

Does Parental Attachment or Sibling Attachment Influence the Quality of Later Life Romantic Relationships?

Rajbir Kaur

Auckland University of Technology

A thesis submitted to Auckland University of Technology
in partial fulfilment of the requirements for the degree of Master of Health
Science in Psychology

November 2021

Faculty of Health and Environmental Science
School of Public Health and Psychosocial Studies

Primary Supervisor: Associate Professor Jason Landon
Secondary Supervisor: Associate Professor Daniel Shepherd

Abstract

Social relationships are of great importance across the lifespan, particularly during the formative years bracketing childhood. Various studies have researched the impact of peers and parent-child alliances on romantic relationships, but the influence of sibling relationships remains somewhat neglected. A study conducted by Statistics New Zealand (2020) reported that six in ten families in New Zealand have children, with approximately 60% of these households with more than one child. Siblings are known to spend a significant amount of time with each other compared to other relationships. If parent-child bonds can impact the quality of one's romantic relationships, the probability of sibling attachments being influential is high. As a result, this research examined whether parental attachment or sibling attachment influences the quality of later life romantic relationships. A total of 91 undergraduate students at the Auckland University of Technology, aged 18 years and above, completed an anonymous questionnaire that explored attachment with their mother, father, and sibling during childhood and the quality of their romantic relationships in adulthood. The findings revealed that sibling attachment was the best predictor of romantic relationship quality as maternal and paternal attachment, both, found non-significant relationships with this outcome variable. Interestingly, sibling warmth during childhood reduced, whilst sibling conflict strengthened, the quality of later romantic relationships. Additionally, ageing individuals reported experiencing dissatisfaction with a romantic partner, whereas the increasing age of a sibling was associated with better romantic outcomes in later life. Some shortcomings of this research included a small sample size and the inability to assess sibling placement; however, suggested future research directions have been discussed. Essentially, the current research helps inform understanding of how early life attachments with different family members can influence the quality of one's romantic relationships. It is hoped the efforts of this research will facilitate an inspiring direction for future studies on the topic of parental and sibling attachment.

Table of Contents

Abstract	2
Table of Contents.....	3
List of Tables.....	5
Attestation of Authorship	6
Acknowledgements.....	7
Introduction	8
<i>Theory of Attachment.....</i>	<i>8</i>
<i>Parental Attachment</i>	<i>10</i>
<i>Sibling Attachment.....</i>	<i>10</i>
<i>Romantic Relationships</i>	<i>13</i>
<i>Effects of Attachment in Relationships</i>	<i>14</i>
<i>Sibling Research in New Zealand.....</i>	<i>16</i>
<i>The Current Study.....</i>	<i>17</i>
<i>Hypotheses.....</i>	<i>18</i>
Method.....	21
<i>Participants.....</i>	<i>21</i>
<i>Instruments</i>	<i>23</i>
Inventory of Parent and Peer Attachment – Revised.....	23
Sibling Relationship Questionnaire	23
The Experiences in Close Relationships– Revised.....	24
<i>Procedure</i>	<i>25</i>
<i>Data Analysis.....</i>	<i>26</i>
<i>Ethical Considerations</i>	<i>27</i>
Results.....	28
<i>Preliminary Analyses.....</i>	<i>28</i>
Maternal Attachment Scale.....	29
Paternal Attachment Scale	30
Sibling Attachment Scale.....	31
Sibling Relationship Questionnaire	32
Experiences in Close Relationships – Revised	34
<i>Correlational Analysis.....</i>	<i>36</i>
Maternal Attachment, Paternal Attachment, Sibling Attachment, and Romantic Quality	36
Sibling Attachment and Romantic Quality	37
Age, Sibling Age, and Romantic Relationship Satisfaction	37
<i>Regression Analysis.....</i>	<i>38</i>
Model Summary for the independent variables (predictors) explaining Romantic Relationship Quality.....	38
Model Summary for the independent variables (predictors) explaining Romantic Relationship Quality.....	39
Discussion	41
<i>Hypothesis One: Attachment Relationships and Romantic Relationship Quality</i>	<i>42</i>
Sibling Attachment and Romantic Relationship Quality	42

Parental Attachment and Romantic Relationship Quality	43
<i>Hypothesis Two: Warmth and Romantic Relationship Quality</i>	45
<i>Hypothesis Three: Sibling Conflict, Power/Relative Status, Rivalry, and Romantic Relationship Quality</i>	46
Conflict	47
Power/Relative Status	47
Rivalry.....	48
<i>Participant Age and Romantic Outcomes</i>	50
<i>Sibling Age and Romantic Relationship Quality</i>	51
<i>The Relationship of Paternal and Maternal Attachment with Sibling Attachment</i>	52
Paternal Attachment	52
Maternal Attachment	53
<i>Research Limitations</i>	54
<i>Directions for Future Research</i>	56
<i>Implications</i>	57
Conclusion	58
References	60
Appendix A: Questionnaire	69
Appendix B: Participant Information Sheet	87
Appendix C: Ethics Approval	91
Appendix D: PGR1 Approval	92

List of Tables

Table		Page
Table 1.	<i>Demographic information for the sample in the study (n=91)</i>	21
Table 2.	<i>Demographic information regarding participants' families and romantic relationships (n=91)</i>	22
Table 3.	<i>Descriptive statistics, including Cronbach's Alpha (α_c) if item deleted, for each of the summated scales for the Inventory of Parent and Peer Attachment – Revised (IPPA-R), Experiences in Close Relationships Questionnaire-Revised (ECR-R), and the Sibling Relationship Questionnaire (SRQ)</i>	28
Table 4.	<i>Mean (M), Standard Deviation (SD), and Cronbach's Alpha (α_c) if item deleted for each item of the Maternal Attachment Scale of the IPPA-R</i>	29
Table 5.	<i>Mean (M), Standard Deviation (SD), and Cronbach's Alpha (α_c) if item deleted for each item of the Paternal Attachment Scale of the IPPA-R</i>	30
Table 6.	<i>Mean (M), Standard Deviation (SD), and Cronbach's Alpha (α_c) if item deleted for each item of the Sibling Attachment Scale of the IPPA-R</i>	31
Table 7.	<i>Mean (M), Standard Deviation (SD), and Cronbach's Alpha (α_c) if item deleted for items of the Warmth, Conflict, Power/Relative Status, and the Rivalry subscales of the Sibling Relationship Questionnaire</i>	33
Table 8.	<i>Mean (M), Standard Deviation (SD), and Cronbach's Alpha (α_c) if item deleted for each item of the Anxiety and Avoidant Scales of the Experiences in Close Relationships - Revised</i>	35
Table 9.	<i>Pearson's Correlations between the Sibling Relationship Questionnaire (SRQ), the Experiences in Close Relationships – Revised (ECR-R), the Inventory of parent and peer attachment – revised (IPPA-R), participant's age, and siblings age (N= 91)</i>	36
Table 10.	<i>Regression Analysis Summary for Gender, Participant's Age, Sibling Gender, Sibling Age, and Attachment variables predicting satisfaction in romantic relationships (N = 91)</i>	39
Table 11.	<i>Regression Analysis Summary for Gender, Sibling Gender, Warmth, Conflict, Power/Relative Status, Rivalry, Participant's Age, and Sibling Age predicting the quality of Romantic Relationships (N = 91)</i>	40

Attestation of Authorship

“I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person (except where explicitly defined in the acknowledgements), nor material which to a substantial extent has been submitted for the award of any other degree or diploma of a university or other institution of higher learning.”

Signed: Rajbir Kaur

Date: November 22, 2021

Acknowledgements

I would like to acknowledge the advice and support provided by both of my supervisors, Associate Professor Jason Landon, and Associate Professor Daniel Shepherd. Thank you for your assistance throughout the entirety of this research project. I would also like to thank my family and friends for their endless encouragement from day one and continuously supporting me to achieve the best. Finally, but most importantly, thank you to all the participants who dedicated their time to partake in this research project; this research would not have been possible without your contribution

Ethical approval by the Auckland University of Technology Ethics Committee (AUTEC) was granted on 16th June 2021. Reference number: 21/163.

Introduction

Humans are social creatures, and the quality of interpersonal relationships play an essential role in the lives of individuals across the life span (Dirks et al., 2015). The formative years during childhood are significant, as children generally develop in environments with intimate relationships with family members, such as parents and siblings (Dirks et al., 2015). The quality and type of attachments formulated with these family members during childhood can impact the development of relationships in adulthood (Simpson et al., 2007). In addition, positive family engagement can establish the structure for positive interpersonal communication outside of the home (Ackerman et al., 2013). As a result, this study uses the attachment theory as a structure to explain the important relationships of individuals with parents and siblings (Koohsar & Bonab, 2011; Ma & Huebner, 2008).

Theory of Attachment

The attachment theory was established by John Bowlby, who researched the importance of attachment in a setting with maladjusted boys and proposed that child attachment was evolutionary (Bowlby, 1979). This theory developed from a biological basis which suggests that individuals are born with psychobiological systems that demand them to locate a sense of closeness with attachment figures (Mikulincer & Shaver, 2012). Attachment is defined as a close relationship between an individual and a person they consider to be significant (Noom et al., 1999). The attachment theory has primarily focused on the relationship between an infant and their primary caregiver. Attachment represents a solid affectional bond in which the attachment figure is utilised as a safe haven during fear and, alternatively, functions as a secure base for exploring new environments (Ainsworth et al., 1978). Attachment figures are known to display consistency, persistence, and stable emotional bonds, including joy, pleasure, security, and comfort (Körük et al., 2016). These qualities become particularly observable during distress and danger and have important implications for developing the child's internal working model, formed through repeated experiences (Ognibene & Collins, 1998).

Beginning early in childhood and extending into the later stages of life, attachment is considered vital for resilience, optimal health, and survival (Picardi et al., 2013). The attachment theory emphasises that the quality of attachment developed in early life can create long-term influences on the child's ability to form adaptive emotional coping strategies (Cassidy, 2008; Passanisi et al., 2015). Attachments are usually formed with people of familiarity, including role models during childhood, companions and confidants, and sources of love and support during adulthood (Ainsworth, 1989; Cicirelli, 1995). Experiences with attachment figures in childhood can heavily shape an individual's developmental trajectory and internal working model about themselves, others, and the world (Shepherd et al., 2020). These internal working models evolve

across time and incur alterations through encounters with meaningful relationships (Wilkinson, 2004). Positive experiences with attachment figures are meaningful as they lead to individuals developing positive models of themselves and others, whereas negative experiences result in the development of negative models (Mikulincer & Shaver, 2012).

Attachment can be classified into different groups. Mary Ainsworth, a developmental psychologist, formulated that attachment consists of two categories: secure and insecure (Simpson & Rholes, 2017). The insecure category further comprises three attachment styles: anxious, avoidant, and disorganised (Simpson & Rholes, 2017). Children and adolescents with high anxiety and avoidance scores generally carry these characteristics into adulthood (Simpson & Rholes, 2017). In contrast, securely attached individuals typically possess positive outlooks of themselves and others, have lower anxiety and avoidance scores, and express comfort in both, relying on attachment figures and being relied on (Simpson & Rholes, 2017). Individuals with secure attachment styles also report higher quality romantic relationships (satisfaction) compared to individuals with anxious or avoidant attachment styles. In fact, decades of research have shown that securely attached adults have increased self-confidence and better socialisation skills (Cooper et al., 1998). They are also more likely to seek romantic relationships and less likely to encounter loneliness.

Conversely, individuals with anxious attachment styles generally portray negative self-views and score high in the anxiety dimension (Simpson & Rholes, 2017). They are hopeful but guarded in their relationships, lack self-confidence, and possess abandonment issues due to their attachment figures displaying inconsistent responsiveness. Consequently, individuals with anxious attachments are constantly engaged in seeking closeness with others to increase their level of security (Simpson & Rholes, 2017). In contrast, avoidantly attached individuals have high avoidant scores, have negative views of attachment figures, and continuously aim to maintain independence and control in their relationships due to the perception that their attachment figure is unreliable (Simpson & Rholes, 2017). They report intimacy as uncomfortable, have poor socialisation skills and have fewer chances of seeking closeness with others and indulging in romantic relationships due to an inadequate caregiver response in childhood (Mikulincer & Shaver, 2012). The third type of insecure attachment, disorganised attachment, arises from children receiving inconsistent emotional support from attachment figures, resulting in uncertainty regarding their caregiver's responsiveness to their needs. Although children learn to obtain support from attachment figures, they may also fear them and experience trauma and attachment difficulties (Zilberstein & Messer, 2007). As a result, children develop disorganised views of love, safety, and the world. They grow up to develop a negative self-image and avoid social gatherings. Ultimately, the above research highlights the influence

early-life attachment figures can have on the ability of individuals to formulate and maintain bonds in adulthood (Robertson et al., 2014).

Parental Attachment

Individuals are part of broader family systems, and they cannot be understood isolated from that context (Cox, 2010). Early attachment experiences, such as those with parents, result in the development of internal working models. These are lifelong templates regarding the reliability of future relationships. Parental attachment provides children with a secure base necessary for exploring, learning, and relating to others, alongside the motivation, wellbeing, and opportunity to perform these tasks (Rees, 2007). Parents tend to be one of the most significant attachment figures for children early in life. The type and quality of attachment styles children develop with their parents and caregivers significantly influence their psychological, physical, and behavioural wellbeing (Rees, 2007). Subsequently, the attachment style developed with a parent demonstrates strong links with the style of attachments developed in other relationships (Mikulincer & Shaver, 2004). Parents play numerous roles in their children's lives, including attachment figures, caregivers, disciplinarians, playmates, and teachers (Benoit, 2004). Of all these, a parent's role as an attachment figure is perhaps the most significant in influencing their child's social and emotional functioning.

Parenting styles have been found to affect child development and are defined as the attitudes and behaviours expressed by parents who establish the emotional ambience of the communication with their children (Seigler et al., 2006). There are three types of parenting styles: authoritarian, authoritative, and permissive. Authoritarian parenting involves increased demandingness and decreased display of warmth, whereas permissive parenting entails little or no demandingness and high amounts of warmth (Seigler et al., 2006). In contrast, an authoritative parenting style involves an equal amount of demandingness and warmth and has been correlated with healthy romantic relationships during early adulthood (Dinero et al., 2008). Additionally, authoritative parents who display characteristics such as demandingness, limit-setting, parental availability, and discipline must practice these virtues from childhood through to adolescence as they can enhance secure attachment between parents and children (Dinero et al., 2008).

Sibling Attachment

Various studies have researched the impact of peers and parent-child alliances on romantic relationships (Ackerman et al., 2013; Mikulincer, 2004; Raby et al., 2015). However, it is also essential to expand attention to other attachments during childhood. When children transition from childhood into adolescence, attachment behaviours tend to shift from parents to

peers. In addition to peers, there is also a shift of attachment towards siblings (Whiteman et al., 2015). Increasing evidence highlights siblings' effects on an individual's behavioural development and later-life relationships (Conger et al., 2009). As with parents, the bonds between a younger and older sibling is considered an attachment bond as siblings have been found to provide security, comfort, and closeness for each other (Bank, 1992; Cassidy, 1999; Doherty & Feeney, 2004). These examples exercise the crucial functions of attachment, such as safe-haven, secure base, and proximity seeking.

Generally, older siblings exhibit excitement during the arrival of a newborn and assist parents by taking up a helping role and engaging in caretaking duties (Ainsworth, 1989). In many cultures, older siblings are expected to undertake a certain level of responsibility for younger siblings as standard practice, regardless of parental presence (Ainsworth, 1989). Throughout this process, older siblings become a source of support, role models, advice dispensers, and caregivers for their younger siblings, highlighting a potentially stronger attachment from the younger siblings (Feinberg et al., 2013). This resonates with Bowlby's statement that attachment behaviour includes a weaker individual seeking and maintaining closeness with a stronger personality (Stewart & Marvin, 1984). Moreover, older siblings have a higher likelihood of accepting caretaking responsibilities in the presence of a larger age gap with younger siblings, whereas siblings with smaller age gaps are likely to have egalitarian relationships and grow together as good friends (Ainsworth, 1989).

Research has recently examined sibling relationships in adults from a retrospective viewpoint (Gungordu & Hernandez-Reif, 2020; Robertson et al., 2014; Whiteman et al., 2011). Sibling relationships constitute unique and influential bonds that tend to be one of the most stable, long-lasting, and enduring relationships. This relationship can outlast alliances with parents, partners, and even one's children. Whiteman et al. (2015) reported that the relationship between siblings is equal to the strength of the relationship with parents and peers. As they develop, siblings have engagement opportunities for various interactions (Gungordu & Hernandez-Reif, 2020). In addition, much of outside school time is spent in the presence of siblings, providing large amounts of time for learning opportunities for identity formation, conflict management, tolerance of negative affect, and social understanding (Kramer, 2010).

Bryant (1992) interviewed 21 siblings and found that siblings may search for support in each other and share difficult experiences when parents are unapproachable or unavailable. The expression of feelings and shared experiences amongst siblings in childhood can enhance their emotional understanding (Noller, 2005). For example, when children describe and acknowledge internal states and develop emotional regulation skills, they increase understanding of their emotions and the emotions of others (Lam et al., 2014). Across time, siblings can become

social-relational partners due to their companionship and availability (Whiteman et al., 2015). Healthy sibling bonds in adulthood are built on transparent methods of communication, rules of clean fighting, greater warmth, reduced proximity, and the formation of appropriate boundaries during childhood (Lam et al., 2014). This is partly attributed to the developmental activities of transitioning into emerging adulthood, such as leaving home, pursuing higher education, commencing employment, and focusing on new relationships beyond one's family (e.g., romantic partners) (Arnett, 2004; Conger & Little, 2010).

Sibling attachments can be frustrating, emotionally charged, and require the development of competencies to promote positive relationships (Kramer et al., 2019). The most positive sibling experience is reported by sisters, individuals with a younger sibling, and females indicating their significant relationship with a sister (Spitze & Trent, 2006). Howe et al. (2011) highlighted that siblings expressed increased security, higher levels of trust, emotional responsiveness in sibling relationships characterised by warmth. One of the main factors influencing disclosure involves one's ability to feel safe in a relationship. An increased feeling of safety amongst siblings results in a higher likelihood of disclosing personal information (Howe et al., 2011). Sibling relationships that involve moderate levels of warmth and conflict have a greater likelihood of social and cognitive adjustment, preventing negative complications in their lives and relationships.

Although sibling relationships are renowned for support and warmth, they can also involve conflict, contention, and violence. Certain levels of conflict are considered normal in sibling relationships (Stocker et al., 2002). Daily interactions and low levels of conflict can characterise constructive social learning, sophisticated reasoning skills, and negotiation techniques to assist in resolving conflict in other life areas (Howe et al., 2002). Extended conflict, however, can detrimentally impact one's wellbeing, mental health, and significant relationships. Children raised in conflictual environments where problems are escalated rather than resolved are at an increased risk of experiencing poor adjustment into adulthood, affecting their romantic relationships (Wiehe, 1997). Furthermore, these children also have a higher likelihood for a multitude of psychological and behavioural implications (Howe et al., 2002).

Research by Kramer et al. (2019) found that siblings who received different treatment from their parents without a valid explanation, such as favouritism by both or one parent, experienced higher levels of conflict and rivalry amongst each other during their childhood years. Although research has shown that adult attachments between siblings exhibit reduced rates of rivalry, perceptions of parental favouritism from a young age can impact the attachment between siblings in later life. This can significantly enhance conflict, hostility, and jealousy

whilst decreasing warmth (Finzi-Dottan & Cohen, 2011; Pillemer et al., 2010; Suito & Pillemer, 2007).

Romantic Relationships

Erik Erikson's theory of lifespan development (Erikson, 1963) emphasises the crucial task of achieving interpersonal intimacy and finding a long-term companion during early adulthood (18 – 40 years) (Cantor et al., 1992). This leads to the discussion of romantic relationships in young adults, which has continuously emerged as a topic of interest in the field of psychology (Crouter & Booth, 2006; Fincham & Cui, 2011; Scharf & Mayseless, 2001). Romantic relationships have no unidimensional definition and are defined in terms of the qualities of the relationship (Crockett & Randall, 2006). Romantic relationships are bonds between two individuals involving emotional and physical feelings of love, intimacy, commitment, and reciprocity (Hendrick, 1988). Vaughn and Baier (1999) have reported that romantic relationships can encompass, but are not limited to, dating, engagement, marriage, and cohabiting (living together without marriage).

The development and maintenance of close romantic bonds promote health and wellbeing, whilst the failure to do so can predict emotional and physical difficulty (House et al., 1988). Romantic relationships are usually formed during adolescence, a time of identity and self-exploration, and persist into adulthood. Maintaining romantic relationships is a crucial task that can positively influence young adults' psychological wellbeing, social competence, and behavioural adjustment (Davila et al., 2017; Fincham & Cui, 2011). This can also have a predictive role for the nature of later relationships, such as marriage. The role of satisfaction and the quality of romantic relationships is important to consider. The quality and satisfaction of romantic relationships are not limited to the relationship itself as it is influenced by various factors, including the level of disclosure, degree of commitment (open vs closed relationships), the existence of role complementary, and overall emotional contentment and happiness (Moss & Schwebel, 1993).

