problem-solving strategies, and negotiation techniques (Bedford, Volling, & Avioli, 2000).

Reese-Weber and Bartle-Haring (1998) conducted a study to add an extra element to this connection by comparing conflict styles between parents, mothers and adolescents, fathers and adolescents, siblings, and between romantic partners in later adolescence. Their study indicated that sibling conflict was notably associated with conflict between romantic partners, in particular for the attack and the avoidance styles instead of the compromise style. These findings reveal that if a dyadic family relationship is defined by attack and avoidance styles, individuals in that

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particular relationship are more likely to develop similar conflict styles in other relationships later on (Aloia & Solomon, 2015; Reese-Weber & Bartle-Haring, 1998).

Although connections between sibling and romantic conflict resolution styles and skills are not entirely consistent (Reese-Weber & Bartle-Haring 1998), sibling conflict seems to have a negative influence on individuals' developmental outcomes (Buist & Vermande, 2014). Teasing, arguments, and physical and emotional aggression are frequent between siblings (Dunn, 2007; Shulman, Tuval-Mashiach, Levran, & Anbar, 2006), and sibling conflict experiences have a negative impact on individuals' social and psychological outcomes (Sherman, Lansford, & Volling, 2006; Stocker et al., 2002). In addition, negative sibling experiences can lead to more aggressive or even violent social behaviors (Sherman et al., 2006; Whiteman, Becerra, & Killoren, 2009). Consistent with both attachment and social learning perspectives, these research findings imply that early relational styles and experiences can carry over to the development of other relationships later on.

<div align="center">Sibling-Gender Constellation</div>

Sibling and romantic relationships are similar and even compensatory in essence, though there is not enough information about such patterns based on related research (Updegraff et al., 2002). Most of the empirical research about siblings based on an attachment perspective has compared sibling dyads with the attachment bonds between parent and child. The findings indicated a moderate level of concordance, about 40% to 70%, between parents' attachment ties with their children (Brumbaugh, 2017; Buist et al., 2002; Caspers et al., 2007).

Similar to sibling relationships, youth's romantic relationships are associated with different domains of individual development and fulfillment such as identity development, harmonious interpersonal relationships, and sexual identity formation (Collins et al., 2009). With

<div align="center">46</div>

constantly practicing and enhancing interaction skills with opposite-gender peers during

adolescence, youth's self-confidence in romantic competence is promoted and accumulated

(Young, Furman, & Laursen, 2011).

<div align="center">Theoretical Framework</div>

Attachment Theory

Based on the early works of John Bowlby (1969), attachment theory was developed to

explain developmental changes in interpersonal relationships, but primarily, it focuses on the

understanding of individual differences. This perspective mainly focuses on the early bond

between an infant and its primary caregivers, usually parents, as significant figures to an infant's

survival and development (Bowlby, 1969). As children develop, the attachment figures become

secure bases from which children explore the world and fulfill their individual development

around them, but they are able to return for comfort and a sense of security within stressful

circumstances (Bowlby, 1969; 1979). However, separation or loss of an attachment figure causes

risks of the development of anxiety and distress.

Definition of Attachment

In general, attachment refers to the intense, affectionate bond that an individual may have

with significant figures in his/her lives (Bowlby, 1969). This strong bond provides individuals

with pleasure and happiness within secure contexts, as well as comfort and security in stressful

and risk circumstances (Bowlby, 1969; Berk, 2004). Attachment theory proposes that the quality

of attachment in childhood could have a long-term influence on the development of later

emotional and social competence (Cassidy, 2008). From the attachment perspective, the nature

of a child's bond with primary attachment figures become the basis for the development of

relationships with others later on that shapes an individual's expectations, emotions, cognitions,

and behaviors. Security in primary attachment is assumed as moderating an individual's social interactions, including positive interactions in this particular relationship, which results in promoting positive socialization outcomes (Laible & Thompson, 2007). In the current study, this kind of thinking is extended to include an alternative but significant attachment figure: siblings.