The existence of satisfaction between couples determines whether the quality of romantic relationships increase or decrease as the relationship develops. According to Lund (1985) and Rusbult (1983), romantic relationship quality, including love, satisfaction, and commitment, increases in romantic relationships across time. Similarly, Sprecher (1999) has reported high satisfaction and quality in romantic relationships when they commence, but over time these factors tend to settle down and even decrease in intensity as the relationship progresses and the individuals' age (Sprecher, 1999). In contrast, these studies reporting increased romantic quality are inconsistent with the research by Cumming and Henry (1961),

who found that romantic relationships tend to become less satisfying with age. Overall, the quality of romantic relationships is found to be high at the beginning of romantic relationships, which tend to become moderate across time.

The intensity of pleasant and negative emotions expressed in romantic and sibling attachments is a prominent feature of both connections (Seiffge-Krenke & Connolly, 2010). Sibling relationships are non-selective, and siblings closer in age tend to have better communication and understanding due to encountering developmental intricacies in similar environments (Seiffge-Krenke & Connolly, 2010). Romantic relationships and sibling attachments have been described as compensatory or congruent. The social support and skills shared by siblings during childhood can strengthen the ability of individuals to form better quality romantic relationships in later life (Robertson et al., 2014).

Romantic relationships also involve conflict as to any other relationship (Updegraff et al., 2002). Skills required to solve romantic conflict can be acquired by successfully resolving sibling conflict in childhood (Updegraff et al., 2002). Repeated sibling conflict, followed by successful resolutions, can strengthen an individual's ability to navigate conflict in other relationships, particularly with romantic partners. Of note, disagreements and conflicts between siblings can be resolved with power and domination without terminating this relationship (Laursen et al., 2001), but romantic conflict involves a balanced interest of both individuals to preserve the alliance. Therefore, the social skills of couples acquired from their early life attachments can play a significant function in assisting couples to retain a power balance in their romantic relationships. Furthermore, the risk for continual conflict and violence is raised between romantic partners if they do not have the skills to resolve disagreements effectively (Sadeh et al., 2011). Therefore, successful conflict resolution is crucial for the maintenance of healthy romantic relationships.

Effects of Attachment in Relationships

Cognitive, behavioural, and affectional dynamics learnt with parents and siblings in early life can be demonstrated in significant relationships beyond the family environment, including romantic relationships (Fraley & Davis, 1997). Individuals with secure attachment styles have reported ease in developing close bonds and enjoying affectionate and long-lasting romantic relationships (Brennan & Shaver, 1995). Securely attached individuals generally connect with romantic partners with equal security, report comfort with closeness, and experience minimal anxiety regarding romantic relationships. Additionally, securely attached individuals exhibit increased trust, commitment, interdependence, and a higher likelihood of reporting greater romantic relationship satisfaction than individuals with an anxious or avoidant attachment style (Robertson et al., 2014).

In comparison, avoidantly attached individuals encounter difficulty gaining closure with others, and a lack of disclosure has been found to impact social and romantic relationships (Brennan & Shaver, 1995). Avoidantly attached individuals are likely to minimise attachment needs due to envisaging rejection or refusal by their romantic partner. Conversely, anxiously attached individuals experience no difficulty falling in love, but they may have romantic relationships characterised by unhappiness and emotional mood swings (Brennan & Shaver, 1995). The attachment system of anxious individuals can become hyper-activated when the attention of a romantic partner is lacking (Brennan et al., 1998; Mikulincer & Shaver, 2016). Consequently, individuals with an anxious attachment style can experience frustration due to the perception of lacking closeness, a fear of abandonment, and a yearning for enmeshment with their romantic partner. From the three attachment styles reported above, securely attached individuals have been found to report high satisfaction and better quality in their romantic relationships (Stackert & Bursik, 2003).

Moreover, early family experiences can create lifelong influences on one's romantic relationships, even if individual factors, such as personality traits, are accounted for (Raby et al., 2015). Positive family environments enable individuals to develop positive interpersonal styles that later extend into romantic relationships (Ackerman et al., 2013). Cohesive, warm, and organised family environments have led to the development of low hostility and constructive communication techniques in individuals. This has demonstrated links with better functioning and reduced difficulties in problem-solving in romantic relationships (Fosco et al., 2016). Essentially, the chances of individuals forming intimate and satisfying romantic relationships increases due to their previous exposure to positive family environments with parents and siblings (Masarik et al., 2013).

The utilisation of effective parenting methods such as acceptance, inductive reasoning, and discipline can promote positive and appropriate reciprocal communication within children (Auslander et al., 2009). These aspects have been found to further generalise to romantic partners. The ability of individuals to respectfully negotiate and advocate for their rights with siblings enables them to establish capacities for negotiation of power, which can impact the quality of their romantic relationships (Collins et al., 2009; Tyrell et al., 2016). Individuals with loving and positive parental relationships express greater trust and comfort in relying on their romantic partners (Black & Schutte, 2006). Thus, organised and cohesive family environments increase the chances of individuals developing intimate and satisfying romantic relationships (Masarik et al., 2013).

In contrast, family conflict creates risk for poor outcomes in romantic relationships (Darling et al., 2008), including reduced adeptness in successfully resolving conflict (Tyrell et al., 2016). This further lowers one's likelihood of engagement in romantic relationships. in addition,

ineffective parenting styles, including overprotective or harsh parenting, can contribute to violence in romantic relationships. Such parenting techniques can highlight to children the appropriateness of utilising controlling actions to resolve conflict. This can lead to children growing up and engaging in conflict behaviours with romantic partners (Parade et al., 2012), significantly reducing the satisfaction levels and quality of romantic relationships.

Overall, the attachment theory suggests that long term romantic relationships are essentially attachments that deliver considerable advantages to both partners in the relationship (Ainsworth, 1989; Bowlby, 1979). Attachment persists beyond childhood and into adulthood and can be observed in how other attachments are formed and sustained (Feeney, 2008). According to Ainsworth (1989), attachment in romantic relationships generally intensifies across time. Romantic relationships comprised of mutual engagement, love, and commitment have more excellent stability and psychological wellbeing (Le et al., 2010). They are also less inclined to separate. As romantic relationships develop across time, components of attachment and caregiving become increasingly important, as the presence of these systems aids in preserving the connection between partners, particularly during situations where sexual interest diminishes (Ainsworth, 1989; Regan et al., 2004).

Sibling Research in New Zealand

Robertson et al. (2014) examined the relationship between sibling attachment and romantic relationship satisfaction. A sample of university students in New Zealand (NZ) received the Sibling Relationship Questionnaire (SRQ) and retrospectively evaluated the attachment with their sibling during their adolescent years. Additionally, their romantic relationship quality was assessed via the Relationship Assessment Scale (RAS) (Robertson et al., 2014). The study had developed three hypotheses; determining an association between sibling relationship quality and romantic relationship satisfaction, whether the order of the sibling's impacted romantic relationship satisfaction, and lastly, determining if romantic relationship length influenced romantic relationship satisfaction (Robertson et al., 2014).

The findings reported that participants who were the younger sibling rated their romantic relationships as more satisfying compared to participants who were the older sibling (Robertson et al., 2014). An explanation for this finding included younger siblings potentially perceiving their relationships as more satisfying due to lower expectations of satisfaction than older siblings. Furthermore, the stage model of relationships contends that aspects of a romantic relationship, such as intimacy or satisfaction, may increase as the relationship progresses from one stage to another (Sprecher, 1999). Therefore, it was assumed that romantic satisfaction in younger siblings increased as they transitioned from one relationship stage to another. Moreover, different studies have reported that older siblings generally become attachment figures for

younger siblings and do not require attachment figures themselves (Bank, 1992; Dunn & Kendrick, 1982). As a result, this impacts the degree to which individuals can develop a secure attachment style in later romantic relationships. According to the principle of learning theory, the presence of one's romantic partner becomes less rewarding over time due to habituation (Sprecher, 1999).

Robertson et al. (2014) found no correlation between retrospective sibling attachment and satisfaction in later life romantic relationships. As this research was the first to examine this association with the small sample size, denying the existence of an association was too early. Therefore, further research is required which explores the effects of sibling attachment on romantic relationships, as this area remains relatively under-explored with limited studies on these topics (Cox, 2010). Nevertheless, significant associations were reported between the RAS, birth order, and romantic relationship length (Robertson et al., 2014). The results found that both the older and younger siblings considered the older sibling to have more power/relative status in the sibling relationship than the younger sibling. This research also examined romantic satisfaction and revealed that younger siblings rated their romantic relationships as significantly more satisfying than older siblings. In terms of relationship length, romantic relationships that had extended 24 months in duration reported significantly higher satisfaction than relationships that were under 24 months, which reported lower satisfaction levels (Robertson et al., 2014).

Lastly, an interaction was found between romantic relationship length and sibling placement in the family (Robertson et al., 2014). Younger siblings reported lower satisfaction in their romantic relationship of fewer than 24 months. In comparison, older siblings reported higher satisfaction in romantic relationships, which were less than 24 months, than established relationships above 24 months in length (Robertson et al., 2014). Ultimately, the findings of this study highlighted that sibling relationships can be influential in impacting the levels of satisfaction present in romantic relationships.

The Current Study

Statistics NZ (2020) found that 6 in 10 families have children in their households, and approximately 60% of these homes have more than one child. This demonstrated that over half of NZ households had siblings, yet the area of sibling attachment remains somewhat neglected. Research has repeatedly reported that parent-child and peer relationships can impact romantic relationships. Thus the chances of sibling relationships being influential are high (Cohn et al., 1992; Crockett & Randall, 2006; Dunn, 2000). Siblings spend significant amounts of time with each other compared with parents (Cox, 2010; Kramer, 2010), yet limited attention has been allocated to the influence of early life sibling and parental attachment on romantic relationships. This highlighted the need to explore the association between parental and sibling attachment and

the quality of later life romantic relationships (Brumbaugh, 2017; Donnellan et al., 2005; Robertson et al., 2014). Although there are various components to examine for sibling attachment (e.g., family structure and different dyads), it was of particular interest to assess parental and sibling attachment during childhood. This led to the development of the following research question: "Does parental attachment or sibling attachment influence the quality of later life romantic relationships?"

The present study's objective was to explore the association between retrospective maternal, paternal, and sibling attachment (closest in age) and the influence of these attachments on future romantic relationship quality. Existing studies have concentrated their attention on the impact adolescence (e.g., ages 13 to 18) creates on romantic relationships (Creasey, 2002; Robertson et al., 2014), with little attention attributed to the earlier predictors of adult romantic relationships. Therefore, to investigate parental and sibling attachment, the age range of 0 to 11 years was selected as these are the formative years when attachments are formed, and siblings are involved in heavy communication with each other. For children, this age range corresponds with the completion of kindergarten, beginning and completion of primary school in NZ, and an age where children begin to develop an understanding of significant relationships.

The current study's definition of parents included legal guardians, caretakers, and individual(s) who played the role of raising the child. This included biological parents, stepparents, adoptive parents, foster parents, grandparents, aunts and uncles, and a parent's friend. For a closer examination of parental attachment, this research assessed paternal and maternal attachment individually. Furthermore, a sibling was defined as someone with whom the individual shared one or more parent by law or biologically. This definition also included half-siblings, stepsiblings, and adopted siblings. Half-siblings and stepsiblings share one biological parent, whereas adoptive siblings have no biological parents but are linked by marriage and legal ties. Cicirelli (1995) found that despite the high occurrence of biological siblings, an increasing number of siblings fall in the category of stepsiblings, half-siblings, or adopted siblings. Therefore, it was appropriate to involve all types of siblings (Cicirelli, 1995). For the purpose of this study, participants were requested to base their answers on the sibling closest in age (hereafter nearest sibling) due to the likelihood of participants having more than one sibling. The reason for this included that siblings who have a closer age gap are likely to spend significant time in each other's company and therefore have greater opportunities for influence (White & Hughes, 2017).

Hypotheses

Romantic relationship quality is highly subjective, and it is unlikely to be measured directly, but it can be inferred by the level of satisfaction present in the relationship (Hendrick,

1988). Thus, satisfaction levels in romantic relationships are an important way of indicating if the relationship is likely to persist or terminate. Similarly, parental and sibling attachment quality is also highly subjective and cannot be assessed directly with ease. As a result, three self-report measures will be administered to participants in this study. The inventory of parent and peer attachment – revised (IPPA-R) assesses retrospective attachment with the mother, father, and sibling during childhood (Armsden & Greenberg, 1987), and the sibling relationship questionnaire (SRQ) measures retrospective sibling attachment (Furman & Burhmester, 1985). Furthermore, the quality of adult romantic relationships, or satisfaction, will be assessed via a self-report measure: the experiences in close relationships– revised (ECR-R) (Fraley et al., 2000). Due to the nature of the ECR-R scale, lower ECR-R scores indicate increased satisfaction and romantic relationship quality, whereas higher ECR-R scores suggest decreased satisfaction and romantic relationship quality. As a result, the current study tested several hypotheses relevant to the research question – Does parental attachment or sibling attachment influence the quality of later life romantic relationships?

Past research has demonstrated positive associations between parent-child and peer relationships and later-life romantic bonds (Ackerman et al., 2013; Mikulincer & Shaver, 2004; Raby et al., 2015). The cognitive, behavioural, and affectional dynamics learnt with parents and peers can be demonstrated in essential relationships beyond the family environment, such as those of a romantic nature (Fraley & Davis, 1997). Thus, the same can be expected for sibling attachments as they can equally impact an individual's development and relationships (Crockett & Randall, 2006). Research highlights the compensatory nature of sibling attachments in families where parental relationships are either inadequate or poor. Due to the importance and uniqueness of parent and sibling attachments in a person's life, it was hypothesised that maternal, paternal, and sibling attachment would each correlate negatively with the ECR-R scores. Lower ECR-R scores indicate increased satisfaction and romantic relationship quality. Therefore, this hypothesis indicates a positive correlation between parental and sibling attachment and later life romantic relationships. Due to the nature of the scale (ECR-R), this will be evidenced by a negative correlation between early life attachments and the ECR-R scale. A regression analysis will help determine which of the three attachments is the most potent predictor of future romantic relationships.

In addition to parents, sibling relationships can also develop the attachment system, thereby contributing as attachment figures (Brumbaugh, 2017). Sibling attachments differ due to proximity, companionship, and availability compared to other relationships, and they commonly become social-relational partners (Whiteman et al., 2015). In addition, sibling attachments characterised by warmth represent greater levels of trust, self-disclosure, emotional understanding, and problem-solving skills. Sibling bonds with trust and warmth who can find

solutions for difficulties can prevent adverse complications in romantic relationships (Howe et al., 2011). Thus, individuals should aim to build sibling attachments comprised of warmth and supportiveness due to the long-lasting impacts this attachment can have. Therefore, it was hypothesised that childhood sibling warmth would represent a significant negative correlation with the ECR-R scores. That is, individuals with sibling attachments with high levels of warmth in childhood will have increased quality in their future romantic relationships.

Moreover, sibling relationships can involve conflict, power/relative status, rivalry, and even violence at times (Stocker et al., 2002). Regular communication amongst siblings involving low to moderate levels of conflict can lead to constructive social learning and skills of sophisticated reasoning, which assist in resolving romantic conflict. Furthermore, negotiating and advocating for rights within siblings enables individuals to establish capacities for power negotiation, which can impact romantic relationships (Collins et al., 2009; Tyrell et al., 2016). In addition to these factors, siblings can experience rivalry if one child is more favoured by one or both parents (Kramer et al., 2019). Essentially, the learnt experiences with siblings, including those listed above, can predict the quality and success of future romantic relationships (Doughty et al., 2015). Due to the nature of the ECR-R scale, it was hypothesised that childhood sibling conflict would have a significant negative correlation, whilst sibling power/relative status and rivalry would have a significant positive correlation with the ECR-R scores. Lower ECR-R scores indicate increased satisfaction and romantic relationship quality, whereas higher ECR-R scores suggest decreased satisfaction and romantic relationship quality. Thus, the hypothesis indicates a positive correlation between sibling conflict and future romantic relationships and a negative correlation between sibling power/relative status and rivalry with future romantic relationships.

This research will be among the few studies conducted in NZ investigating the influence of parental and sibling attachment during childhood on later romantic relationship quality. Results of this study can assist in increasing the availability of literature relevant for young adults, and it can also provide valuable insight and direct future research in the area of parental and sibling attachment.

Method

Participants

Data for the current study were collected from a convenience sample of 91 undergraduate students (76.9% females, 21.7% males). Eligibility criteria required participants to be aged 18 or above with at least one sibling, and participation was voluntary. The age of participants ranged from 18 to 50 years, with a mean age of 22.2 years ($SD = 6.75$). Most of the sample identified themselves as New Zealand European (34.1%), and 8.8% of participants were affiliated with more than one ethnicity. The demographic information of the participants involved in the current study is presented below in Table 1.

Table 1

Demographic information for the sample in the study (n=91)

Category	N	%
Gender of Participant		
Male	21	21.7
Female	70	76.9
Ethnicity of the Participant		
New Zealand European	31	34.1
Māori	2	2.2
Pacifica	9	9.9
Asian	25	27.5
MELAA*	6	6.6
Other	10	11.0
Residual	0	0
Multiple Ethnicities	8	8.8

Note. * Middle Eastern/Latin American/African

Of the 91 respondents, 78 had a sibling. The age range of the nearest sibling spanned from 1 to 56 years of age, with a mean age of 21.4 years ($SD = 9.22$). Of the 78 siblings, 29 were male, and 49 were female. Approximately 2/3 of the sample were raised in nuclear family settings with biological parents who were married or in long-term relationships. Furthermore, 55 of the 91 participants reported involvement in a romantic relationship, and only one couple shared an open relationship.

A range of demographic questions probed information regarding the participants, their siblings, family, and romantic partners. First, the participants were questioned about their age, gender, and ethnicity. Next, participants were questioned about their sibling's age, gender, and biological relationship. Participants with more than one sibling answered the questions based on the nearest sibling. Moreover, participants also answered the number of younger and older female and male siblings they had and provided information about their family situation

growing up, including the relationship status between biological parents. Finally, if applicable, participants answered questions about a current or previous romantic relationship. The demographic information of the participant's families and romantic relationships is presented below in Table 2.

Table 2

Demographic information regarding participants' families and romantic relationships (n=91)

Category	n	%
Sibling Status		
No Siblings	13	14.3
Has sibling(s)	78	85.7
Gender of Sibling (closest in age)		
Male	29	37.2
Female	49	62.8
Relationship with Sibling (closest in age)		
Full Biological Sibling	68	87.2
Half Sibling	8	10.3
Adopted Sibling	1	1.3
Missing	1	1.3
Participant's Childhood Living Situation		
Nuclear Family	60	65.9
Biological Mother Only	8	8.8
Biological Father Only	2	2.2
Shared Care	9	9.9
Biological Mother and Stepfather	6	6.6
Biological Father and Stepmother	1	1.1
Adopted	2	2.2
Other	3	3.3
Relationship of Biological Parents		
Married/Long Term Relationship	62	68.1
Divorced	16	17.6
Separated	5	5.5
Never Married	3	3.3
Unknown	1	1.1
Other	4	4.4
Participant's Acting Mother between 0-11 years		
Biological Mother	78	85.7
Stepmother	1	2.2
Adoptive Mother	2	1.1
Grandmother	6	6.6
No One	4	4.4
Participant's Acting Father		
Biological Father	68	75.6
Stepfather	2	2.2
Adoptive Father	1	1.1
Grandfather	1	7.8
Family Friend	7	1.1
Uncle	2	2.2
No one	9	10.0

Instruments

The questionnaire comprised three pre-existing and psychometrically validated scales: The Inventory of Parent and Peer Attachment – Revised, Sibling Relationship Questionnaire, and the Experience in Close Relationships Questionnaire-Revised (Appendix A).

Inventory of Parent and Peer Attachment – Revised

The Inventory of Parent and Peer Attachment – Revised (IPPA-R) was utilised to measure retrospective paternal, maternal, and sibling attachment between 0 to 11 years of age. Armsden and Greenberg (1987) originally invented the IPPA to assess positive and negative effects in important relationships with parents and peers to determine the level of psychological security these attachment figures can provide. This scale measured dimensions such as mutual trust, communication quality, alienation, and anger. The original version of the scale contained 28 attachment items for parents and 25 items for peers. However, the revised version utilised in the present study (IPPA-R) separated the parental measure into maternal and paternal, resulting in 25 items each for the maternal, paternal, and peer attachment subscale (Gullone & Robinson, 2005). Of note, the peer attachment scale was modified for the current study to instead ask questions about sibling attachment by replacing the term 'peer' with 'sibling'. The IPPA-R is a self-report 5-point Likert scale with responses ranging from 1 (almost never or never true) to 5 (almost always or always true). Summing the numerical responses assigned to each question resulted in a total score for each of the three subscales. The scores ranged from 25 (low attachment) to 125 (high attachment) for each attachment measure, with higher scores indicating higher attachment levels and enhanced relationship quality (Gullone & Robinson, 2005). Numerous items from the maternal and paternal attachment scales required reverse coding during data analysis as they were negatively framed.

A previous study that has assessed the IPPA-R has reported high reliability and Cronbach's alpha for paternal attachment (.89), maternal attachment (.87), and peer attachment (.92) (Gullone & Robinson, 2005). The IPPA-R has been recognised as a valid measure with moderate to high correlations with comparable measures, including the Family Environmental Scale.

Sibling Relationship Questionnaire

The Sibling Relationship Questionnaire (Furman & Buhrmester, 1985), child version, was used to assess childhood sibling relationship quality from a retrospective perspective. The Sibling Relationship Questionnaire (SRQ) is a self-report measure that consists of 16 scales in 2 different versions, one with 48 items and one with 39 items. The current study utilised the

shorter version. Principal component analysis revealed that the 16 subscales comprised four factors: Conflict, Warmth, Power/Relative Status, and Rivalry. Furman and Burhmester (1985) argued that these four factors defined the sibling relationship and consequently developed the SRQ to measure these aspects of the sibling relationship. The dimension of Conflict assessed the level of fights/arguments, hostility, disagreement, and competition amongst siblings. Warmth assessed the level of intimacy, cooperation, respect, friendship, affection, and similarity amongst siblings (Furman & Buhrmester, 1985). The Rivalry dimension described certain competition types that incorporated parental affection and attention, but the current study assessed Rivalry in terms of the level of perceived parental favouritism for one sibling compared to the other. Lastly, Power/Relative Status looked at the power distribution amongst siblings. The power distribution between siblings was either equal or unequal, with one sibling exerting greater dominance and less nurturance over the other. The present study utilised the SRQ as a proxy measure of sibling attachment.

Scoring the SRQ can be complex (Furman & Buhrmester, 1985). All subscales of the SRQ utilised a 5-point Likert scale with the following response options: 1 (Hardly at all), 2 (Not too much), 3 (Somewhat), 4 (Very much), and 5 (Extremely much). This excluded the maternal and paternal partiality scales in which the response options varied from '*almost always him/her (favoured)*' to '*almost always me (favoured)*' and the middle point of '*about the same*'. Higher scores on the scale indicate higher levels of warmth and reduced conflict between siblings (Furman & Buhrmester, 1985). Overall, the SRQ has good psychometric properties, and it has continuously displayed high reliability and validity when utilised across various studies for assessing the quality of sibling relationships (Dunn, 2000; Buhrmester & Furman, 1990; McGuire et al., 1996; Noller & Northfield, 2000).

The SRQ has been validated *a priori* with the items loaded onto the four factors (Furman & Burhmester, 1985). In fact, existing literature has described that the four factors (Warmth, Conflict, Rivalry, and Power/Relative Status) have been extracted from numerous sibling factors, including affection, similarity, prosocial, paternal partiality, maternal partiality, nurturance of and by a sibling, the dominance of and by a sibling, antagonism, intimacy, competition, companionship, admiration of and by a sibling, and quarrelling (Furman & Buhrmester, 1985).

The Experiences in Close Relationships– Revised

The Experiences in Close Relationships – Revised (ECR-R) is a self-report questionnaire with 36 items that evaluated the current style of adult attachment in romantic relationships (Fraley et al., 2000). Individuals were assessed on two different subscales of

romantic attachment on the ECR-R: Avoidance and Anxiety. The Avoidance subscale examined the extent to which individuals reported discomfort in experiencing closeness with and secure dependence on others. The Anxiety subscale assessed the extent of fear of rejection and abandonment and whether individuals were secure or insecure regarding their romantic partner's availability and responsiveness. The Avoidance subscale contained 18 items (e.g., "I prefer not to show a partner how I feel deep down") and assessed difficulties in developing an intimate bond with their partner and general discomfort with intimacy (Fraley et al., 2000). The Anxiety subscale also included 18 items (e.g., "I often worry that my romantic partner doesn't really love me") and assessed one's worry about their romantic relationship, relationship involvement, fear of abandonment, and frequent search for their partner's care and attention. Participants rated their feelings about their current or previous romantic relationship on a 7-point Likert scale which ranged from 1 (strongly disagree) to 7 (strongly agree). The scores for the subscales were attained by averaging items 1 – 18 for the Anxiety subscale and averaging items 19 – 36 for the Avoidance subscale (Fraley et al., 2000). Lower ECR-R scores indicated increased romantic satisfaction, and higher ECR-R scores indicated decreased satisfaction. In previous research, both of the ECR-R subscales, Anxiety and Avoidance, have demonstrated high levels of internal reliability ($\alpha = .90$) whilst external validity has been demonstrated through correlation with other instruments that measure adult attachment, relationship satisfaction, personality, and psychopathology.

Procedure

Announcements were made in lectures and tutorials regarding the research project's aim, and the questionnaires were distributed to students enrolled in undergraduate health science programmes at the Auckland University of Technology (AUT), north shore campus. The inclusion criteria required participants to be at least 18 years of age and have at least one sibling. Participants answered the SRQ and IPPA-R regarding their attachment to their siblings and parents during childhood, specifically between 0 and 11 years of age. The reason for this was to obtain a retrospective evaluation of the quality of these attachments. Participants with more than one sibling were asked to base their responses on the nearest sibling with the expectation that these siblings would be the ones having the most interactions. Moreover, participants that completed the ECR-R about their previous romantic relationship were requested to respond based on how they felt when the relationship existed.

Verbal instructions emphasised the eligibility criteria and the significance of completing the demographic information in addition to the entire questionnaire. The questionnaire was distributed simultaneously with the participant information sheet (Appendix B), and instructions were provided on how to answer each scale in the questionnaire. Moreover, participants had the

option of withdrawing from the research at any time without incurring any disadvantage until returning the questionnaire to the researcher, as removal after this point was impossible due to the anonymity of the responses. The questionnaire took between 15 to 20 minutes to complete, and the data collection process occurred across two weeks. Further data collection was scheduled but failed to be completed due to the sudden and unexpected implementation of the nationwide lockdown in New Zealand, restricting researchers to conduct data analysis with the data collected prior. In spite of that, a total of 91 participants sufficiently completed the questionnaire, and their responses were utilised in the analysis.

Data Analysis

The data was initially entered into an Excel spreadsheet and later imported into Jamovi (Version 2), where conditioning of the data occurred (e.g., reverse coding of scale items), computation of composite variables, and data were analysed. Various statistical analyses investigated the connection between parental attachment, sibling attachment, and romantic relationship quality. These included descriptive statistics, construction of summated scale, evaluating the reliability of the three main scales utilised in this study, and the performance of regression analyses. The descriptive analysis included the computing of descriptive statistics for the sample. This was followed by computing Cronbach's alpha which assessed scale reliability. Cronbach's alpha values above .70 were considered acceptable. Subsequently, the strength of the association between the three instruments was tested by conducting the Pearson r product-moment correlation analysis to identify bivariate relationships amongst the variables. Correlations were statistically significant at the probability value of $p < .05$, and the correlations were interpreted by implementing Cohen's (1988) guidelines for interpreting effect sizes. Correlation coefficients between .10 and .29 represented a weak association; coefficients with an effect size above $>.30$ signified a moderate correlation, whereas coefficients .50 or above represented a strong association.

Furthermore, regression analyses were conducted to measure the effects of sibling attachment, maternal attachment, and paternal attachment on the measures of romantic relationship quality. Two regression analyses were performed, with both analyses assigning the total ECR-R score as the dependent variable. The first analysis deployed the following predictor variables: the three attachment total scores (*viz* Maternal, Paternal, and Sibling), the participant's gender and age, as well as the gender and age of the nearest sibling. The second regression analysis removed the three attachments total scores and replaced them with the four SRQ subscales. For both analyses, evidence was sought but not found for collinearity across variables, validating this analytical approach.

Ethical Considerations

Data collection for this study commenced after ethics approval was obtained from the Auckland University of Technology's Ethics Committee (AUTEK) (Appendix C) to come into effect on the 16th of June 2021 for three years until the 16th of June 2024. The research proposal was approved on the 27th of April 2021 by the Postgraduate Research Committee (Appendix D).

The current research ensured informed consent was attained by including an information sheet at the beginning of the questionnaire. The questionnaires front page clearly stated that the completion of the questionnaire would be taken as consent for participation. Participant confidentiality and privacy were ensured through the anonymity of responses. No identifying information was collected, excluding age, ethnicity, gender, the duration of their romantic relationship, age difference in months/years with their sibling, and whether the participant was older or younger than their sibling. Traditional 'positivist' quantitative methods consider researchers in the 'expert' position, which may be incongruent with the three principles of the Treaty of Waitangi: participation, partnership, and protection. Consequently, the terminology used in the participant information and the questionnaire were adapted to avoid using academic jargon and language that laypersons may not understand. This was done to ensure that the research remained as collaborative as possible and avoid patronising the respondents. This may assist in decreasing the perception of the researcher holding the 'expert' position.

Results

Preliminary Analyses

Table 3 displays the descriptive statistics, including the total number of items, mean, standard deviation, and Cronbach's alpha coefficient (α_c) for the nine subscales used in this study. The mean scores for all the scales ranged from 2.90 to 3.48. Only two scales, Avoidance and Rivalry, had mean scores below 3.00, whilst the Anxiety scale had the highest mean score of 3.48 ($SD = 1.13$). The standard deviation for all the scales ranged from .60 to 1.13. Overall, no extreme averages were reported, and all scales had sufficient standard deviations. Excellent internal consistency was found for the following scales, with Cronbach alphas above .80: Maternal Attachment ($a_c = .90$), Paternal Attachment ($a_c = .89$), Sibling Attachment ($a_c = .95$), Avoidance ($a_c = .91$), Anxiety ($a_c = .89$), and the Warmth scale ($a_c = .83$).

Notably, all scales were reliable and demonstrated good internal consistency, excluding the Rivalry scale, which failed to meet the cut off criterion (.70). This suggested that this scale had inadequate levels of internal consistency. However, Cronbach's alpha was likely low due to the small sample size and the low number of items (six) within this scale. Therefore, it was decided that this scale would be retained in the analysis.

Table 3

Descriptive statistics, including Cronbach's Alpha (a_c) if item deleted, for each of the summated scales for the Inventory of Parent and Peer Attachment – Revised (IPPA-R), Experiences in Close Relationships Questionnaire-Revised (ECR-R), and the Sibling Relationship Questionnaire (SRQ)

Scale	Number of Items	M	SD	a_c
IPPA- R	75			
Maternal Attachment	25	3.24	.96	.90
Paternal Attachment	25	3.05	.86	.89
Sibling Attachment	25	3.31	.86	.95
ECR-R	36			
Avoidance	18	2.93	1.09	.91
Anxiety	18	3.48	1.13	.89
SRQ	39			
Warmth	15	3.02	.65	.83
Conflict	6	3.09	.82	.77
Power/Relative Status	12	3.14	.60	.71
Rivalry	6	2.90	.64	.52

Maternal Attachment Scale

Presented in Table 4 is the descriptive statistics, including the reliability analysis for the Maternal Attachment scale. The mean ranged from 2.51 to 4.14, and the SD ranged from 1.16 to 5.73. All the items had sufficient standard deviations and no extreme averages. The last column of the table, ‘Cronbach’s Alpha if Item Deleted’, depicted how each item affected the scale’s reliability. Whilst Item 20 had the highest (.93), several items had an equally low (.87) Cronbach’s alpha. The ‘Cronbach’s Alpha if Item Deleted’ for each item of the Maternal Attachment scale was above .70, and no significant impacts were created on the overall Cronbach’s alpha of .90 (see Table 3). Therefore, all the items were included in the analysis as they indicated satisfactory internal consistency and the Maternal Attachment scale was considered acceptable for this research.

Table 4

Mean (M), Standard Deviation (SD), and Cronbach’s Alpha (α_c) if item deleted for each item of the Maternal Attachment Scale of the IPPA-R

Item	M	SD	Cronbach’s Alpha if Item Deleted
Maternal Attachment			
Item 1	3.45	1.19	.87
Item 2	3.99	1.16	.87
Item 3*	4.14	1.19	.87
Item 4	3.82	1.31	.87
Item 5	3.40	1.38	.87
Item 6*	2.92	1.53	.87
Item 7	3.53	1.17	.87
Item 8*	3.24	1.41	.87
Item 9*	3.00	1.47	.87
Item 10*	3.44	1.36	.87
Item 11*	2.51	1.29	.87
Item 12	3.25	1.34	.89
Item 13	3.18	1.33	.87
Item 14*	2.79	1.32	.87
Item 15	2.93	1.37	.87
Item 16	2.78	1.34	.87
Item 17*	3.20	1.29	.87
Item 18*	3.36	1.33	.87
Item 19	2.92	2.48	.88
Item 20	3.64	5.73	.93
Item 21	3.06	1.30	.87
Item 22	3.66	1.44	.87
Item 23*	2.71	1.31	.87
Item 24	2.93	1.40	.89
Item 25	3.26	1.39	.87

Note. * Items are reverse scored

Paternal Attachment Scale

Table 5 shows the descriptive statistics, including the reliability analysis for the Paternal Attachment Scale. The mean scores ranged from 2.17 to 4.00, and the SD ranged from 1.25 to 4.69. No extreme averages were reported, and all the items had sufficient standard deviations. Item 1 had the highest (.92), and countless items had the lowest (.88) ‘Cronbach’s Alpha if Item Deleted’ values. As all the items had Cronbach’s alpha values above .70, no significant influences were created on the scales overall Cronbach’s alpha score of .89 (see Table 3). Therefore, all items were included in the analysis and this scale was considered appropriate for this research.

Table 5

Mean (M), Standard Deviation (SD), and Cronbach’s Alpha (α_c) if item deleted for each item of the Paternal Attachment Scale of the IPPA-R

Item	M	SD	Cronbach’s Alpha if Item Deleted
Paternal Attachment			
Item 1	3.78	4.69	.92
Item 2	3.50	1.44	.88
Item 3*	4.00	1.35	.89
Item 4	3.59	1.31	.88
Item 5	2.90	1.39	.88
Item 6*	2.85	1.41	.88
Item 7	2.78	1.36	.88
Item 8*	3.27	1.34	.88
Item 9*	3.12	1.46	.89
Item 10*	3.26	1.45	.88
Item 11*	2.17	1.25	.88
Item 12	3.03	1.37	.88
Item 13	3.29	1.34	.88
Item 14*	2.81	1.40	.89
Item 15	2.54	1.41	.88
Item 16	2.18	1.28	.88
Item 17*	3.37	1.42	.88
Item 18*	3.46	1.39	.88
Item 19	2.51	1.42	.88
Item 20	2.88	1.41	.88
Item 21	2.91	1.43	.88
Item 22	3.60	1.47	.88
Item 23*	2.92	1.38	.89
Item 24	2.59	1.46	.88
Item 25	2.86	1.49	.88

Note. * Items are reverse scored

Sibling Attachment Scale

Table 6 displays the descriptive statistics, including the reliability analysis for the Sibling Attachment Scale. The mean ranged from 2.61 to 4.09, and the SD ranged from 1.12 to 1.44. No extreme averages were reported, and all the items had good standard deviation scores. Item 9 had the highest (.96), and several items attained the lowest ‘Cronbach's Alpha if Item Deleted’ scores. All items of this scale had Cronbach's alpha values greater than .70 and were, therefore, retained in the analysis as they did not significantly impact the overall Cronbach's alpha (.95) for the Sibling Attachment scale. Essentially, the scores highlighted adequate levels of internal consistency and this scale was considered acceptable for research purposes.

Table 6

Mean (M), Standard Deviation (SD), and Cronbach's Alpha (a_c) if item deleted for each item of the Sibling Attachment Scale of the IPPA-R

Item	M	SD	Cronbach's Alpha if Item Deleted
Sibling Attachment			
Item 1	3.25	1.31	.94
Item 2	3.38	1.33	.94
Item 3	3.20	1.32	.94
Item 4*	3.61	1.24	.95
Item 5*	4.09	1.31	.94
Item 6	3.17	1.36	.94
Item 7	2.80	1.35	.94
Item 8	4.04	1.22	.94
Item 9*	2.61	1.33	.96
Item 10*	2.90	1.34	.95
Item 11*	3.43	1.44	.95
Item 12	3.33	1.21	.94
Item 13	4.03	1.12	.94
Item 14	3.71	1.27	.94
Item 15	3.17	1.35	.94
Item 16	3.17	1.37	.94
Item 17	3.41	1.28	.94
Item 18*	3.06	1.22	.95
Item 19	3.19	1.44	.94
Item 20	3.88	1.22	.94
Item 21	3.64	1.19	.94
Item 22*	2.72	1.19	.95
Item 23*	2.94	1.29	.95
Item 24	3.06	1.34	.94
Item 25	2.99	1.36	.94

Note. * Items are reverse scored

Sibling Relationship Questionnaire

The descriptive statistics, including the reliability scale analysis, is presented in Table 7 for the Sibling Relationship Questionnaire. The item means differed for each subscale: Warmth (2.52 – 3.33), Conflict (2.71 – 3.57), Power/Relative Status (2.56 – 3.98), and Rivalry (2.56 – 3.19). Likewise, the SD range for each subscale was also different; Warmth (1.04 – 1.40), Conflict (1.08 – 1.34), Power/Relative Status (1.11 – 1.41), and Rivalry (1.06 – 1.25). No extreme averages were reported, and all the items had sufficient standard deviations.

Regarding the ‘Cronbach's Alpha if Item Deleted’, various items in the Warmth subscale had equally high values (.83), whilst Item 23 had the lowest Cronbach's alpha. Additionally, numerous items in the Conflict, Power/Relative Status, and Rivalry subscale had Cronbach's alpha scores below .70. The low values were attributed to the small sample size and the low number of items within each subscale. Despite the low values, these three scales were retained in the analysis, alongside the Warmth subscale, as many items were close to the cut-off criterion and the overall Cronbach's alpha scores for the subscales were above or close to .70.

Table 7

Mean (M), Standard Deviation (SD), and Cronbach's Alpha (α_c) if item deleted for items of the Warmth, Conflict, Power/Relative Status, and the Rivalry subscales of the Sibling Relationship Questionnaire

Item	M	SD	Cronbach's Alpha if Item Deleted
Warmth			
Item 1	3.03	1.11	.80
Item 8	3.32	1.29	.83
Item 9	2.92	1.15	.81
Item 11	2.52	1.29	.81
Item 12	3.71	1.22	.82
Item 14	3.33	1.13	.83
Item 15	3.20	1.04	.81
Item 17	2.86	1.21	.81
Item 24	2.67	1.40	.81
Item 25	2.68	1.10	.83
Item 27	3.32	1.10	.81
Item 28	3.18	1.31	.83
Item 30	3.17	1.27	.80
Item 31	2.80	1.29	.81
Item 33	2.59	1.15	.83
Conflict			
Item 10	2.71	1.34	.72
Item 13	3.37	1.08	.70
Item 16	3.45	1.15	.75
Item 26	3.57	1.20	.75
Item 29	2.74	1.19	.68
Item 32	2.71	1.31	.79
Power/Relative Status			
Item 3	2.81	1.34	.66
Item 4	3.11	1.30	.70
Item 5	2.98	1.39	.69
Item 6	3.95	1.17	.68
Item 19	2.84	1.15	.66
Item 20	3.98	1.11	.67
Item 21	3.38	1.25	.64
Item 22	3.52	1.41	.68
Item 35	3.05	1.11	.75
Item 36	2.63	1.14	.70
Item 37	2.90	1.15	.73
Item 38	2.56	1.24	.71
Rivalry			
Item 2	3.19	1.18	.43
Item 7	2.97	1.22	.28
Item 18	2.75	1.20	.42
Item 23	3.05	1.06	.41
Item 34	2.56	1.25	.57
Item 39	2.86	1.14	.63

Experiences in Close Relationships – Revised

Table 8 shows the descriptive statistics, including the reliability analysis of the Experiences in Close Relationships - Revised Scale. For the Anxiety subscale, the mean ranged from 2.41 to 4.29, and the SD ranged from 1.67 to 2.14. For the Avoidance subscale, the mean and SD ranged from 2.44 to 4.19 and 1.57 to 2.17, respectively. No extreme averages were reported, and all the items had sufficient standard deviations. Numerous items had the lowest whilst Item 11 had the highest Cronbach's alpha if Item Deleted for the Anxiety scale.

Similarly, various items had the lowest and highest Cronbach's alpha for the Avoidance scale. All 'Cronbach's Alpha if Item Deleted' were above .70 and did not impact the overall Cronbach's alpha scores for both scales. This portrayed sufficient levels of internal consistency for both scales; thus, the ECR-R measure was considered appropriate for inclusion in the analysis.

Table 8

Mean (M), Standard Deviation (SD), and Cronbach's Alpha (α_c) if item deleted for each item of the Anxiety and Avoidant Scales of the Experiences in Close Relationships - Revised

Item	M	SD	Cronbach's Alpha if Item Deleted
Anxiety subscale			
Item 1	4.12	2.00	.88
Item 2	4.04	1.90	.88
Item 3	3.47	1.99	.88
Item 4	4.12	1.82	.88
Item 5	3.84	1.96	.88
Item 6	3.82	1.88	.88
Item 7	2.98	1.77	.88
Item 8	3.35	1.80	.88
Item 9*	4.29	1.95	.89
Item 10	2.41	1.74	.89
Item 11*	3.71	2.14	.90
Item 12	2.61	1.68	.88
Item 13	3.00	1.67	.88
Item 14	2.76	1.83	.89
Item 15	3.65	1.97	.89
Item 16	3.47	2.05	.88
Item 17	4.08	2.12	.89
Item 18	2.86	1.95	.89
Avoidance subscale			
Item 19	3.71	2.17	.91
Item 20*	2.88	1.70	.90
Item 21	4.19	1.98	.90
Item 22*	2.77	1.57	.90
Item 23	3.37	1.92	.90
Item 24	2.63	1.77	.90
Item 25	2.83	1.91	.91
Item 26*	2.69	1.58	.90
Item 27*	2.77	1.70	.90
Item 28*	2.62	1.63	.90
Item 29*	2.50	1.72	.90
Item 30*	2.69	1.79	.90
Item 31*	2.60	1.62	.90
Item 32	2.63	1.62	.90
Item 33*	3.27	1.65	.90
Item 34*	3.38	1.84	.90
Item 35*	2.44	1.76	.90
Item 36*	2.77	1.57	.90

* These items are reversed scored

Correlational Analysis

Table 9 displays the correlation matrix of the Pearson product-moment correlation coefficients computed to analyse the relationship between the predictor and outcome variables. The predictor variables included the four SRQ subscales, the ECR-R total score, the three IPPA-R subscales, participant's age, and siblings age. The pattern of correlations between the variables indicated the usefulness of a regression analysis.