From the attachment perspective, children's relationships with a primary caregiver have long-term consequences affecting the quality of their sibling relationships. Children with emotionally secure attachment with primary caregivers is assumed to have close and reliant relationships with others, whereas children with insecure attachment may develop distant, conflictual, or overall less satisfying relationships, including relationship with siblings (Bowlby, 1979; Cassidy, 2008; Laible & Thompson, 2007). Based on the attachment perspective, besides forming an attachment to their primary caregivers, children can develop attachment bonds to a range of significant others in social contexts (Bowlby, 1979; Cassidy, 2008). Given their frequent presence in the everyday life of an individual during the period of childhood and adolescence, siblings are main candidates for individuals to form attachment relationships.

Attachment and Sibling Relationship

In the early lives of children, attachment relationships are based on interactions and responses to children' needs within secure contexts, so actively involved siblings could become prime figures of attachment within the family context. In addition, from an attachment perspective, sibling relationships may imply a deeper bond in which a sibling serves to meet the needs of children seeking emotional security (Cassidy, 2008; Kim et al., 2006; Voorpostel & Blieszner, 2008). Thus, for negative and conflictual interactions, siblings may demonstrate primary attachment relationships in essence. For instance, some children may use their siblings instead of their parents as a secure base or as a source of comfort in stressful circumstances.

Within the sibling relationship, one sibling may regard the other as emotional support in the circumstances of parents' conflict (Kramer & Conger, 2009; Lewis, 2005; Sadeh, Javdani, Finy, & Verona, 2011).

Even though not rooted in attachment frameworks, other studies show evidence that siblings serve as sources of emotional security at different time periods across the lifespan (Kim et al., 2006; Voorpostel & Blieszner, 2008). Understanding how and to what extent siblings develop attachment relationships within family context could be a critical direction for future research. With maturity in adolescence and young adulthood, individuals continually develop mutual and reciprocal relationships, wherein one's interaction to meet the needs of the other becomes essential in mutual relationships (Dunn, 2007; Kim et al., 2006; Voorpostel & Blieszner, 2008).

In addition, research has described that sibling relationships are unique for both their hierarchical and reciprocal features, which change over places and time (Dunn, 2007; East, 2009; McHale et al., 2012). Like other attachment relations, sibling relationships involve interactions of psychological representations, such as self and partner reciprocal trustiness and behavioral interactions between two people, based on their positivity and negativity (Dunn, 2007; East, 2009; McHale et al., 2009). These interactions of the mental perceptions of trustiness and the qualities of behavioral interactions have critical implications for individuals' developmental outcomes, particularly in relationships with frequent and diverse emotional interactions and exchange (McHale et al., 2009; McHale et al., 2012). Whether and how attachment relationships between siblings are developed and promoted are critical for researchers to understand attachment theory and its connection to the development of sibling relationship. However, research studies on attachment relationships between siblings is rare in the literature.

Attachment and Romantic Relationships

Anxious, secure, and avoidant, the three main attachment categories described by Ainsworth (1989), are assumed to exist not only in childhood, but also throughout adulthood, which can also be used to investigate how romantic relationships are developed and maintained in young adults' lives (Doherty & Feeney, 2004; Feeney, 2008; Tancredy & Fraley, 2006). Individuals with secure attachment are more likely to attach with secure partners in romantic relationships and are found to be comfortable with closeness and to have low levels of anxiety about their relationships (Feeney, 2008; Stackert & Bursik, 2003). Securely attached individuals demonstrate greater trustiness, mutuality and commitment, as well as higher satisfaction to their romantic relationships, than those of anxious or avoidant attachment types (Feeney, 2008; Stackert & Bursik, 2003).

Attachment theory indicates that long-term romantic relationships are basic and essential attachments, and these attachments benefit both intimate partners in significant ways (Ainsworth, 1989; Bowlby, 1979; Mikulincer & Shaver, 2008). Empirical research has included the connections between parent-child attachments and peer relationships and later romantic relationships since all of these are described as attachment relationships. The need for an attachment figure is not only employed by children but also applies equally to adolescents as well as to adults. Healthy and effective personality functioning reveals that an individual is able to distinguish appropriate persons who are willing to provide a secure base and are able to cooperate in equally satisfying relationships (Bowlby, 1979). Early experiences and skills of identifying, developing, and maintaining attachment bonds in childhood could carry over into adulthood and consistently have an impact on how individuals develop and maintain attachment relationships in their later lives (Feeney, 2008).