Table 9

Pearson's Correlations between the Sibling Relationship Questionnaire (SRQ), the Experiences in Close Relationships – Revised (ECR-R), the Inventory of parent and peer attachment – revised (IPPA-R), participant's age, and siblings age (N= 91)

Measure	1	2	3	4	5	6	7	8	9	10
1. Rivalry	1									
2. Power/ Relative Status	-.20	1								
3. Conflict	.71***	-.12	1							
4. Warmth	.73***	-.07	.82***	1						
5. ECR-R	-.22	.03	-.27	-.13	1					
6. Sibling attachment	.50***	-.22	.72***	.63***	-.38	1				
7. Paternal attachment	.15	.01	.08	.02	.12	.08	1			
8. Maternal attachment	.17	-.27*	.05	.09	-.13	.34*	.22	1		
9. Age	-.02	-.06	-.07	-.07	.18	-.13	-.09	-.24	1	
10. Sibling's Age	-.10	.17	-.16	-.09	.07	-.09	-.10	-.14	.75***	1

Note. * $p < .05$; ** $p < .01$, *** $p < .001$

Maternal Attachment, Paternal Attachment, Sibling Attachment, and Romantic Quality

Table 9 showed that paternal attachment did not find any statistically significant correlations with any other variables. This meant that increased or decreased attachment with a paternal figure is unlikely to have an impact on an individual's attachment with their sibling, mother, and romantic partner. Therefore, paternal attachment does not influence sibling attachment, paternal attachment, or later romantic relationship quality.

In contrast, a significant, moderate, positive correlation was found between maternal attachment and sibling attachment, $r=.34$, $n=91$, $p<.05$. This suggested that increased

attachment with one of these attachment figures, either mother or sibling, results in increased attachment in the other. Additionally, maternal attachment revealed a significant but weak negative correlation with Power/Relative Status, $r=.27$, $n=91$, $p<.05$. This indicated that an increase in maternal attachment is associated with the reduced demonstration of Power/Relative Status amongst siblings. Besides this, maternal attachment did not report statistically significant correlations with any other variables and therefore created no influence on paternal attachment, the other three factors of the sibling relationship and age, and quality of romantic relationships.

Sibling Attachment and Romantic Quality

As shown in Table 9, significant correlations were reported between sibling attachment and most measures of sibling relationship quality. Sibling attachment was found to have a moderate positive correlation with Rivalry, $r=.50$, $n=91$, $p<.001$. This indicated that increased sibling attachment was associated with increased Rivalry amongst siblings. Sibling attachment also reported strong correlations with Conflict, $r=.72$, $n=91$, $p<.001$, and Warmth, $r=.63$, $n=91$, $p<.001$. Both of these significant findings indicated that increased sibling attachment is associated with higher levels of Conflict and Warmth amongst siblings.

Furthermore, Warmth represented a significant positive correlation with Rivalry, $r=.73$, $n=91$, $p<.001$, and Conflict, $r=.82$, $n=91$, $p<.001$. This suggested that an increase in sibling Warmth during childhood was also linked with an increase in sibling Rivalry and Conflict. Furthermore, a strong significant positive correlation was reported between Conflict and Rivalry, $r=.71$, $n=91$, $p<.001$. This indicated that an increase in Conflict amongst siblings also results in increased sibling Rivalry. In addition to this, sibling attachment did not significantly correlate with Power/Relative Status and romantic relationship quality (satisfaction). This suggested that different levels of attachment between siblings do not impact the amount of Power/Relative Status demonstrated amongst siblings, nor does it impact the quality and satisfaction of romantic relationships. Interestingly, no statistically significant correlations were reported between romantic relationship quality and the quality of sibling relationships, as measured by sibling relationship factors, including Rivalry, Power /Relative Status, Conflict, and Warmth.

Age, Sibling Age, and Romantic Relationship Satisfaction

Table 9 exhibited a strong and significant positive correlation between sibling age and participant age, $r=.75$, $n=91$, $p<.001$. This indicated that an increase in sibling age was associated with increased age of individuals. Apart from this association, participant age and

sibling age revealed no significant correlations with the quality of sibling relationships, romantic relationships, and parental and sibling attachment.

Regression Analysis

Based on the previous results, a regressions analysis was conducted to determine whether each predictor variable (Gender, participant age, sibling gender, sibling age, SRQ subscales) had any contributions in influencing the model predicting the quality of romantic relationships in adults (via the ECR-R: see Table 10).

Model Summary for the independent variables (predictors) explaining Romantic Relationship Quality

The model summary reported the strength of the relationship between the model and the dependent variable (romantic relationship quality). A multiple correlation coefficient R-value of .65 was attained by entering all the predictors simultaneously. This indicated a strong relationship was present between the observed and predicted values. All the predictors combined, including gender, participant age, sibling gender and age, maternal, paternal, and sibling attachment, accounted for 42% of the variance in romantic relationship quality, $F(7, 27) = 2.80, p < .05$. The remaining 58% of the variation was impacted by factors beyond the predictors in this model. The statistical significance ($p = .03$) was $< .05$, indicating that the quality of romantic relationships was significantly predicted by the independent variables in the regression model.

Table 10 shows that only two variables, participant age and sibling attachment, were statistically significant predictors of romantic relationship quality. Due to the nature of the ECR-R scale, lower ECR-R scores indicate increased satisfaction and romantic relationship quality, whereas higher ECR-R scores suggest decreased satisfaction and romantic relationship quality. Therefore, participant age represented a strong, significant, and positive association with the ECR-R scores, $r = .65, n = 91, p < .05$, suggesting the increasing age of individuals results in decreased satisfaction and quality in romantic relationships. In addition to this, sibling attachment best predicted romantic relationship quality. Sibling attachment reported a significant moderate and negative association, $r = -.41, n = 91, p < .05$, with the ECR-R scores. This indicated that an increase in sibling attachment resulted in increased satisfaction and quality in one's romantic relationship. It was particularly interesting that maternal and paternal attachment failed to report statistically significant findings with the ECR-R scores, and ultimately romantic relationship quality.

Table 10

Regression Analysis Summary for Gender, Participant's Age, Sibling Gender, Sibling Age, and Attachment variables predicting satisfaction in romantic relationships (N = 91)

Predictor	B	SE	t	p-value	β
Gender	28.67	16.40	1.75	.09	.88
Participant's Age	2.90	1.09	2.66	.01	.65*
Sibling Gender	-6.79	11.19	-.61	.55	-.21
Sibling Age	-1.67	.93	-1.80	.08	-.45
Maternal Attachment	.01	.23	-.01	1.00	.01
Paternal Attachment	.15	.27	.54	.60	.09
Sibling Attachment	-.62	.24	-2.53	.02	-.41*

Note. * $p < .05$

Model Summary for the independent variables (predictors) explaining Romantic Relationship Quality

The model summary reported a multiple correlation coefficient R -value of .61, which suggested a strong association between the observed and predicted values. All predictors combined, including gender, sibling gender, Warmth, Conflict, Power/Relative Status, Rivalry, participant's age, and sibling age, explained 37% of the variance in romantic relationship quality, $F(8, 28) = 2.04$, $p < .05$. The other 63% variance was influenced by aspects other than the predictors of this model and the statistical significance ($p = .04$) was $< .05$. Essentially, all these results suggested that the linear combination of independent variables were a significant predictor of romantic relationship quality.

As a result of the significant finding for sibling attachment in Table 10 ($r = -.41$, $n = 91$, $p < .05$), further analysis was conducted to determine which sibling relationship factor could influence the outcome score with romantic relationship quality. In the second analysis, predictor variables assessing attachment were removed and were replaced with subscales for the Sibling Relationship Questionnaire, namely, Warmth, Conflict, Power/Relative Status, and Rivalry, as presented in Table 11. This resulted in producing four fascinating findings.

Despite Table 10 showing a negative sibling attachment score, further exploration of the sibling measures indicated that the Warmth facet could explain the negative association between sibling attachment and romantic relationship quality. Sibling Warmth was found to have a strong, positive, and significant association with the ECR-R scores, $r = .64$, $n = 91$, $p < .05$. This suggested that sibling Warmth during childhood was associated with decreased satisfaction and quality in romantic relationships due to the nature of the ECR-R scale. Additionally, Conflict reported a strong and significant association with the ECR-R scores, $r = -.70$, $n = 91$,

$p < .05$. Due to the nature of the ECR-R scale, the negative relationship between these variables suggested increased sibling conflict was associated with increased quality in romantic relationships. Higher amounts of conflict, such as fights and disagreements between siblings in childhood, essentially increase the success of later romantic relationships. Interestingly, no statistically significant associations were reported for Power/Relative Status and Rivalry with the romantic relationship quality, indicating that these sibling relationship factors do not influence the quality of romantic relationships.

Furthermore, the regression analysis revealed that participant age reported a significant and strong correlation with romantic relationship satisfaction. As this association was positive, this indicated that as individuals age across time, the quality of their romantic relationships tends to deteriorate rather than enhance. Last but not least, a significant negative relationship was reported between Sibling Age and romantic relationship quality, $r = -.55$, $n = 91$, $p < .05$. The strong association between these variables suggested that individuals experience better quality in their romantic relationships as their sibling's age.

Table 11

Regression Analysis Summary for Gender, Sibling Gender, Warmth, Conflict, Power/Relative Status, Rivalry, Participant's Age, and Sibling Age predicting the quality of Romantic Relationships (N = 91)

Predictor	B	SE	T	p-value	β
Gender	15.38	15.28	1.00	.32	.46
Sibling Gender	-9.14	10.21	-.90	.38	-.28
SRQ: Warmth	2.26	1.15	1.96	.04	.64*
SRQ: Conflict	-4.73	1.86	-2.54	.02	-.70*
SRQ: Power/Relative Status	.43	1.25	.35	.73	.06
SRQ: Rivalry	-2.90	2.35	-1.23	.23	-.33
Participant's Age	3.37	1.23	2.74	.01	.63*
Sibling Age	-2.50	1.03	-2.43	.02	-.55*

Note. * $p < .05$

Discussion

The present study had the overarching aim to examine whether parental attachment and sibling attachment would influence the quality of later life romantic relationships. It was of particular interest to assess parental and sibling attachment from a childhood lens. Moreover, sibling attachment was assessed with the nearest sibling. Due to the nature of the ECR-R scale, lower ECR-R scores indicated increased satisfaction and romantic relationship quality, whereas higher ECR-R scores suggested decreased satisfaction and romantic relationship quality.

To address the research question, three hypotheses were proposed. Firstly, it was hypothesised that maternal, paternal, and sibling attachment would each correlate negatively with the ECR-R scores. Due to the nature of the ECR-R scale, this hypothesis indicated a positive correlation between parental and sibling attachment and later life romantic relationships. The first hypothesis was partially supported based on the findings as sibling attachment was the only attachment to predict future romantic quality. Maternal and paternal attachment failed to demonstrate statistically significant relationships with the quality of later life romantic relationships. The second hypothesis had proposed that sibling warmth during childhood would have a significant negative correlation with the ECR-R scores. However, this hypothesis was rejected due to the non-significant association between these variables. Lastly, it was hypothesised that childhood sibling conflict would have a significant negative correlation, whilst sibling power/relative status and rivalry would have a significant positive correlation with the ECR-R scores due to the nature of the ECR-R scale. Interestingly, a significant association was found only between sibling conflict and romantic relationship quality, whilst power/relative status and rivalry reported insignificant associations with romantic quality. Therefore, the third hypothesis was partially supported.

In addition to the proposed hypotheses, other variables in the regression analyses, including participant age and sibling age, revealed significant associations with the ECR-R scores, and essentially, romantic relationship quality. Furthermore, the results of the correlation analysis reported an insignificant correlation between sibling attachment and parental attachment, whilst maternal attachment was moderately correlated with sibling attachment. As a result of this study's focus on parental and sibling attachment, these findings were essential to discuss following the hypotheses.

Overall, one of the most significant findings of this research included childhood sibling attachment as the best predictor for the quality of later life romantic relationships. In comparison, maternal and paternal attachment during childhood did not impact the quality of one's future romantic relationships despite the extensive involvement of parents in their

children's lives. Ultimately, these findings highlighted the importance of maintaining strong and healthy attachments with siblings during childhood, leading to better outcomes in future romantic relationships.

Hypothesis One: Attachment Relationships and Romantic Relationship Quality

Sibling Attachment and Romantic Relationship Quality

First and foremost, it was hypothesised that maternal, paternal, and sibling attachment during childhood would each correlate negatively with the ECR-R scores. However, due to the nature of the ECR-R scale, this hypothesis indicated a positive correlation between parental and sibling attachment and later life romantic relationships as lower ECR-R scores suggest increased romantic quality.

To address this hypothesis, a regression analysis was conducted. The findings reported evidence of a significant negative correlation between sibling attachment and the ECR-R scores, suggesting that individuals with strong sibling attachments in childhood experience increased quality and satisfaction in future romantic relationships. This result can be understood in the context of the attachment theory suggesting positive experiences with attachment figures, such as siblings, result in individuals developing positive outlooks of themselves and their social relationships (Mikulincer & Shaver, 2012). Thus, pleasant sibling experiences in childhood involving love, warmth, and trust can increase the attachment levels amongst siblings. This allows individuals to become more tolerant, sympathetic, and the best versions of themselves (Mikulincer & Shaver, 2012). Furthermore, the perspectives and feelings of attachment with siblings have a high likelihood of transference to romantic partners (Brumbaugh, 2017). Consequently, individuals with a sibling essentially develop better socialisation skills and increased confidence in seeking interpersonal relationships, including romantic relationships characterised by positive qualities (Cooper et al., 1998). Thus, over time, partners are seen shifting to the top of the attachment hierarchy, becoming one of the most crucial attachment figures (Fraley & Tancredy, 2012).

Furthermore, the attachment theory has suggested that the relationship formed between a child and an attachment figure is vital for their emotional development (Passanisi et al., 2015). Attachment relationships formulate templates in how individuals cope in relationships and deal with distressing situations. Many factors that define the sibling relationship are also present within romantic relationships. Thus, individuals who report positive and secure attachments with their

siblings in childhood are likely to have acquired skills and techniques from each other's presence in effectively coping in different relationships, including romantic relationships (Cooper et al., 1998). As a result, sibling relationships have been considered significant across the lifespan due to their ability to influence romantic relationships in adulthood (Robertson et al., 2014).

Most importantly, the current study found that sibling attachment was the best and only predictor of later life romantic quality, compared to any other attachment (maternal and paternal). The sibling relationship has been described as the most enduring, influential, and unique bond of all family relationships (Bank & Kahn, 1997). These participants have likely had positive family environments with strong and secure attachments between, enabling them to develop favourable interpersonal styles that have later extended into their romantic relationships. This has resulted in the experience of increased satisfaction with their romantic partners, enhancing the overall quality of their romantic relationships (Ackerman et al., 2013).

Parental Attachment and Romantic Relationship Quality

Compared to the findings for sibling attachment, it was surprising that no significant correlations were reported for maternal attachment and paternal attachment and the ECR-R scores. In the past, research studies have provided evidence for both of these attachments demonstrating significant associations with romantic relationship quality (Crockett & Randall, 2006).

Several reasons could help explain the non-significant association between these attachment variables and later life romantic quality. First, it is possible that no association may have existed amongst these variables for the student population in this study. Secondly, it is also likely that certain participants may have had turbulent childhoods with disruptive or disorganised attachments with their mother and father. This may have resulted in inconsistent attachment styles with parents, negatively impacting the ability of participants to develop quality romantic relationships; thus, influencing their responses. Consequently, the attachments with parents may not have contributed at all to the quality of romantic relationships for these participants. Additionally, there is a likelihood that participants may have had better attachments with their parents at a later life stage, such as adolescence or adulthood. This research only focused on attachments with parents during childhood, which may have led to this research failing to encapsulate the best experiences with these attachment figures.

This finding can also be explained by past research suggesting that if a relationship fails to provide individuals with what they require, they will compensate for this inadequacy by focusing on other relationships to provide what they need (Milevsky, 2005). Parental attachment

is only one of many factors that contribute to the functioning of relationships, and there are many other factors that affect the functioning and success of romantic relationships (Mikulincer & Shaver, 2008). Insecure or weak attachment by parents during childhood significantly increases the likelihood of children developing a strong attachment with their sibling (Yaremych & Volling, 2018). This appears to have been the case for the current participants, as a significant association has been reported between sibling attachment and romantic relationship quality. Strong attachments between siblings can compensate for the lack of satisfactory attachments with others (Yaremych & Volling, 2018).

According to Thompson (1996), the topic of romantic relationships occurs more frequently amongst adolescents, young adults, and their friends. Adolescents and young adults are less likely to discuss romantic attraction and relationships with their parents as they transition into adolescence, resulting in children becoming distanced from their parents, while simultaneously orienting towards peers (Fuligni & Eccles, 1993). Therefore, the involvement and influence of parents become limited in the romantic lives of children. Instead, parents may presume an instrumental focus devoted to increasing knowledge and teaching skills, which can assist children in decision-making around vocational options in later life (McKinney & Renk, 2008). By adopting a goal-orientating parenting style, parents may have a greater influence on the overall life quality of their children and less influence and significance on the child's emotional wellbeing and their ability to formulate and sustain quality attachments, including romantic relationships (Russell et al., 1998).

Some of the existing research referenced for parental attachment is old and conducted decades earlier (Cicirelli 1995; Crockett & Randall, 2006; Noller, 2005). Those studies may be outdated and not entirely relevant to the participants of the current study. According to research, young people in NZ experience complex and frequently changing sets of living environments (McAlly et al., 2021). Family structures have changed significantly over time, and they continue to change at an increasing pace each day. For parents, ending relationships and re-partnering, having children later, and having children outside of marriages has become increasingly common than ever before. In addition, societies are progressively shifting towards nuclear families, placing more significant attention on immediate family members (McAlly et al., 2021). Therefore, research conducted decades earlier should consider examining sibling and parental attachment in current times for the increased applicability of the research which better describes the influence of maternal and paternal attachment in today's time.

Furthermore, these findings resulted from a relatively small sample size of 91 participants due to the abrupt implementation of a nationwide Covid-19 lockdown in NZ. This eliminated all physical contact with individuals beyond one's bubble (home); thus, further data

collection ceased, and the small sample size restricted the type of analyses conducted. As a result, there may have been inadequate statistical power to detect significant associations and differences between maternal and paternal attachment and romantic quality. This suggests the current sample may not represent the broader population and previous studies may have diversified samples (Crockett & Randall, 2006).

Overall, childhood sibling attachment predicting the quality of later life romantic relationships offers an exciting avenue of research. However, the insignificant associations reported for maternal and paternal attachment were surprising as motherhood and fatherhood both involve greater levels of caregiving and investment of time and energy raising a child (Cicirelli 1995; McHale et al., 2012; Noller, 2005). Therefore, the hypothesis that maternal, paternal, and sibling attachment would each correlate negatively with ECR-R scores was partially supported.

Hypothesis Two: Warmth and Romantic Relationship Quality

In the current study, sibling warmth was found to have a strong, positive correlation with the ECR-R scores. This finding contradicted the hypothesis and suggested that high sibling warmth during childhood is associated with decreased satisfaction and quality in later romantic relationships, as higher ECR-R scores suggest decreased romantic quality.

This finding was surprising and inconsistent with existing research by Rogers and Masarik (2019), which found that support and attachment between siblings in childhood was linked with positive outcomes in adult romantic relationships. The similarities between sibling and romantic relationships provide reasons to indicate that sibling relationships can set the scene for future romantic relationships (Doughty et al., 2015). However, in this research, individuals with warm and secure attachments with their siblings in childhood may have generalised these qualities to later romantic relationships, expecting the same level of high warmth from romantic partners. Consequently, the failure of romantic partners in achieving these pre-existing expectations can result in romantic dissatisfaction, affecting the quality of romantic relationships (Doughty et al., 2015).

Moreover, the experience of a warm and secure sibling relationship does not necessarily equal the same experience with romantic partners. Individuals with sibling relationships characterised by high warmth in childhood may be romantically linked with partners who exhibit high levels of power and autonomy (Dunn, 1983). This can be perceived as intimidating or threatening by individuals if their romantic partner displays significantly higher interpersonal skills and social confidence (Hollifield & Conger, 2015). Consequently, individuals may

develop an inconsistent relationship with their romantic partner characterised by feelings of ambivalence, negatively impacting the satisfaction and quality of their romantic relationship.

Furthermore, this research assessed sibling attachment, including warmth, from a retrospective viewpoint. Participants had to be at least 18 years old to participate in this study and described the attachment with their sibling based on ages 0–11. For the youngest participants (aged 18), this time period was seven years earlier and much higher for individuals the older they were. It is no surprise that social media use has increased exponentially within the last decade (Trifiro, & Gerson, 2019). Ten years ago, people spent more time within the physical presence of one another, but populations over time have increasingly diverted their attention to electrical devices, including cell phones, laptops/computers, and tablets (Trifiro, & Gerson, 2019). This change has been described as technoferece, a term coined by scientist Brandon McDaniel (McDaniel & Radesky, 2018). Technoferece is defined as the interruptions in interpersonal communication due to attention constantly shifting to technological devices. Mobile phone use during social interactions has resulted in adults experiencing more conflict and frustration, a lower sense of empathy, and less in-depth conversations (McDaniel & Radesky, 2018). In addition, constant attention centred on one's phone can disrupt intimacy with a romantic partner, causing one to encounter discomfort and romantic dissatisfaction, affecting the quality of their romantic relationship.

On the whole, this finding suggested that individuals with warm sibling relationships during childhood experience reduced satisfaction and quality in their romantic relationships in adulthood. Therefore, the hypothesis that childhood sibling warmth would have a significant, negative correlation with ECR-R scores was rejected.

Hypothesis Three: Sibling Conflict, Power/Relative Status, Rivalry, and Romantic Relationship Quality

The current study had also proposed that childhood sibling conflict would have a significant negative correlation, whilst sibling power/relative status and rivalry would have a significant positive correlation with the ECR-R scores. Due to the nature of the ECR-R scale, this meant siblings with high conflict in childhood would encounter increased romantic quality, whereas siblings with increased power/relative status and rivalry in early life were expected to have reduced quality in later life romantic relationships.

Conflict

The analyses found a strong, negative association between sibling conflict and ECR-R scores. This means increased sibling conflict during childhood is associated with better quality romantic relationships in later life, as lower ECR-R scores equal increased satisfaction, thus indicating a positive relationship between conflict and romantic quality.

This finding aligns with existing research indicating that sibling relationships can be frustrating and emotionally charged and may need the establishment of competencies to promote positive relationships (Kramer, 2010). High occurrence of arguments, teasing, and physical aggression amongst siblings is common. According to the attachment and social learning theories, relational patterns demonstrated by individuals early in life tend to transfer to later romantic relationships (Updegraff et al., 2002). Repeated sibling conflict, followed by the ability of siblings to navigate and resolve conflict constructively, allows the pair to strengthen critical social competencies, including negotiation, enhancing communication and socialisation, and perspective-taking capabilities (Bedford et al., 2000). Thus, siblings who have engaged in successful conflict resolution during childhood have acquired skills to problem solve effectively with romantic partners (Shulman et al., 2006). This results in increased satisfaction and quality of romantic relationships.

Despite individuals acquiring problem-solving abilities through sibling conflict, the regular occurrence of conflict amongst siblings can also result in an increased desire for an individual to shift away from their brother or sister. Thus, sibling attachment characterised by conflict and the lack of warmth and satisfaction can compensate and make attachment formation more appealing with a romantic partner – a compensatory pattern (Updegraff et al., 2002). However, despite this, sibling conflict during childhood has been found to benefit both individuals involved and their future romantic relationships (Volling & Blandon, 2003).

Power/Relative Status

No significant correlations were found between power/relative status and the ECR-R scores, suggesting no relationship between the power/status dimension of the sibling relationship and the quality of later life romantic relationships. An explanation for the non-significant finding could be a result of the limited contribution sibling power/status has on the quality of future romantic relationships. Moreover, as mentioned earlier, the current study's sample size was relatively small, and a large-sized sample may be required in order to be able to afford sufficient levels of statistical power in yielding significant associations amongst variables of interest.

Past research has shown that previous experiences with siblings, particularly during childhood, can enable young individuals to establish capacities for the negotiation of power/status, which can impact the satisfaction and quality of future romantic relationships (Collins et al., 2009). It is likely that the individuals in this study may have had low or no exposure and adeptness to power negotiations with their siblings during their childhood. Instead, their sibling attachments during that time period may have been characterised by closure, warmth, and positivity in which the siblings supported and listened to each other, acknowledged the viewpoints of one another, and accepted each other's personalities and behaviours instead of one sibling striving to be better and more powerful than the other (Phillips & Schrodt, 2015).

According to previous research, the issue of power/status usually arises from the age difference amongst siblings. It appears as a natural part of sibling attachments for the older sibling to dominate the younger sibling. Similarly, Doughty et al. (2013) has indicated that higher levels of power/status in sibling attachments are usually expressed by the older sibling due to their increased physical maturity and intellectual capacity to articulate their emotions and point of view. Older siblings also have greater control over decision-making processes. As a result of lower levels of power, younger siblings may need to acquire good communication and compromising skills to sustain quality romantic relationships (Robertson et al., 2014). Thus, there is a likelihood that a large number of the participants may have been the younger sibling as older siblings have better socialisation skills and tend to exert greater dominance and power/status. However, it is difficult to determine if this was the case in the current research as sibling placement was not assessed.

Rivalry

A non-significant association was found between sibling rivalry and the ECR-R scores. This indicated that the quality of future romantic relationships is unaffected by the expression of rivalry between siblings during childhood.

A reason for the non-significant finding can be supported by research by Kramer (2019), which found that siblings who received unexplained differential parent treatment experience conflict and rivalry due to favouritism by both or one parent. Therefore, it is likely that individuals in this study may not have experienced differential treatment by their parents. Instead, they are likely to have received equal opportunities as their sibling and similar amounts of love and warmth from their parents when they were a child, resulting in the development of positive sibling attachments uncharacterised by rivalry (Kramer et al., 2019). As a result, these individuals would have had warm and egalitarian sibling bonds during childhood instead of a

competitive and tension-filled attachment that can affect other life areas, such as romantic relationships (Rauer & Volling, 2007). Subsequently, the inexperience of sibling rivalry suggests the romantic relationship quality of these individuals would not be impacted, as Rauer and Volling (2007) found reduced quality in romantic relationships due as a result of sibling rivalry. Thus, siblings who act as competitors and rivals in early life can expect their later romantic relationships to be negatively impacted.

Early experiences of sibling rivalry can condition one to remain competitive, which negatively impact their future romantic relationships (Rauer & Volling, 2007). There is a high probability that the participants and their siblings served as companions and playmates. They may have exhibited equal amounts of power as opposed to developing hierarchal sibling bonds in which one sibling aimed to achieve dominance over the other (Doughty et al., 2015). Individuals having exercised equality and balance in their sibling attachments from a young age have strengthened these skills and can naturally display these qualities in other attachments, including romantic relationships. Gender roles are increasingly becoming more egalitarian in Western societies, with individuals forming romantic connections comprised of more egalitarian power dynamics and role structures (Collins et al., 2009). Following the experience of balanced sibling attachments, these respondents may have formed egalitarian romantic relationships with an equal amount of control with their partner.

Moreover, sibling placement was not assessed in the current study. The majority of the previous studies which have reported findings for sibling rivalry have examined sibling placement within the family. For example, Robertson et al. (2014) found that younger siblings reported more favouritism by their parents, whereas older siblings rated themselves as less favoured compared to their younger siblings (Robertson et al., 2014). In both cases, younger siblings were viewed to be more favoured by their parents.

To summarise these findings, it was of surprise that non-significant associations were reported between power/relative status and rivalry during childhood and the ECR-R scores. Of all three dimensions assessed of the sibling relationship (conflict, power/relative status, and rivalry), sibling conflict was the only predictor of the quality of future romantic relationships. Therefore, the hypothesis that childhood sibling conflict would have a significant negative correlation, whilst sibling power/relative status and rivalry would have a significant positive correlation, with the ECR-R scores, was partially supported.

Participant Age and Romantic Outcomes

As mentioned at the beginning of the discussion section, significant associations were found between variables in addition to the proposed hypotheses. A strong, positive association was revealed between participant age and the ECR-R scores. As higher ECR-R scores indicate decreased romantic quality, this finding suggested that as the participants aged, they experienced reduced satisfaction and quality in their romantic relationships. These results must be interpreted cautiously as some participants may have completed the ECR-R for a previous romantic relationship that no longer exists. Thus, biased answers could have been provided about the attachment with an ex-romantic partner instead of accurately recalling and reporting how one truly felt when the relationship existed.

This finding also aligns with past studies that have reported similar results that romantic relationships tend to become less satisfying as individuals age across time (Cumming & Henry, 1961; Huesman, 1980). Intimate relationships are usually extended in length, and feelings of love between partners can change across time. High amounts of love and satisfaction are commonly reported at the beginning of romantic relationships, but satisfaction tends to decrease as the relationship develops across time and individuals grow older and wiser (Huesman, 1980). As per the principles of learning theory, the participants may have found their romantic partners presence to become less satisfying or less rewarding due to the effects of habituation and ageing (Sprecher, 1999). In romantic relationships, satisfaction levels tend to decrease the most whilst love reduces the least (Huesmann, 1980), suggesting romantic relationships do not terminate due to the disappearance of love but a result of relationship dissatisfaction, which may cease the growth of love.

According to the self-expansion model, satisfaction and the quality of romantic relationships have chances of decreasing over time as romantic partners offer fewer opportunities for further self-expansion (Aron & Aron, 1986). When individuals initiate romantic relationships, the couples are usually stimulated and fascinated by the presence of a new partner. However, as the relationship progresses from months to years, the early satisfaction experienced tends to reduce. The majority of the participants reported being in a romantic relationship for at least two years, with three respondents noting the duration of their romantic relationship above ten years. Therefore, the initial spark and excitement have likely faded or lost over time as there is less for partners to discover about each other. Additionally, the regular planning of dinner and movie dates in the initial phase of romantic relationships significantly decreases across time (Aron & Aron, 1986). Thus, the diminished excitement around exploration can also elicit feelings of boredom and dissatisfaction, reducing the quality of romantic relationships.

Furthermore, the ECR-R was likely completed by older respondents who may have higher levels of social expertise around developing romantic relationships (Hess & Auman, 2001). Romantic relationships begin during mid-to-late adolescence, and achieving romantic intimacy early as possible is commonly seen in Western society (Doughy et al., 2015). Many romantic relationships progress into adulthood, but a fair amount also terminates. Young adults usually have experienced at least one romantic relationship before entering adulthood. Thus, older participants who answered the ECR-R have likely acquired increased skills and expertise in avoiding romantic partners and relationships with negative characteristics (Hess, 2005). As a result, the older individuals may have reported enhanced romantic relationship quality, attributed to their increased expertise, maturity, and sophisticated judgement surrounding romantic relationships (Hess, 2006).

Sibling Age and Romantic Relationship Quality

As per the analyses, a significant negative correlation was reported between sibling age and the ECR-R scores. This indicated that increasing sibling age is associated with better quality in romantic relationships for individuals, as lower ECR-R scores indicate enhanced romantic quality.

This finding was consistent with existing research, which has reported that romantic relationships can fulfil similar developmental functions as sibling attachments (Seiffge-Krenke & Connolly, 2010). During childhood, a large proportion of the children's time outside of school is spent in the presence of their sibling, providing sufficient time for contact and influence (McHale et al., 2012). As siblings evolve across time, so does their ability to impact the social adjustment of each other. Individuals with enhanced interpersonal and socialisation skills acquired from sibling attachments have enhanced skills and confidence to maintain healthy and satisfying connections with romantic partners, which positively impact the quality of romantic relationships (Doughty et al., 2015; Seiffge-Krenke & Connolly, 2010).

Findings by Doughty et al. (2015) can explain how sibling age can contribute to increased romantic quality and satisfaction. Sibling relationships are significant across the lifespan, and an aspect shared by romantic and sibling attachments is the centrality of each in an individual's life. During childhood, sibling attachments are generally characterised by conflict and rivalry for parental attention (Teti, 2002). As siblings grow together, competition reduces, and this bond undergoes developmental transformations, and this attachment generally becomes more symmetrical and egalitarian (Burhmester & Furman, 1990). Siblings who maintain emotionally intimate bonds as they age allow for the exchange of personal information based on shared experiences and understanding. Doughty et al. (2015) has highlighted that sibling are

constantly available sources of support that can provide constructive advice during romantic difficulties. Their opinion and assistance can be even advantageous if the sibling is older and more experienced with romantic relationships (Doughty et al., 2015). Thereby, participants who have maintained strong sibling attachments across life are likely to have strengthened romantic connections due to the similarities of the relationships and the ability of individuals to transfer skills learnt from sibling attachments to romantic relationships.

The Relationship of Paternal and Maternal Attachment with Sibling Attachment

The correlation analysis conducted in this research (Table 9) reported important findings between attachment figures which were considered significant to explore. A non-significant correlation was found between sibling and paternal attachment, whilst maternal attachment reported a significant moderate correlation with sibling attachment.

Paternal Attachment

Interestingly, the correlational analysis did not find a significant correlation between paternal attachment and sibling attachment. This result was unexpected as past research has shown evidence for a positive association between paternal and sibling attachment (Volling & Belsky, 1992).

To explain this finding, there is a likelihood that these individuals may have had a weak attachment with their father, which subsequently influenced how they answered the paternal attachment questions. This result can also be understood in the context of past research, which has shown that fathers are often the parental figure who make comparisons between their children, particularly comparing younger children to the older child (Yaremych & Volling, 2018). This type of behaviour is usually encouraged by fathers in an attempt to enhance the skills and self-esteem of their children. However, the experience of unequal parental treatment, such as comparison and favouritism, can produce feelings of inadequacy for the children being compared (Schachter & Stone, 1987; Yaremych & Volling, 2018). In addition, parental favouritism expressed by one or both parents during childhood can create environments for competition between siblings. This can negatively affect the attachment that a child formulates with their father and their sibling in childhood and extend throughout life (Schachter & Stone, 1987; Yaremych & Volling, 2018). Therefore, these types of parents behaviours should be avoided.

Bretherton et al. (2005) has stated that fathers also engage in caregiving processes like mothers, but they tend to have greater involvement in playmate behaviours. Competitive and risk-taking behaviours amongst children are generally encouraged by fathers. This can result in siblings viewing each other as intense versions of peers rather than sources of support and companions (Bretherton et al., 2005). In addition to this, fathers are found to be less emotionally available when their children need them. Childhood is a time when children are developing and completing early life milestones, including walking, reading, and writing. Children require greater levels of support, care, and love from their attachment figures during these stages. Despite that, fathers show pleasant emotions less often with children (Yaremych & Volling, 2018), resulting in children failing to develop strengthened attachments with fathers. In this study, the participants may have experienced similar situations with their paternal figure creating competitive environments with their siblings. Although research suggests that fathers are increasingly becoming involved in the caregiving practices of their children, this increase remains relatively small in comparison to the involvement of mothers (Lamb, 2004).

Maternal Attachment

In contrast to the findings for paternal attachment, a significant, moderate correlation was found between maternal and sibling attachment. This highlighted that stronger maternal attachment is associated with increased sibling attachment.

It is argued that participants in this study had stronger attachments with their mother, instead of their father, during childhood. According to Bowlby (1988), attachment with the primary caregiver is qualitatively different from other attachment figures as it is the most significant attachment in the lives of children and siblings. Mothers are generally the primary attachment figures, nurturers, and caregivers for their children (Bretherton et al., 2005; McBride et al., 2009), and primary caregivers tend to have higher involvement in the decision making and lives of their children. Bowlby believed that a child who was insecurely attached to their mother was likely to encounter adverse outcomes in their psychological behaviour and relationships with others, including siblings. They were unlikely to assist their sibling during difficulties. In comparison, children who have secure attachments with their mother from the early stages of life tend to be trustworthy and are more likely to provide and care for a sibling in general and particularly during distress (Teti & Ablard, 1989). This highlights the significance that a strong and secure attachment with a mother during childhood can have on an individual and their attachment with their sibling.

Mothers are also known to engage in the majority of parental activities for their children when they are young and reliant on adult support (McBride et al., 2009; Yaremych & Volling,

2018). This finding has been assessed by variables including time spent in contact with the child, teaching the child, and spending time within the child's vicinity (Buss, 2008). Mothers play a vital role in the growth and development of each child and set the framework of how to develop and sustain secure attachments with siblings. Thus, it is no surprise that a strong attachment with a mother can enhance one's attachment with their sibling.

Research Limitations

One of the key strengths of the current study was that it was one of the few studies in NZ investigating the association of parental and sibling attachment with later romantic relationship quality. Of particular note, sibling and parental attachment were assessed retrospectively, and respondents based their answers on their childhood experiences, specifically between 0 to 11 years.

In addition, this research also contained various limitations which should be addressed. First and foremost, this study consisted of a small sample size with a total of 91 participants. Achieving a sample size of at least 200 participants was expected with a plan for further recruitment. Unfortunately, the nationwide alert level 4 lockdown in NZ, which lasted five weeks, restricted the researchers to work with the earlier collected data. Unfortunately, this sample size was too small to conduct the moderation analysis originally envisaged. Therefore, reconducting the same study in the future with a larger sized sample can determine if these findings are robust and address concerns of an insufficient sample size. This will enable a moderation analysis to be conducted, which can assist in evaluating if sibling attachment can moderate the association between parental attachment during childhood and later life romantic relationship quality.

The second limitation was surrounding the homogeneity of the sample. Participants were recruited from AUT psychology lectures which inherently involved specific demographics that were more interested in attachment issues rather than the general population. These shortcomings are common within survey research designs as the participants could be biased, with some displaying increased motivation and concerns about the topic of interest (Seers & Crichton, 2001). In addition to this factor, the sample was predominantly female, with 70 female respondents and 21 males, aged between 18 to 25 years. This limited the applicability of the results mainly to young females. Past studies have indicated that females have more positive experiences with attachment figures, including parents, siblings, and romantic partners, and place greater significance on their relationships (Spitze & Trent, 2006). Thus, this gender difference could result in certain biases if males and females of the current study had different attachment levels with each attachment figure. Therefore, future research integrating qualitative

and qualitative data with an equal gender distribution, including participants from different vocational backgrounds and age groups, to assess if the associations change or remain consistent. This can help ensure the sample is diverse and representative and service to increase the generalisability of the results to the broader population of NZ (Banerjee & Chaudhury, 2010).

Moreover, this research was conducted from a retrospective viewpoint as participants were asked to recall their attachments with their mother, father, and sibling during childhood, specifically between 0–11 years of age. There is a likelihood that participants may have encountered difficulty in recollecting the nature of early life attachments the older they were, as the age range of participants spanned up to 50 years of age. Also, more recent experiences with these attachment figures may have biased their previous memories. Therefore, the age gap between the participant's current age and the time period they were assessed on (ages 0 – 11) should be controlled as a covariate in future research. This can ensure that more accurate responses are captured in terms of the impact parental attachment and sibling attachment can have on future romantic relationship quality.

Another potential bias included the utilisation of the mono-method. All variables in this study were assessed through self-report instruments, escalating observed associations. Participants were questioned regarding their feelings and attitudes, which tend to fluctuate. They could have answered dishonestly to refrain from disclosing negative aspects about themselves or their relationship, resulting in social desirability, including reporting more favourable behaviours (Choi & Pak, 2005). This essentially would have failed to capture truthful and accurate responses. Moreover, there is variation in how participants read, understood, and interpreted the question. Nonetheless, individuals are most knowledgeable of their emotions and experiences, which cannot be measured or expressed precisely by others. This, therefore, enhanced the validity of the data.

Furthermore, some participants may have completed the ECR-R regarding a previous romantic relationship. Recalling emotions and experiences regarding an ex-partner can be difficult, especially if the relationship ended on bad terms, leading to current emotions biasing earlier perspectives of that relationship. For example, events following the termination of the relationship may have soured or glorified an individual's perspective, failing to capture the real emotions of participants about their previous partner. Although the ECR-R questionnaire is a reliable measure with an adequate number of items, employing other measures could be of value that assesses other aspects of romantic relationship quality, in addition to secure and insecure attachment in the ECR-R. For example, the Love Attitude Scale (LAS) is a standardised measure of six love styles and assesses the degree to which individuals are realistic in their

attitudes towards love and satisfaction with their partner (Hendrick, 1998; Tolentino, 2006). This scale assesses aspects that make up romantic relationships and can assist in exploring romantic quality in greater depth.

Directions for Future Research

The results of the correlational analysis showed that the association between paternal and sibling attachment was non-significant. In contrast, maternal attachment revealed a significant association with sibling attachment. Both attachment figures, a mother and father, play essential roles in the life of individuals (McHale et al., 2012; Noller, 2005). Therefore, it would be important to investigate why the association between paternal and sibling attachment was non-significant. Conducting a qualitative study with in-depth interviews exploring participant experiences with their mother and father can help explore the reasoning for the differences and perhaps why fathers may be viewed as less important.

Moreover, the participants who completed the sibling attachment scale based their responses on the nearest sibling. Participants with multiple siblings did not have the option of selecting which sibling they answered the questions regarding. Therefore, future research could give respondents the option of basing their responses on a sibling of their choice as they may have a stronger bond with a sibling with a large age gap. Alternatively, considering family size can be of value by developing an instrument/measure that assesses multiple relationships of an individual instead of limiting the focus to one sibling. In addition to this, future research could incorporate numerous sources of information for sibling and romantic relationships, minimising dependence on correlated self-reports.