Reproduction, attachment, and caregiving—three main behavioral systems—are involved in romantic or intimate relationships (Ainsworth, 1989). In the process of a long-term romantic relationship, attachment of each intimate partner to the other appears to develop and increase over time. The interaction between the attachment component and the caregiving system makes for a reciprocal provide-and-take relationship (Ainsworth, 1989; Mikulincer & Shaver, 2008). At some point, one intimate partner regards the other as wiser and stronger, while the other serves by providing care, comfort, and support. The caregiving and attachment components become particularly critical for long-lasting relationships, as the presence of these components helps to maintain the intimate ties even when sexual attraction has declined (Ainsworth, 1989; Regan, 2008). Both the experience and the emotional expression in romantic relationships seem to be linked significantly with experiences of relationships and social development earlier (Bowlby, 1979; Santrock, 2009). Earlier developmental stages may have the most direct and critical influence on the following developmental stages (Simpson, Collins, Tran, & Haydon, 2007). For instance, late childhood and adolescence are the stages when previous conflict and working models developed in early childhood may be tested and modified. Therefore, the quality and types of attachments experienced in adolescence, including attachments with parents, siblings, and even peers, may have a direct impact on the attachments individuals form in early adulthood.

In summary, research indicates that attachment theory may provide a basic and concrete foundation for research studies on sibling relationships. Attachment bonds between siblings may not be as critical as parent-child ties in childhood, but they may fulfill children's attachment and emotional development needs in case of parental inadequacies in stressful or conflictual circumstances. Sibling relationships develop over time, and the attachment relationship between siblings is characterized by both hierarchical and reciprocal components that change over time.

As transition from adolescence into young adulthood, sibling ties as well as the change of attachment behaviors become more voluntary and peer-like. A body of work focuses on examining qualities such as contact, interaction and support, and feelings of closeness and security which are main features of sibling attachment in young adulthood (Brumbaugh, 2017; Caspers et al., 2007). However, not all close relationships are regarded as attachment relationships, and it is essential for researchers to identify and analyze each element associated with siblings' attachment bonds. In return, it is also important for researchers studying sibling relationships, the one lifelong relationship for most individuals, to examine the critical role of attachment in understanding sibling relationships.

Social Learning Theory

Social learning theory, also called social cognitive theory, is regarded as the most common framework used to explain sibling relationship processes, especially the development of child and adolescent sibling relationships. Based on social learning perspective, individuals gain and develop cognitive behaviors, such as attitudes and beliefs, through observation and reinforcement, two main mechanisms in social learning (Bandura, 1977). Research on sibling relationships in childhood and adolescence focus on examining the role of parents, such as modelling effective conflict resolution strategies in their marital relationship or praising their children for appropriate social behaviors. However, when parents fail to do either, it can result in negative behaviors of their children (Bandura, 1977; Slomkowski, Rende, Conger, Simons, & Conger, 2001; Whiteman et al., 2009). Siblings also create their own relationships in the context of social interactions, such as by observing and imitating one another and by reinforcing positive or negative behaviors reciprocally (Bandura, 1977). Most interactions in family contexts provide sufficient opportunities for social learning processes to occur.

In addition, the principle of observational learning suggests that family members are critical models for children's social learning development. In fact, children are more likely to observe and imitate others who are warm and nurturing, competent, and powerful such as parents and older siblings in their family contexts (Bandura, 1977). These features indicate that the interactional strategies and styles of family members are essential sources for children's learning to occur. Moreover, children acquire social competencies through active interactions with their parents and siblings as well as by observing parents and siblings' interactions with others (Bandura, 1977). However, not all siblings learn positively through observation, since they could imitate negative behaviors or interactions such as hostility, aggression, and conflict within their family contexts. According to social learning perspective, siblings may also imitate or demonstrate the negative behaviors learned and practiced through interaction with siblings to other relationships, such as peer relationships, friendships, or romantic relationships.

The principles of social learning theory also indicate that modeling processes in sibling relationships which are influenced by sibling gender constellation are different, with older as well as same-gender siblings more likely to serve as role models for the younger ones (Bandura, 1977). Moreover, close-in-age siblings may imitate each other for their similarity to self, but more age differences between siblings may also instill the relatively more powerful and higher status of an older sibling and thus promote their modeling roles in their sibling dyads (Slomkowski et al., 2001; Whiteman et al., 2009). One study has examined the impacts of parents and siblings as potential factors of children's observational learning processes, showing evidence that agrees with principles of social learning theory (Slomkowski et al., 2001), but findings from other studies are not completely consistent (Whiteman et al., 2009; McHale et al., 2007). Because of the mixed findings on sibling relationships, it is critical for future research to

examine factors such as relationship style, status, and power of observational learning and social competence, and to measure those processes directly instead of deducing their influence based on observed patterns of similarities and differences (Whiteman et al., 2009).

Regardless of the observational learning processes occurring within their dyadic social interactions, siblings can shape their relationship directly through their own behaviors in daily interactions as well (Bandura, 1977). For instance, siblings may learn to get more power in the dyads by acting aggressively and hostilely toward a sister or brother in conflictual circumstances. When the sister or brother makes a concession, the aggressive sibling is positively reinforced for increasing negative actions, which will continue and reinforce in later similar situations, and the sister or brother is also reinforced negatively for being surrendered. Because both siblings acknowledge that increasing negative behaviors result in getting more power, sibling relationships could serve as a context for aggression development with negative interactions (Punch, 2008; Slomkowski et al., 2001; Whiteman et al., 2009; McHale et al., 2007). In summary, since siblings and their behaviors can have an impact on each other's social development, sibling relationships serve as a platform for social learning processes to operate.

An abundance of empirical studies has investigated how social learning principles apply in understanding siblings and sibling relationships (Punch, 2008). Some research studying parents' role in sculpting sibling relationships proposes that parents have a direct and critical influence to model and regulate sibling interactions, especially when they intervene in their children's conflictual situations (Cox, 2010; Kramer, 2010; Updegraff, Mchale, Whiteman, Thayer, & Delgado, 2005). In childhood and early adolescence, parental involvement and intervention in sibling conflict seems to have a positive effect on sibling relationships. Especially when parents demonstrate appropriate reasoning skills and cultivate efficient conflict resolution

strategies, siblings are more likely to use effective techniques, such as perspective-taking skills, to resolve sibling problems (Cox, 2010; Kramer, 2010; Updegraff et al., 2005).

Although parents do not aim to demonstratively shape and promote sibling relationships in nature, it has been identified that parents have an influence on sibling relationships when they perform as role models in the context of marital interactions and in parent-child interactions (Cox, 2010; East, 2009; Kim et al., 2006). Evidence indicates that the qualities of marital and sibling relationships are linked, and it also suggests that the parent-child relationship may perform as a mediator for those correlations (Noller, 2005; Reese-Weber & Kahn, 2005).

Based on social learning perspective, unhealthy or unsatisfying marital relationships are often associated with more negative parent-child and sibling interactions. However, within the context of intense marital relationships, some siblings became closer and more intimate, seeking for emotional protection and support from one another (Reese-Weber & Kahn, 2005). These findings support the thought that parents do have an influence on siblings' relationship experiences and development, and besides observational learning, more complicated learning processes are underlying these connections.

Furthermore, siblings play a primary role in developing and regulating their relationships. Through daily interactions, siblings' behaviors are reinforced directly by each another (Campione-Barr, 2017; Cox, 2010). As mentioned earlier, siblings also perform as role models for each other as they may find similarities in many different domains through active interactions, including conflict and aggression (Slomkowski et al., 2001), sexual behavior (McHale et al., 2009), substance use (Slomkowski, Rende, Novak, Lloyd-Richardson, & Niaura, 2005), and social competence (Buist & Vermande, 2014; Chen & French, 2008; Lockwood et al., 2001). However, the above findings on sibling influences must be viewed within the larger

family context. For example, siblings develop within a shared family context, and thus it is important to conceptualize and study sibling influences on their relationship in the context of family processes. However, in the present study, as the connection between an individual's sibling relationship and romantic competence are studied, the parental influence is assumed to have similar effects to individuals' development, which is not the research interest of the current study, so the parental relationship and influence are excluded from the study.

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