Sibling placement was a factor not examined in this study due to the limited sample size. With a larger sized sample, future research could involve results for sibling placement which will enable sibling relationship factors, such as Power/Relative Status and Rivalry, to be assessed more accurately. In addition, recruiting a more diverse sample – both younger and older siblings, varying ages, and ethnic groups would obtain a broadened understanding of how parental and sibling attachment affect romantic relationships in individuals across the life span.

It can also be useful to administer the ECR-R to romantic partners and gain their input, as couples may have different perceptions of their romantic relationship. This can result in acquiring a holistic understanding of the romantic relationship quality. Furthermore, these findings can be further enhanced by only involving participants in the research in current romantic relationships. The reason for this includes respondents completing the ECR-R regarding an ex-partner may influence the overall findings due to mixed emotions. Last but not

least, examining associations across an extended time would be necessary, as sibling attachments and romantic relationships are known to fluctuate in intimacy across time (Updegraff et al., 2002).

Implications

Although the results documented in this study are not conclusive, they represent the influence early life parental and sibling attachment have on the quality of future romantic relationships. The systems theory has explained that there are reciprocal connections amongst sibling attachments and other family subsystems (Whiteman et al., 2011). Therefore, clinicians may find value in examining various subsystems within families (Doughty et al., 2015). Due to the negative implications of unhealthy attachments on mental health and overall wellbeing, teaching children the significance of building and maintaining healthy relationships is vital (Mikulincer & Shaver, 2012). Therefore, mental health practitioners should direct their attention towards programmes encouraging the development of healthy sibling attachments due to the long-lasting effects of this relationship. In addition to this, parents can also encourage positive sibling attachments by adopting methodical actions for children to learn social skills (Kramer, 2010).

Focusing on attachment processes and considering the impact of early life attachments is crucial when working with romantic couples engaged in counselling and psychotherapy for relationship difficulties and mental health complexities. Helping couples identify their attachment styles alongside educating them on the ability of these styles to change across time can increase hope, raise security, and normalise the experience for romantic couples (Shalash et al., 2013). In addition, the findings of this study can be beneficial when working with individuals with inadequate parental attachments, as a strong attachment with a sibling can be a protective factor and moderate against the negative implications on romantic relationships.

In addition to the conceptualisation of and processes surrounding attachment needs, the advancement of attachment-based interventions for distressed individuals and couples seeking therapy may enable health professionals to offer assistance more effectively, particularly by opting towards emotionally focused therapy (Johnson, 2004). This is an attachment-related model which displays the highest empirical support.

Conclusion

The influence of peer and parent attachment on romantic quality has been well researched, but the area of sibling attachment remained somewhat neglected. Therefore, the current study aimed to assess whether parental attachment and sibling attachment during childhood influenced the quality of later life romantic relationships. As a result, three hypotheses were proposed in the current study to answer this research question: 1) it was hypothesised that maternal, paternal, and sibling attachment would each correlate negatively with the ECR-R scores, 2) childhood sibling warmth will represent a significant negative correlation with the ECR-R scores, and 3) sibling conflict will have a significant negative correlation, whilst sibling power/relative status and rivalry will have a significant positive correlation, with the ECR-R scores. Due to the nature of the ECR-R scale, lower ECR-R scores indicated increased satisfaction and romantic relationship quality, whereas higher ECR-R scores indicated decreased satisfaction and romantic relationship quality.

One of the most significant findings of this study included sibling attachment as the best predictor of romantic relationship quality. The negative association between sibling attachment and the ECR-R scores indicated that a strong sibling during childhood was associated with increased romantic quality in later life. Interestingly, maternal and paternal attachment reported no significant connection with romantic quality, two of the most significant attachments in an individual's life. It was also found that individuals who experienced warm sibling relationships during childhood reported less successful romantic relationships in later life, whereas individuals who had strong attachments with their siblings as they aged experienced better romantic outcomes. In addition, childhood sibling conflict resulted in increased satisfaction and quality in later romantic relationships. However, other dimensions of the sibling relationship, including power/relative status and rivalry, did not impact romantic quality. Last but not least, the correlational analysis revealed that sibling attachment was significantly correlated with maternal attachment but not paternal attachment.

The limitations of this study were discussed, followed by recommendations for further research. However, these findings should be interpreted with caution due to the methodological limitations and the limited availability of research to compare. Overall, the findings of this small-scale study indicated that this is an effective area for research. The findings highlighted that romantic relationship quality is impacted by family dynamics beyond the parent-child relationship. In particular, sibling attachment plays an important role in acquiring skills that influence the development and maintenance of quality romantic relationships in later life. Of note, this study does not advise that any type of attachment is better or superior to another and all three attachments, maternal, paternal, and sibling, are vital in a person's life. However, the

current results indicate the need to implement educational programs and interventions on attachments and romantic relationships for adolescents transitioning into adulthood to enhance their potentiality in sustaining successful romantic relationships. It is hoped that the efforts of this research will facilitate an inspiring direction for future research on this topic and assist in investigating sibling attachment and romantic attachments in greater depth (Shalash et al., 2013).

References

- Ackerman, R. A., Kashy, D. A., Donnellan, M. B., Neppl, T., Lorenz, F. O., & Conger, R. D. (2013). The interpersonal legacy of a positive family climate in adolescence. *Psychological Science, 24*, 243–250. <https://doi.org/10.1177/0956797612447818>
- Ainsworth, M. S. (1989). Attachments beyond infancy. *American Psychologist, 44*(4), 709–716. <https://doi.org/10.1037/0003-066X.44.4.709>
- Ainsworth, M. D. S., Blehar, M. C., Waters, E., & Wall, S. (1978). *Patterns of attachment: A psychological study of the strange situation*. Lawrence Erlbaum.
- Arikewuyo, A., Efe-Özad, B., Dambo, T., Abdulbaqi, S., & Arikewuyo, H. (2020). An examination of how multiple use of social media platforms influence romantic relationships. *Journal of Public Affairs, 21*(3). <https://doi.org/10.1002/pa.2240>
- Armsden, G., & Greenberg, M. (1987). The inventory of parent and peer attachment: Individual differences and their relationship to psychological well-being in adolescence. *Journal of Youth and Adolescence, 16*(5), 427–454. <https://doi.org/10.1007/BF02202939>
- Arnett, J. J. (2004). *Emerging adulthood: The winding road from the late teens through the twenties*. Oxford University Press.
- Aron, A., & Aron, E. N. (1986). *Love and the expansion of self: Understanding attraction and satisfaction*. Hemisphere Publishing Corp/Harper & Row Publishers.
- Auslander, B. A., Short, M. B., Succop, P. A., & Rosenthal, S. L. (2009). Associations between parenting behaviors and adolescent romantic relationships. *Journal of Adolescent Health, 45*, 98–101. <https://doi.org/10.1016/j.jadohealth.2008.12.014>
- Banerjee, A., & Chaudhury, S. (2010). Statistics without tears: Populations and samples. *Industrial Psychiatry Journal, 19*(1), 60. <https://www.industrialpsychiatry.org/text.asp?2010/19/1/60/77642>
- Bank, S. (1992). Remembering and reinterpreting sibling bonds. In F. Boer & J. Dunn (Eds.), *Children's sibling relationships: Developmental and clinical issues* (pp. 139–151). Lawrence Erlbaum Associates, Inc.
- Bank, S. P., & Kahn, M. D. (1997). *The sibling bond*. Basic Books.
- Bedford, V. H., Volling, B. L., & Avioli, P. S. (2000). Positive consequences of sibling conflict in childhood and adulthood. *The International Journal of Aging & Human Development, 51*(1), 53–69. <https://doi.org/10.2190/G6PR-CN8Q-5PVC-5GTV>
- Benoit, D. (2004). Infant-parent attachment: Definition, types, antecedents, measurement and outcome. *Paediatrics & Child Health, 9*(8), 541–545. <https://doi.org/10.1093/pch/9.8.541>
- Black, K. A., & Schutte, E. D. (2006). Recollections of being loved: Implications of childhood experiences with parents for young adults' romantic relationships. *Journal of Family Issues, 27*(10), 1459–1480. <https://doi.org/10.1177/0192513X06289647>
- Bowlby, J. (1979). On knowing what you are not supposed to know and feeling what you are not supposed to feel. *The Canadian Journal of Psychiatry, 24*(5), 403–408. <https://doi.org/10.1177/070674377902400506>
- Bowlby, J. (1988). *A secure base: Parent-child attachment and healthy human development*. Basic Books
- Brennan, K. A., Clark, C. L., & Shaver, P. R. (1998). Self-report measurement of adult romantic attachment: An integrative overview. In J. A. Simpson & W. S. Rholes (Eds.), *Attachment theory and close relationships* (pp. 4–76). New York: Guilford Press
- Brennan, K. A., & Shaver, P. R. (1995). Dimensions of adult attachment, affect regulation, and romantic relationship functioning. *Personality and Social Psychology Bulletin, 21*(3), 267–283. <https://doi.org/10.1177/0146167295213008>
- Bretherton, I. (1985). Attachment theory: Retrospect and prospect. *Monographs of the Society for Research in Child Development, 50*(1–2), 3–35. <https://doi.org/10.2307/3333824>
- Bretherton, I., Lambert, J. D., & Golby, B. (2005). Involved fathers of preschool children as seen by themselves and their wives: Accounts of attachment, socialization, and companionship. *Attachment & Human Development, 7*(3), 229–251. <https://doi.org/10.1080/14616730500138341>

- Brumbaugh, C. C. (2017). Transferring connections: Friend and sibling attachments' importance in the lives of singles. *Personal Relationships*, 24(3), 534–549.
- Bryant, B. K. (1992). Sibling caretaking: Providing emotional support during middle childhood. In F. Boer & J. Dunn (Eds.), *Children's sibling relationships: Developmental and clinical issues* (pp. 55–69). Lawrence Erlbaum Associates, Inc.
- Buhrmester, D., & Furman, W. (1990). Perceptions of sibling relationships during middle childhood and adolescence. *Child Development*, 61(5), 1387 – 1398. <https://doi.org/10.2307/1130750>
- Cantor, N., Acker, M., & Cook-Flannagan, C. (1992). Conflict and preoccupation in the intimacy life task. *Journal of Personality and Social Psychology*, 63(4), 644–655. <https://doi.org/10.1037/0022-3514.63.4.644>
- Cassidy, J. (1999). The nature of the child's ties. In J. Cassidy & P. R. Shaver (Eds.), *Handbook of attachment: Theory, research, and clinical applications* (pp. 3–20). The Guilford Press.
- Cassidy, J. (2008). The nature of the child's ties. In J. Cassidy & P. R. Shaver (Eds.), *Handbook of attachment: Theory, research, and clinical applications* (pp. 3–22). The Guilford Press
- Choi, B. C., & Pak, A. W. (2005). Peer reviewed: A catalog of biases in questionnaires. *Preventing Chronic Disease*, 2(1).
- Cicirelli, V. G. (1995). *Sibling relationships across the life span*. Plenum Press. <https://doi.org/10.1007/978-1-4757-6509-0>
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences*, 2nd Ed. New York, NY: Academic Press
- Cohn, D. A., Silver, D. H., Cowan, C. P., Cowan, P. A., Pearson, J. (1992). Working models of childhood attachment and couple relationships. *Journal of Family Issues*, 13, 342–449. <https://doi.org/10.1177/019251392013004003>
- Collins, W., Welsh, D., & Furman, W. (2009). Adolescent romantic relationships. *Annual Review of Psychology*, 60(1), 631–652. <https://doi.org/10.1146/annurev.psych.60.110707.163459>
- Conger, K. J., & Little, W. M. (2010). Sibling relationships during the transition to adulthood. *Child Development Perspectives*, 4(2), 87–94. <https://doi.org/10.1111/j.1750-8606.2010.00123.x>
- Conger, K., Stocker, C., & McGuire, S. (2009). Sibling socialization: The effects of stressful life events and experiences. *New Directions for Child and Adolescent Development*, 2009(126), 45–59. <https://doi.org/10.1002/cd.256>
- Cooper, M. L., Shaver, P. R., & Collins, N. L. (1998). Attachment styles, emotion regulation, and adjustment in adolescence. *Journal of Personality and Social Psychology*, 5, 1380–1397. <https://doi.org/10.1037/0022-3514.74.5.1380>
- Cox, M. (2010). Family systems and sibling relationships. *Child Development Perspectives*, 4(2), 95–96. <https://doi.org/10.1111/j.1750-8606.2010.00124.x>
- Creasey, G. (2002). Associations between working models of attachment and conflict management behavior in romantic couples. *Journal of Counseling Psychology*, 49(3), 365–375. <https://doi.org/10.1037/0022-0167.49.3.365>
- Crockett, L. J., & Randall, B. A. (2006). Linking adolescent family and peer relationships to the quality of young adult romantic relationships: The mediating role of conflict tactics. *Journal of Social and Personal Relationships*, 23, 761–780. <https://doi.org/10.1177/0265407506068262>
- Crouter, A. C., & Booth, A. (Eds.). (2006). *Romance and sex in adolescence and emerging adulthood: Risks and opportunities* (pp. 127–150). Lawrence Erlbaum Associates Publishers.
- Cumming, E., & Henry, W. (1961). *Growing old: The process of disengagement*. Basic Books, New York
- Darling, N., Cohan, C. L., Burns, A., & Thompson, L. (2008). Within family conflict behaviors as predictors of conflict in adolescent romantic relations. *Journal of Adolescence*, 31, 671–690. <https://doi.org/10.1016/j.adolescence.2008.10.003>.

- Davila, J., Mattanah, J., Bhatia, V., Latack, J., Feinstein, B., & Eaton, N. (2017). Romantic competence, healthy relationship functioning, and well-being in emerging adults. *Personal Relationships, 24*(1), 162–184. <https://doi.org/10.1111/pere.12175>
- Dinero, R. E., Conger, R. D., Shaver, P. R., Widaman, K. F., & Larsen-Rife, D. (2008). The influence of family of origin and adult romantic partners on romantic attachment security. *Journal of Family Psychology, 22*, 622–632. <https://doi.org/10.1037/a0012506>
- Dirks, M., Persram, R., Recchia, H., & Howe, N. (2015). Sibling relationships as sources of risk and resilience in the development and maintenance of internalizing and externalizing problems during childhood and adolescence. *Clinical Psychology Review, 42*, 145–155. <https://doi.org/10.1016/j.cpr.2015.07.003>
- Doherty, N., & Feeney, J. (2004). The composition of attachment networks throughout the adult years. *Personal Relationships, 11*(4), 469–488. <https://doi.org/10.1111/j.1475-6811.2004.00093.x>
- Donnellan, M. B., Larsen-Rife, D., & Conger, R. D. (2005). Personality, family history, and competence in early adult romantic relationships. *Journal of Personality and Social Psychology, 88*(3), 562–576. <https://doi.org/10.1037/0022-3514.88.3.562>
- Doughty, S. E., McHale, S. M., & Feinberg, M. E. (2015). Sibling experiences as predictors of romantic relationship qualities in adolescence. *Journal of Family Issues, 36*, 589–608. <https://doi.org/10.1177/0192513X13495397>
- Dunn, J. (1983). Sibling relationships in early childhood. *Child Development, 54*(4), 787–811. <https://doi.org/10.2307/1129886>
- Dunn, J. (2000). State of the art: Siblings. *The Psychologist, 13*, 244–248.
- Dunn, J., & Kendrick, C. (1982). Temperamental differences, family relationships, and young children's response to change within the family. *Ciba Foundation Symposium - Temperamental Differences in Infants and Young Children, 89*, 87–105. <https://doi.org/10.1002/9780470720714.ch6>
- Erikson, E. H. (1963). *Childhood and society* (2nd Ed.). New York: Norton.
- Feeney, J. A. (2008). Adult romantic attachment: Developments in the study of couple relationships. In J. Cassidy & P. R. Shaver (Eds.), *Handbook of attachment: Theory, research, and clinical applications* (pp. 456–481). The Guilford Press.
- Feinberg, M., Solmeyer, A., Hostetler, M., Sakuma, K., Jones, D., & McHale, S. (2013). Siblings are special: Initial test of a new approach for preventing youth behavior problems. *Journal Of Adolescent Health, 53*(2), 166–173. <https://doi.org/10.1016/j.jadohealth.2012.10.004>
- Fincham, F. D., & Cui, M. (Eds.). (2011). *Romantic relationships in emerging adulthood*. New York, NY: Cambridge University Press.
- Finzi-Dottan, R., & Cohen, O. (2011). Young adult sibling relations: The effects of perceived parental favoritism and narcissism. *The Journal of Psychology, 145*, 1–22. <https://doi:10.1080/00223980.2010.528073>
- Fosco, G. M., Van Ryzin, M. J., Xia, M., & Feinberg, M. E. (2016). Trajectories of adolescent hostile-aggressive behavior and family climate: Longitudinal implications for young adult romantic relationship competence. *Developmental Psychology, 52*(7), 1139–1150. <https://doi.org/10.1037/dev0000135>
- Fraley, R. C., & Davis, K. E. (1997). Attachment formation and transfer in young adults' close friendships and romantic relationships. *Personal Relationships, 4*(2), 131–144. <https://doi.org/10.1111/j.1475-6811.1997.tb00135.x>
- Fraley, R. C., & Tancredy, C. M. (2012). Twin and sibling attachment in a nationally representative sample. *Personality and Social Psychology Bulletin, 38*(3), 308–316. <https://doi.org/10.1177/0146167211432936>
- Fraley, R. C., Waller, N. G., & Brennan, K. A. (2000). An item response theory analysis of self-report measures of adult attachment. *Journal of Personality and Social Psychology, 78*(2), 350–365. <https://doi.org/10.1037/0022-3514.78.2.350>
- Fulgini, A. J., & Eccles, J. S. (1993). Perceived parent-child relationships and early adolescents' orientation toward peers. *Developmental Psychology, 29*(4), 622–632. <https://doi.org/10.1037/0012-1649.29.4.622>

- Furman, W., & Buhrmester, D. (1985). Children's perceptions of the personal relationships in their social networks. *Developmental Psychology*, 21(6), 1016–1024. <https://doi.org/10.1037/0012-1649.21.6.1016>
- Gullone, E., & Robinson, K. (2005). The Inventory of Parent and Peer Attachment– Revised (IPPA-R) for children: A psychometric investigation. *Clinical Psychology & Psychotherapy*, 12(1), 67–79. <https://doi.org/10.1002/cpp.433>
- Gungordu, N., & Hernandez-Reif, M. (2020). Sibling relationship dynamics relates to young adults' empathic responding. *Journal of Family Studies*, 1–15. <https://doi.org/10.1080/13229400.2020.1753560>
- Hendrick, S.S. (1988). A generic measure of relationship satisfaction. *Journal of Marriage and the Family*, 50, 93–98. <https://doi.org/10.2307/352430>
- Hess, T. M. (2005). Memory and aging in context. *Psychological Bulletin*, 131(3), 383–406. <https://doi.org/10.1037/0033-2909.131.3.383>
- Hess, T. M. (2006). Adaptive aspects of social cognitive functioning in adulthood: Age-related goal and knowledge influences. *Social Cognition*, 24(3), 279–309. <https://doi.org/10.1521/soco.2006.24.3.279>
- Hess, T. M., & Auman, C. (2001). Aging and social expertise: The impact of trait-diagnostic information on impressions of others. *Psychology and Aging*, 16(3), 497–510. <https://doi.org/10.1037/0882-7974.16.3.497>
- Hollifield, C. R., & Conger, K. J. (2015). The role of siblings and psychological needs in predicting life satisfaction during emerging adulthood. *Emerging Adulthood*, 3(3), 143–153. <https://doi.org/10.1177/2167696814561544>
- House, J. S., Landis, K. R., and Umberson, D. (1988). Social relationships and health. *Science*, 241(4865), 540–545. <https://doi.org/10.1126/science.3399889>
- Howe, N., Rinaldi, C., Jennings, M., & Petrakos, H. (2002). "No! The lambs can stay out because they got cosies": Constructive and destructive sibling conflict, pretend play, and social understanding. *Child Development*, 73, 1460–1473
- Howe, N., Ross, H., & Recchia, H. (2011). Sibling relations in early and middle childhood. *The Wiley-Blackwell Handbook of Childhood Social Development*, (pp. 356–372). John Wiley & Sons. <https://doi.org/10.1002/9781444390933.ch19>
- Huesmann, L. (1980). Toward a predictive model of romantic behavior. In K. S. Pope (Ed.), *On love and loving* (pp. 152–171). San Francisco: Jossey-Bass.
- Johnson, S. M. (2004). *The practice of emotionally focused couple therapy: Creating connection* (2nd ed.). New York, NY: Brunner-Routledge
- Koohsar, A., & Bonab, B. (2011). Relation between quality of attachment and life satisfaction in high school administrators. *Procedia - Social and Behavioral Sciences*, 30, 954–958. <https://doi.org/10.1016/j.sbspro.2011.10.185>
- Körük, S., Öztürk, A., & Kara, A. (2016). The predictive strength of perceived parenting and parental attachment styles on psychological symptoms among Turkish University students. *International Journal of Instruction*, 9(2), 215–230. <https://doi.org/10.12973/iji.2016.9215a>
- Kramer, L. (2010). The essential ingredients of successful sibling relationships: An emerging framework for advancing theory and practice. *Child Development Perspectives*, 4(2), 80–86. <https://doi.org/10.1111/j.1750-8606.2010.00122.x>
- Kramer, L., Conger, K. J., Rogers, C. R., & Ravindran, N. (2019). Siblings. In B. H. Fiese, m. Celano, K. Deater-Deckard, E. N. Jouriles, & M. A. Whisman (Eds.), *APA handbook of contemporary family psychology: Foundations, methods, and contemporary issues across the lifespan* (pp. 521–538). American Psychological Society.
- Lam, C., McHale, S., & Crouter, A. (2014). Time with peers from middle childhood to late adolescence: Developmental course and adjustment correlates. *Child Development*, 85(4), 1677–1693. <https://doi.org/10.1111/cdev.12235>
- Lamb, M. E. (Ed.). (2004). *The role of the father in child development* (4th ed.). John Wiley & Sons Inc.
- Laursen, B., Finkelstein, B. D., & Betts, N. T. (2001). A developmental meta-analysis of peer conflict resolution. *Developmental Review*, 21, 423–449. <https://doi.org/10.1006/drev.2000.0531>

- Le, B., Dove, N. L., Agnew, C. R., Korn, M. S., & Mutso, A. A. (2010). Predicting nonmarital romantic relationship dissolution: A meta-analytic synthesis. *Personal Relationships, 17*, 377–390. <https://doi.org/10.1111/j.1475-6811.2010.01285.x>.
- Lockwood, R. L., Kitzmann, K. M., & Cohen, R. (2001). The impact of sibling warmth and conflict on children's social competence with peers. *Child Study Journal, 31*(1), 47–69.
- Lund, M. (1985). The development of investment and commitment scales for predicting continuity of personal relationships. *Journal of Social and Personal Relationships, 2*(1), 3–23. <https://doi.org/10.1177/0265407585021001>
- Ma, C. Q., & Huebner, E. S. (2008). Attachment relationships and adolescents' life satisfaction: Some relationships matter more to girls than boys. *Psychology in the Schools, 45*(2), 177–190. <https://doi.org/10.1002/pits.20288>
- Masarik, A. S., Conger, R. D., Martin, M. J., Donnellan, M. B., Masyn, K. E., & Lorenz, F. O. (2013). Romantic relationships in early adulthood: Influences of family, personality, and relationship cognitions. *Personal Relationships, 20*, 356–373. <https://doi.org/10.1111/j.1475-6811.2012.01416.x>.
- Masarik, A., & Rogers, C. (2019). Sibling warmth moderates the intergenerational transmission of romantic relationship hostility. *Journal of Marriage and Family, 82*(5), 1431–1443. <https://doi.org/10.1111/jomf.12654>
- McAnally, H., Sligo, J., Baxter, J., Tansley, J., Bolton, A., & Hancox, R. (2021). Changes to family structure, household composition and address among young New Zealanders: an update. *Kōtuitui: New Zealand Journal Of Social Sciences Online*, 1–12. <https://doi.org/10.1080/1177083x.2021.1957946>
- McBride, J., Blow, D., Kirby, T., Haines, T., Dayne, A., & Triplett, N. (2009). Relationship between maximal squat strength and five, ten, and forty yard sprint times. *Journal of Strength and Conditioning Research, 23*(6), 1633–1636. <https://doi.org/10.1519/jsc.0b013e3181b2b8aa>
- McDaniel, B., & Radesky, J. (2018). Technoference: longitudinal associations between parent technology use, parenting stress, and child behavior problems. *Pediatric Research, 84*(2), 210–218. <https://doi.org/10.1038/s41390-018-0052-6>
- McGuire, S., Mchale, S., & Updegraff, K. (1996). Children's perceptions of the sibling relationship in middle childhood: Connections within and between family relationships. *Personal Relationships, 3*(3), 229–239. <https://doi.org/10.1111/j.1475-6811.1996.tb00114.x>
- McHale, S., Updegraff, K., & Whiteman, S. (2012). Sibling relationships and influences in childhood and adolescence. *Journal of Marriage and Family, 74*(5), 913–930. <https://doi.org/10.1111/j.1741-3737.2012.01011.x>
- McKinney, C., & Renk, K. (2008). Differential parenting between mothers and fathers: Implications for late adolescents. *Journal of Family Issues, 29*(6), 806–827. <https://doi.org/10.1177/0192513X07311222>
- Meier, A., & Allen, G. (2009). Romantic relationships from adolescence to young adulthood: Evidence from the national longitudinal study of adolescent health. *The Sociological Quarterly, 50*(2), 308–335. <https://doi.org/10.1111/j.1533-8525.2009.01142.x>
- Mikulincer, M., & Shaver, P. R. (2004). Security-based self-representations in adulthood: Contents and processes. In W. S. Rholes & J. A. Simpson (Eds.), *Adult attachment: Theory, research, and clinical implications* (pp. 159–195). Guilford Publications.
- Mikulincer, M., & Shaver, P. R. (2008). Adult attachment and affect regulation. In J. Cassidy & P. R. Shaver (Eds.), *Handbook of attachment: Theory, research, and clinical applications* (pp. 503–531). The Guilford Press
- Mikulincer, M., & Shaver, P. (2012). An attachment perspective on psychopathology. *World Psychiatry, 11*(1), 11–15. <https://doi.org/10.1016/j.wpsyc.2012.01.003>
- Mikulincer, M., & Shaver, P. R. (2016). *Attachment in adulthood: Structure, dynamics, and change* (2nd ed.). New York, NY: Guilford Press.
- Milevsky, A. (2005). Compensatory patterns of sibling support in emerging adulthood: Variations in loneliness, self-esteem, depression and life satisfaction. *Journal of Social*

- and Personal Relationships*, 22(6), 743–755.
<https://doi.org/10.1177/0265407505056447>
- Moss, B. F., & Schwebel, A. I. (1993). Defining intimacy in romantic relationships. *Family Relations: An Interdisciplinary Journal of Applied Family Studies*, 42(1), 31–37. <https://doi.org/10.2307/584918>
- Noller, P. (2005). Sibling relationships in adolescence: Learning and growing together. *Personal Relationships*, 12(1), 1–22. <https://doi.org/10.1111/j.1350-4126.2005.00099.x>
- Noller, P., & Northfield, K. (2000). Young adult sibling relationships: Relationship quality and individual adjustment. In *Annual Conference of the Society of Australasian Social Psychologists, Perth, Australia*.
- Noom, M., Dekovic, M., & Meeus, W. (1999). Autonomy, attachment and psychosocial adjustment during adolescence: A double-edged sword? *Journal of Adolescence*, 22(6), 771–783. <https://doi.org/10.1006/jado.1999.0269>
- Ognibene, T. C., & Collins, N. L. (1998). Adult attachment styles, perceived social support and coping strategies. *Journal of Social and Personal Relationships*, 15(3), 323–345. <https://doi.org/10.1177/0265407598153002>
- Parade, S. H., Supple, A. J., & Helms, H. M. (2012). Parenting during childhood predicts relationship satisfaction in young adulthood: A prospective longitudinal perspective. *Marriage and Family Review*, 48, 150–169. <https://doi.org/10.1080/01494929.2011.629078>
- Passanisi, A., Gervasi, A., Madonia, C., Guzzo, G., & Greco, D. (2015). Attachment, self-esteem and shame in emerging adulthood. *Procedia - Social and Behavioral Sciences*, 191, 342–346. <https://doi.org/10.1016/j.sbspro.2015.04.552>
- Perilloux, C., Fleischman, D., & Buss, D. (2008). The daughter-guarding hypothesis: Parental influence on, and emotional reactions to, offspring's mating behavior. *Evolutionary Psychology*, 6(2), 217–233. <https://doi.org/10.1177/147470490800600202>
- Phillips, K., & Schrodtt, P. (2015). Sibling confirmation as a moderator of rivalries and relational outcomes in sibling relationships. *Journal of Family Communication*, 15(1), 58–74. <https://doi.org/10.1080/15267431.2014.980825>
- Picardi, A., Caroppo, E., Fabi, E., Proietti, S., Gennaro, G., Meldolesi, G., & Martinotti, G. (2013). Attachment and parenting in adult patients with anxiety disorders. *Clinical Practice & Epidemiology in Mental Health*, 9(1), 157–163. <https://doi.org/10.2174/1745017901309010157>
- Pillemer, K., Sutor, J. J., Pardo, S., & Henderson, C., Jr. (2010). Mothers' differentiation and depressive symptoms among adult children. *Journal of Marriage and Family*, 72, 333–345. <https://doi.org/10.1111/j.1741-3737.2010.00703.x>
- Raby, K. L., Roisman, G. I., Fraley, R. C., & Simpson, J. A. (2015). The enduring predictive significance of early maternal sensitivity: Social and academic competence through age 32 years. *Child Development*, 86, 695–708. <https://doi.org/10.1111/cdev.12325>
- Rauer, A., & Volling, B. (2007). Differential parenting and sibling jealousy: Developmental correlates of young adults' romantic relationships. *Personal Relationships*, 14(4), 495–511. <https://doi.org/10.1111/j.1475-6811.2007.00168.x>
- Rees, C. (2007). Childhood attachment. *British Journal of General Practice*, 57(544), 920–922. <https://doi.org/10.3399/096016407782317955>
- Reese-Weber, M., & Kahn, J. H. (2005). Familial predictors of sibling and romantic-partner conflict resolution: Comparing late adolescents from intact and divorced families. *Journal of Adolescence*, 28(4), 479–493. <https://doi.org/10.1016/j.adolescence.2004.09.004>
- Regan, P. C., Durvasula, R., Howell, L., Ureno, O., & Rea, M. (2004). Gender, ethnicity, and the developmental timing of first sexual and romantic experiences. *Social Behavior and Personality*, 32(7), 667–676. <https://doi.org/10.2224/sbp.2004.32.7.667>
- Reifman, A. (2011). Romantic relationships in emerging adulthood: Conceptual foundations. In F. D. Fincham & M. Cui (Eds.), *Romantic relationships in emerging adulthood* (pp. 15–26). New York: Cambridge University Press

- Robertson, R., Shepherd, D., & Goedeke, S. (2014). Fighting like brother and sister: Sibling relationships and future adult romantic relationship quality. *Australian Psychologist*, 49(1), 37–43. <https://doi.org/10.1111/j.1742-9544.2012.00084.x>
- Rusbult, C. E. (1983). A longitudinal test of the investment model: The development (and deterioration) of satisfaction and commitment in heterosexual involvements. *Journal of Personality and Social Psychology*, 45, 101–117. <http://dx.doi.org/10.1037/0022-3514.45.1.101>
- Russell, A., Aloa, V., Feder, T., Glover, A., Miller, H., & Palmer, G. (1998). Sex-based differences in parenting styles in a sample with preschool children. *Australian Journal Of Psychology*, 50(2), 89–99. <https://doi.org/10.1080/00049539808257539>
- Sadeh, N., Javdani, S., Finy, M., & Verona, E. (2011). Gender differences in emotional risk for self- and other-directed violence among externalizing adults. *Journal of Consulting and Clinical Psychology*, 79, 106–117. <https://doi.org/10.1037/a0022197>
- Schachter, F. F., & Stone, R. K. (1987). Comparing and contrasting siblings: Defining the self. *Journal of Children in Contemporary Society*, 19(3-4), 55–75. https://doi.org/10.1300/J274v19n03_04
- Scharf, M., & Mayseless, O. (2001). The capacity for romantic intimacy: Exploring the contribution of best friend and marital and parental relationships. *Journal of Adolescence*, 24(3), 379–399. <https://doi.org/10.1006/jado.2001.0405>
- Seers, K., & Critelton, N. (2001). Quantitative research: Designs relevant to nursing and healthcare. *Journal of Research in Nursing*, 6(1), 487–500. <https://doi.org/10.1177/136140960100600103>
- Seiffge-Krenke, I., & Connolly, J. (2010). Adolescent romantic relationships across the globe: Involvement, conflict management, and linkages to parents and peer relationships. *International Journal of Behavioral Development*, 34(2), 97. <https://doi.org/10.1177/0165025409360289>
- Shalash, F., Wood, N., & Parker, T. (2013). Our problems are your sibling's fault: Exploring the connections between conflict styles of siblings during adolescence and later adult committed relationships. *The American Journal of Family Therapy*, 41(4), 288–298. <https://doi.org/10.1080/01926187.2012.698205>
- Shepherd, D., Goedeke, S., Landon, J., Taylor, S., & Williams, J. (2020). The impact of sibling relationships on later-life psychological and subjective well-being. *Journal of Adult Development*, 28(1), 76–86. <https://doi.org/10.1007/s10804-020-09350-4>
- Sherman, A., Lansford, J., & Volling, B. (2006). Sibling relationships and best friendships in young adulthood: Warmth, conflict, and well-being. *Personal Relationships*, 13(2), 151–165. <https://doi.org/10.1111/j.1475-6811.2006.00110.x>
- Shulman, L., Golde, C., Bueschel, A., & Garabedian, K. (2006). Reclaiming education's doctorates: A critique and a proposal. *Educational Researcher*, 35(3), 25–32. <https://doi.org/10.3102/0013189x035003025>
- Siegler, R., Deloache, J., & Eisenberg, N. (2006). *An introduction to child development*. New York, NY: Worth Publishers
- Simpson, J., Collins, W., Tran, S., & Haydon, K. (2007). Attachment and the experience and expression of emotions in romantic relationships: A developmental perspective. *Journal of Personality and Social Psychology*, 92(2), 355–367. <https://doi.org/10.1037/0022-3514.92.2.355>
- Simpson, J., & Rholes, W. S. (2017). Adult attachment, stress, and romantic relationships. *Current Opinion in Psychology*, 13, 19–24. <https://doi.org/10.1016/j.copsyc.2016.04.006>
- Spitze, G., & Trent, K. (2006). Gender differences in adult sibling relations in two-child families. *Journal of Marriage and Family*, 68(4), 977–992. <https://doi.org/10.1111/j.1741-3737.2006.00308.x>
- Sprecher, S. (1999). "I love you more today than yesterday": Romantic partners' perceptions of changes in love and related affect over time. *Journal of Personality and Social Psychology*, 76(1), 46–53. <https://doi.org/10.1037/0022-3514.76.1.46>
- Stackert, R. A., & Bursik, K. (2003). Why am I unsatisfied? Adult attachment style, gendered irrational relationship beliefs, and young adult romantic relationship

- satisfaction. *Personality and Individual Differences*, 34(8), 1419–1429. [https://doi.org/10.1016/S0191-8869\(02\)00124-1](https://doi.org/10.1016/S0191-8869(02)00124-1)
- Statistics NZ. (2020, September 20). *New data shows 1 in 9 children under the age of five lives in a multi-family household*. Stats NZ. <https://www.stats.govt.nz/news/new-data-shows-1-in-9-children-under-the-age-of-five-lives-in-a-multi-family-household>.
- Stewart, R. B., & Marvin, R. S. (1984). Sibling relations: The role of conceptual perspective-taking in the ontogeny of sibling caregiving. *Child Development*, 55(4), 1322–1332. <https://doi.org/10.2307/1130002>
- Stocker, C., Burwell, R., & Briggs, M. L. (2002). Sibling conflict in middle childhood predicts children's adjustment in early adolescence. *Journal of Family Psychology*, 16(1), 50–57. <https://doi.org/10.1037//0893-3200.16.1.50>
- Suitor, J., & Pillemer, K. (2007). Mothers' favoritism in later life. *Research on Aging*, 29(1), 32–55. <https://doi.org/10.1177/0164027506291750>
- Teti, D. M. (2002). Retrospect and prospect in the psychological study of sibling relationships. In J. P. McHale & W. S. Grolnick (Eds.), *Retrospect and prospect in the psychological study of families* (pp. 193–224). Lawrence Erlbaum Associates Publishers.
- Teti, D. M., & Ablard, K. E. (1989). Security of attachment and infant-sibling relationships: a laboratory study. *Child development*, 60(6), 1519–1528. <https://doi.org/10.2307/1130940>
- Thompson, S. (1996). *Going all the way: Teenage girls' tales of sex, romance, and pregnancy*. Macmillan.
- Tolentino, Arthur C. (2006). *An investigation of counseling effectiveness on enhancing relationship satisfaction: Focus on heterosexual, lesbian, gay and bisexual couples*. Capella University
- Trifiro, B., & Gerson, J. (2019). Social media usage patterns: Research note regarding the lack of universal validated measures for active and passive use. *Social Media + Society*, 5(2). <https://doi.org/10.1177/2056305119848743>
- Tyrell, F. A., Wheeler, L. A., Gonzales, N. A., Dumka, L., & Millsap, R. (2016). Family influences on Mexican American adolescents' romantic relationships: moderation by gender and culture. *Journal of Research on Adolescence*, 26(1), 142–158. <https://doi.org/10.1111/jora.12177>
- Updegraff, K., McHale, S., & Crouter, A. (2002). Adolescents' sibling relationship and friendship experiences: Developmental patterns and relationship linkages. *Social Development*, 11(2), 182–204. <https://doi.org/10.1111/1467-9507.00194>
- Vaughn, M. J., & Baier, M. E. (1999). Reliability and validity of the relationship assessment scale. *American Journal of Family Therapy*, 27(2), 137–147. <https://doi.org/10.1080/019261899262023>
- Volling, B. L., & Belsky, J. (1992). The contribution of mother-child and father-child relationships to the quality of sibling interaction: A longitudinal study. *Child Development*, 63(5), 1209–1222. <https://doi.org/10.2307/1131528>
- Volling, B. L., & Blandon, A. Y. (2003). Positive indicators of sibling relationship quality: Psychometric analyses of The Sibling Inventory of Behavior (SIB). In *Child Trend's Positive Outcomes Conference* (pp. 12-13).
- White, N., & Hughes, C. (2017). *Why sibling relationships matter: The role of brother and sister relationships in development and wellbeing*. Routledge.
- Whiteman, S., McHale, S., & Soli, A. (2011). Theoretical perspectives on sibling relationships. *Journal of Family Theory & Review*, 3(2), 124–139. <https://doi.org/10.1111/j.1756-2589.2011.00087.x>
- Whiteman, S., Solmeyer, A., & McHale, S. (2015). Sibling relationships and adolescent adjustment: Longitudinal associations in two-parent African American families. *Journal of Youth and Adolescence*, 44(11), 2042–2053. <https://doi.org/10.1007/s10964-015-0286-0>
- Wiehe, V. R. (1997). *Sibling abuse: Hidden physical, emotional, and sexual trauma* (2nd ed.). Sage Publications, Inc

- Wilkinson, M. (2004). The mind-brain relationship: The emergent self. *Journal of Analytical Psychology*, *49*(1), 83–101. <https://doi.org/10.1111/j.0021-8774.2004.0442.x>
- Yaremych, H., & Volling, B. (2018). Sibling relationships and mothers' and fathers' emotion socialization practices: A within-family perspective. *Early Child Development and Care*, *190*(2), 195–209. <https://doi.org/10.1080/03004430.2018.1461095>
- Zilberstein, K., & Messer, E. (2007). Building a secure base: Treatment of a child with disorganized attachment. *Clinical Social Work Journal*, *38*(1), 85–97. <https://doi.org/10.1007/s10615-007-0097-1>

Appendix A: Questionnaire

Does parental attachment or sibling attachment have the greatest influence on an individual's current romantic relationship?



The research involves answering a series of questionnaires. The first questionnaire contains personal information about you, your parents, and your sibling closest to you in age. The other questionnaires contain questions about current romantic relationship. You will be asked to answer some demographic questions as well. These will take approximately 20 minutes to complete.

Conditions of Consent:

Completion of this questionnaire will be taken as consent to participate.

Please read accompanying participant information sheet for more details regarding this study.

You can participate in this questionnaire, IF:

- You identify as a New Zealander or live in New Zealand
- You are a student aged 18 or above
- You have at least one sibling. If you have multiple siblings, please base your answers on your relationship with the sibling closest in age to you.

What is attachment?

Attachment is described as an emotional bond characterised by consistency and persistence which becomes specifically observable during distress and danger. The attachment theory focuses on the relationship that forms between the primary caregiver and the infant. There are three styles of attachment: secure, anxious, and avoidant. These are typically characterised by positive or negative models of the self and others, and scores in the anxiety and avoidance dimensions persist through to adulthood. Securely attached individuals tend to hold positive views of their self and others, they score lower in anxiety and avoidance dimensions. In contrast, anxiously attached individuals (insecure) hold negative views of the self and score high in the anxiety dimension. Avoidantly attached individuals (insecure) hold negative views of their attachment figures and tend to score high in the avoidant dimension.

What is paternal attachment?

The quality of social relationships is of great importance across the lifespan, particularly the formative years bracketing childhood. Parents tend to have one of the most significant attachments with an individual in their life and research has highlighted those traits and qualities of romantic intimacy tend to develop in early years of childhood. The types of parenting styles utilised on children by parents can influence one's romantic relationships. Parenting styles are reflected in three different ways, authoritarian, authoritative, and permissive. The influence parent-child attachment creates on later life romantic relationships is crucial to understand as parents can proactively enhance the health and wellbeing of individuals in later relationships in many ways.

What is sibling attachment?

Sibling relationships are unique to other relationships within an individual's life and found to be of central importance to both individuals and the family. The relationship with one's sibling, particularly with the sibling closest in age, is unique and as of equal strength to that of the relationship with parents and peers. Siblings have substantial contact and offer companionship throughout childhood and adolescence. In fact, the relationships between siblings are often the longest lasting relationship in an individual's life. Sibling relationships differ due to the proximity, companionship, and availability of siblings compared to that of other relationships.

partners, therefore siblings commonly become social relationship partners. Sibling relationships provide those involved with numerous opportunities to learn about themselves and how they may be viewed by others.

What is a romantic relationship?

Romantic relationships can include, but are not limited to, dating, cohabiting (living together without marriage), engagement, or marriage. Romantic relationships are generally formed during adolescence, a time of identify and self-exploration, and persist through to adulthood. As with sibling attachments, romantic relationships are associated with developmental aspects including adjustment, identify formulation, harmonious friendships, and sexual identify formation.

Please answer the following questions about yourself and your family life:

1. Your Age: _____
2. Your Gender: M / F
3. Ethnicity:
 - a. New Zealand European
 - b. Māori
 - c. Pacific Peoples
 - d. Asian
 - e. Middle Eastern/Latin American/African
 - f. Other Ethnicity
 - g. Residual Categories

If you do not have any siblings, please skip to question 9.

4. Your (closest in age) Sibling's Age: _____
5. Your (closest in age) Sibling's Gender: M / F
6. Relationship with sibling closest to you in age. Please tick one:
 - Full Biological Sibling (i.e., you share the same biological mother and father)
 - Half Sibling (i.e., you share only one biological mother or father)
 - Stepsibling (i.e., you do not share a biological mother and father)
 - Adoptive Sibling
7. Number of older brothers _____ Number of my older Sisters _____
8. Number of younger brothers _____ Number of younger sisters _____
9. Growing up, which best represents your family situation? Please tick one:

- Lived with my biological mother and biological father
- Lived with my biological mother
- Lived with my biological father
- Lived at times with either my biological mother or biological father (i.e., shared care)
- Lived with my biological mother and stepfather
- Lived with my biological father and stepmother
- Lived with adoptive parents
- Lived with foster parents
- Other – please

specify: _____

10. Growing up, which best represents the relationship between your biological parents? Please tick one:

- Married to each other / In a long-term relationship with each other
- They were divorced
- They were separated
- They never married
- I did not know my biological parents
- Other – please

specify: _____

11. Growing up, between the ages of 0-11, who is the person in your life who acted most like a mother to you (not including your sister). Please tick one:

- Biological Mother
- Adoptive Mother
- Stepmother
- Foster Mother
- Partner/friend of parent who lives in household
- Grandmother (including step/half/adopted)
- Aunty (including step/half/adopted)

Does Parental Attachment or Sibling Attachment Influence the Quality of Later Life Romantic Relationships?

No One

Other – Please

Specify: _____

12. Growing up, between the ages of 0-11, who is the person in your life who acted most like a father to you (not including your brother). Please tick one:

Biological Father

Adoptive Father

Stepfather

Foster Father

Partner/friend of parent who lives in household

Grandfather (including step/half/adopted)

Uncle (including step/half/adopted)

No One

Other – Please

Specify: _____

The following information is requested on your relationship length and commitment (please skip if not applicable):

How long have you been (or were you) in your relationship?

Years:

Months:

Your Partner's Age:

Is your relationship with your partner (please tick one box):

Open (casual relationship - partners are free to date and have relationships with other people)

Closed (partners are in a committed relationship involving exclusivity)

Section 1: Tell us about your relationship with your mother

Please answer all questions with regards to your relationship with your mother or the person who you feel most acted as your mother between the ages of 0-11 years. If no one acted as your mother, please skip this section.

	Almost Never or Never True	Not Very Often True	Sometimes True	Often True	Almost Always or Always True
My mother respected my feelings.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt my mother did a good job as my mother.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I wished I had a different mother.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My mother accepted me as I was.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I liked to get my mother's point of view on things I was concerned about.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt it was no use letting my feelings show around my mother.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My mother could tell when I was upset about something.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Talking over my problems with my mother made me feel ashamed or foolish.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My mother expected too much from me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I got upset easily around my mother.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I got upset a lot more than my mother knew about.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When we discussed things, my mother cared about my point of view.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My mother trusted my judgment.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My mother had her own problems, so I didn't bother her with mine.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My mother helped me to understand myself better.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Does Parental Attachment or Sibling Attachment Influence the Quality of Later Life Romantic Relationships?

	Almost Never or Never True	Not Very Often True	Sometimes True	Often True	Almost Always or Always True
I told my mother about my problems and troubles.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt angry with my mother.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I didn't get much attention from my mother.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My mother helped me to talk about my difficulties.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My mother understood me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I was angry about something, my mother tried to be understanding.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I trusted my mother.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My mother didn't understand what I was going through those days.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I could count on my mother when I need to get something off my chest.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If my mother knew something was bothering me, she asked me about it.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Section 2: Tell us about your relationship with your father

Please answer all questions with regards to your relationship with your father or the person who you feel most acted as your father between the ages of 0-11 years. If no one acted as your father, please skip this section.

	Almost Never or Never True	Not Very Often True	Sometimes True	Often True	Almost Always or Always True
My father respected my feelings.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt my father did a good job as my father.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I wished I had a different father.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My father accepted me as I was.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I liked to get my father's point of view on things I was concerned about.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

I felt it was no use letting my feelings show around my father.	<input type="radio"/>				
My father could tell when I was upset about something.	<input type="radio"/>				
Talking over my problems with my father made me feel ashamed or foolish.	<input type="radio"/>				
My father expected too much from me.	<input type="radio"/>				
I got upset easily around my father.	<input type="radio"/>				
I got upset a lot more than my father knew about.	<input type="radio"/>				
When we discussed things, my father cared about my point of view.	<input type="radio"/>				
My father trusted my judgment.	<input type="radio"/>				
My father had his own problems, so I didn't bother him with mine.	<input type="radio"/>				
My father helped me to understand myself better.	<input type="radio"/>				
I told my father about my problems and troubles.	<input type="radio"/>				
I felt angry with my father.	<input type="radio"/>				
I didn't get much attention from my father.	<input type="radio"/>				
My father helped me to talk about my difficulties.	<input type="radio"/>				
My father understood me.	<input type="radio"/>				
When I was angry about something, my father tried to be understanding.	<input type="radio"/>				
I trusted my father.	<input type="radio"/>				
My father didn't understand what I was going through those days.	<input type="radio"/>				

I could count on my father when I needed to get something off my chest.	<input type="radio"/>				
If my father knew something was bothering me, he asked me about it.	<input type="radio"/>				

Section 3: Tell us about your relationship with your sibling

Please answer all questions with regards to your relationship with your sibling between the ages of 0-11 years. If you have more than one sibling, please choose the sibling who is closest in age to you. If you do not have a sibling, please skip this section.

	Almost Never or Never True	Not Very Often True	Sometimes True	Often True	Almost Always or Always True
I liked to get my sibling's point of view on things I was concerned about.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My sibling could tell when I was upset about something.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When we discussed things, my sibling cared about my point of view.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Talking over my problems with my sibling made me feel ashamed or foolish.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I wished I had a different sibling.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My sibling understood me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My sibling encouraged me to talk about my difficulties.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My sibling accepted me as I was.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt the need to be in touch with my sibling more often.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My sibling didn't understand what I was going through those days.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt alone or apart when I was with my sibling.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My sibling listened to what I had to say.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt my sibling was a good sibling.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

My sibling was fairly easy to talk to.	<input type="radio"/>				
When I was angry about something, my sibling tried to be understanding.	<input type="radio"/>				
My sibling helped me to understand myself better.	<input type="radio"/>				
My sibling cared about how I was feeling.	<input type="radio"/>				
I felt angry with my sibling.	<input type="radio"/>				
I could count on my sibling when I needed to get something off my chest.	<input type="radio"/>				
I trusted my sibling.	<input type="radio"/>				
My sibling respected my feelings.	<input type="radio"/>				
I got upset a lot more than my sibling knew about.	<input type="radio"/>				
It seemed as if my sibling was irritated with me for no reason.	<input type="radio"/>				
I could tell my sibling about my problems and troubles.	<input type="radio"/>				
If my sibling knew something was bothering me, they asked me about it.	<input type="radio"/>				

Section 4: Questions about your relationship with your sibling continued

Please answer all questions with regards to your relationship with your sibling between the ages of 0-11 years. If you have more than one sibling, please choose the sibling who is closest in age to you. If you do not have a sibling please skip this section.

Hardly At	Not Too		Very	Extremely
All	Much	Somewhat	Much	Much

Does Parental Attachment or Sibling Attachment Influence the Quality of Later Life Romantic Relationships?

1. Some siblings do nice things for each other a lot, while other siblings do nice things for each other a little. How much do both you and this sibling do nice things for each other?	<input type="radio"/>				
2. How much do you show this sibling how to do things he or she doesn't know how to do?	<input type="radio"/>				
3. How much does this sibling show you how to do things you don't know how to do?	<input type="radio"/>				
4. How much do you tell this sibling what to do?	<input type="radio"/>				
5. How much does this sibling tell you what to do?	<input type="radio"/>				
6. Some siblings care about each other a lot while other siblings don't care about each other that much. How much do you and this sibling care about each other?	<input type="radio"/>				
7. How much do you and this sibling go places and do things together?	<input type="radio"/>				
8. How much do you and this sibling insult and call each other names?	<input type="radio"/>				
9. How much do you and this sibling like the same things?	<input type="radio"/>				
10. How much do you and this sibling tell each other everything?	<input type="radio"/>				

Does Parental Attachment or Sibling Attachment Influence the Quality of Later Life Romantic Relationships?

11. Some siblings try to out-do or beat each other at things a lot, while other siblings try to out- do each other a little. How much do you and this sibling try to out-do each other at things?	<input type="radio"/>				
12. How much do you admire and respect this sibling?	<input type="radio"/>				
13. How much does this sibling admire and respect you?	<input type="radio"/>				
14. How much do you and this sibling disagree and quarrel with each other?	<input type="radio"/>				
15. Some siblings cooperate a lot, while other siblings cooperate a little. How much do you and this sibling cooperate with other?	<input type="radio"/>				
16. How much do you help this sibling with things he or she can't do by him or herself?	<input type="radio"/>				
17. How much does this sibling help you with things you can't do by yourself?	<input type="radio"/>				
18. How much do you make this sibling do things?	<input type="radio"/>				
19. How much does this sibling make you do things?	<input type="radio"/>				
20. How much do you and this sibling love each other?	<input type="radio"/>				
21. Some siblings play around and have fun with each other a lot, while other siblings play around and have fun with each other a little. How much do you and this sibling play around	<input type="radio"/>				

Does Parental Attachment or Sibling Attachment Influence the Quality of Later Life Romantic Relationships?

and have fun with each other?					
22. How much are you and this sibling mean to each other?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
23. How much do you and this sibling have in common?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
24. How much do you and this sibling share secrets and private feelings?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
25. How much do you and this sibling compete with each other?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
26. How much do you look up to and feel proud of this sibling?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
27. How much does this sibling look up to and feel proud of you?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
28. How much do you and this sibling get mad at and get in arguments with each other?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
29. How much do both you and your sibling share with each other?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
30. How much do you teach this sibling things that he or she doesn't know?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
31. How much does this sibling teach you things that you don't know?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
32. How much do you order this sibling around?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
33. How much does this sibling order you around?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	My sibling almost always gets more attention	My sibling often gets more attention	We get about the same amount of attention	Often get more attention	Almost always get more attention

Does Parental Attachment or Sibling Attachment Influence the Quality of Later Life Romantic Relationships?

34. Who gets more attention from your mother, you or this sibling?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
35. Who gets more attention from your father, you or this sibling?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	My sibling almost always is favored	My sibling is often favored	Neither of us is favored	I am often favored	I am almost always favored
36. Who does your mother usually favor, you or this sibling?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
37. Who does your father usually favor, you or this sibling?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	My sibling almost always gets treated better	My sibling often gets treated better	We get treated about the same	I often get treated better	I almost always get treated better
38. Who usually gets treated better by your mother, you or this sibling?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
39. Who usually gets treated better by your father, you or this sibling?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Section 5: Questions about your romantic relationship

Please read each statement and circle the answer which is best suited to your relationship with your partner.

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
I'm afraid that I will lose my partner's love	1	2	3	4	5	6	7

Does Parental Attachment or Sibling Attachment Influence the Quality of Later Life Romantic Relationships?

I often worry that my partner will not want to stay with me	1	2	3	4	5	6	7
I often worry that my partner doesn't really love me.	1	2	3	4	5	6	7
I worry that romantic partners won't care about me as much as I care about them.	1	2	3	4	5	6	7
I often wish that my partner's feelings for me were as strong as my feelings for him or her.	1	2	3	4	5	6	7
I worry a lot about my relationships.	1	2	3	4	5	6	7
When my partner is out of sight, I worry that he or she might become interested in someone else.	1	2	3	4	5	6	7
When I show my feelings for romantic partners, I'm afraid they will not feel the same about me.	1	2	3	4	5	6	7
I rarely worry about my partner leaving me.	1	2	3	4	5	6	7

Does Parental Attachment or Sibling Attachment Influence the Quality of Later Life Romantic Relationships?

My romantic partner makes me doubt myself.	1	2	3	4	5	6	7
I do not often worry about being abandoned.	1	2	3	4	5	6	7
I find that my partner(s) don't want to get as close as I would like.	1	2	3	4	5	6	7
Sometimes romantic partners change their feelings about me for no apparent reason.	1	2	3	4	5	6	7
My desire to be very close sometimes scares people away.	1	2	3	4	5	6	7
I'm afraid that once a romantic partner gets to know me, he or she won't like who I really am.	1	2	3	4	5	6	7
It makes me mad that I don't get the affection and support I need from my partner	1	2	3	4	5	6	7
I worry that I won't measure up to other people.	1	2	3	4	5	6	7
My partner only seems to notice me when I'm angry.	1	2	3	4	5	6	7

Does Parental Attachment or Sibling Attachment Influence the Quality of Later Life Romantic Relationships?

I prefer not to show a partner how I feel deep down.	1	2	3	4	5	6	7
I feel comfortable sharing my private thoughts and feelings with my partner	1	2	3	4	5	6	7
I find it difficult to allow myself to depend on romantic partners.	1	2	3	4	5	6	7
I am very comfortable being close to romantic partners.	1	2	3	4	5	6	7
I don't feel comfortable opening up to romantic partners.	1	2	3	4	5	6	7
I prefer not to be too close to romantic partners.	1	2	3	4	5	6	7
I get uncomfortable when a romantic partner wants to be very close.	1	2	3	4	5	6	7
I find it relatively easy to get close to my partner.	1	2	3	4	5	6	7
It's not difficult for me to get close to my partner.	1	2	3	4	5	6	7

Does Parental Attachment or Sibling Attachment Influence the Quality of Later Life Romantic Relationships?

I usually discuss my problems and concerns with my partner.	1	2	3	4	5	6	7
It helps to turn to my romantic partner in times of need.	1	2	3	4	5	6	7
I tell my partner just about everything.	1	2	3	4	5	6	7
I talk things over with my partner.	1	2	3	4	5	6	7
I am nervous when partners get too close to me.	1	2	3	4	5	6	7
I feel comfortable depending on romantic partners.	1	2	3	4	5	6	7
I find it easy to depend on romantic partners.	1	2	3	4	5	6	7
It's easy for me to be affectionate with my partner.	1	2	3	4	5	6	7
My partner really understands me and my needs.	1	2	3	4	5	6	7

You have reached the end of the questionnaire. We thank you for your time and participation.

Appendix B: Participant Information Sheet

Participant Information Sheet

June 15, 2021

Project Title

Does parental attachment or sibling attachment (closest in age) have the greatest influence on an individual's romantic relationship?

An Invitation

Kia Ora and hello, my name Rajbir Kaur. I am currently a student at Auckland University of Technology (AUT) completing a Master of Health Sciences in Counselling Psychology. I would like to invite you to participate in a research study that I am undertaking as part of fulfilment of my master's year.

It is important that you know that participation in this research study is completely voluntary, and answers will be kept anonymous. If you do decide to participate you can withdraw from the study at any time prior to the submission of their responses, with no negative consequences, after which it will not be possible because the survey is anonymous. If you do not want to take part you are not obligated to give a reason, and this will not affect you in any way.

Your help would be greatly appreciated and if you do agree to take part in this study your completion of the questionnaire will be taken as consent. You will be given a copy of the participant information sheet to keep.

What is the purpose of this research?

The purpose of this study is to test whether parental and sibling relationships create an effect on one's romantic relationship. Research has frequently found links between attachment styles and the quality of later life romantic relationships. The development of an insecure attachment style with attachment figures has been associated with poorer wellbeing and relationship outcomes. It is generally noted that individuals who have a more secure attachment style are likely to have higher relationship satisfaction than individuals who have an avoidant or anxious attachment style. For example, adults with secure childhood attachments have higher self-confidence, more social skills, are more likely to seek close romantic relationships, and are less likely to experience loneliness (Cooper et al., 1998; Hazan & Shaver, 1990). In contrast, sibling relationships are characterised by conflict, rivalry, and support and are generally the longest lasting relationship of one's life and tend to

be unique in contrast to other relationships an individual has. Sibling relationships are supportive and protective in the development of youngsters. Research has concentrated on parent-child attachment and sibling attachment, but the influence of these on one's romantic relationship remains unexplored. Early experiences with parents and siblings can influence future romantic relationships in adulthood, thus it is of interest to look at whether parental or sibling attachments have the greatest influence on romantic relationships.

This research will result in a thesis for the Masters in Psychology programme. The thesis will be available to view from the AUT library and may also result in a publication at a later date.

How was I identified and why am I being invited to participate in this research?

You have been asked to participate in this research as you are a student at AUT and a large sample is required for the study.

To participate you must be over the age of 18 and have at least one sibling. If you have multiple siblings, please base your answers on your relationship with the sibling closest in age to you.

How do I agree to participate in this research?

Your participation in this research is voluntary (it is your choice) and whether or not you choose to participate will neither advantage nor disadvantage you. You are able to withdraw from the study at any time prior to completion of data collection. The removal of your data may not be possible after data collection as the survey is anonymous. Completion of questionnaires will be taken as consent and agreement to participate.

What will happen in this research?

This study involves completing a series of questionnaires. Some questionnaires will ask questions regarding personal information about yourself, and your relationship with your sibling and partner. It will take approximately 20 minutes to complete everything. Completed questionnaires will be taken as agreement and consent for participation.

What are the discomforts and risks?

If you participate, there is a possibility you may experience discomfort from answering questions regarding your relationship with your parents and sibling.

How will these discomforts and risks be alleviated?

In the occurrence of discomfort, you are welcome to access three free sessions of counselling from AUT Health Counselling and Wellbeing. At AUT, all domestic and international students can get free, confidential counselling sessions and mental health support. Counsellors are based at all of our campuses. You can also get help from our mental health advisors.

You can make an appointment with an AUT counsellor to talk about your support needs.

Phone +64 9 921 9292 or email counselling@aut.ac.nz, or drop in to WB level 2, City Campus

If you need help in a mental health crisis you should call:

- Community Mental Health Urgent Response team: 0800 800 717
- In an emergency, you should call 111

You may also wish to explore:

- 1737, need to talk? (free call or text service)
- Puāwaitanga (phone and online service)

What are the benefits?

Benefits for the participant: Experience participating in research and insight about yourself and your relationships.

Benefits for the researcher: You will be helping me complete the research requirement for my Master of Health Science in Psychology. I will get to conduct research in an area that has been relatively neglected and is of interest to me.

Benefits for the community: Greater knowledge in regard to parent and sibling attachment and romantic relationships.

How will my privacy be protected?

No identifying information will be collected, and names will not be asked. Demographic details such as age, ethnicity, gender, how many years apart you are from your sibling and if you are the younger or older sibling will not be reported on an individual level. The data will be kept in a locked filing cabinet and only I will have access to it to complete data analysis and produce the findings.

What are the costs of participating in this research?

There are no costs involved in taking part in this study, other than survey completion time of approximately 15 minutes.

What opportunity do I have to consider this invitation?

Announcements in lectures/tutorials will specify the time period in which the research will take place. Consideration of participation will be from the time of the announcement until the end of the research participation period.

Will I receive feedback on the results of this research?

As the research is anonymous, there will not be individual feedback. Group data in the form of a summary of the findings will be made available upon request by contacting the

researcher. The completed dissertation, with an abstract summarising the research will be available from the AUT library in the latter half of 2022:

<https://aut.ac.nz.libguides.com/c.php?g=205041&p=1352707>.

What do I do if I have concerns about this research?

Any concerns regarding the nature of this project should be notified in the first instance to the Project Researcher, Rajbir Kaur, mwr336@aut.ac.nz,

Concerns regarding the conduct of the research should be notified to the Executive Secretary of AUTEK, Dr Carina Meares., ethics@aut.ac.nz , 921 9999 ext. 6038

Whom do I contact for further information about this research?

Please keep this Information Sheet for your future reference. You are also able to contact the research team as follows:

Researcher Contact Details:

The researcher, Rajbir Kaur, mwr336@aut.ac.nz, can be contacted via her email address

Project Supervisor Contact Details

Associate Professor Jason Landon:

Email: jason.landon@aut.ac.nz

Phone: 09 921 9999 Ext 7894

Appendix C: Ethics Approval

Ethics approval by the Auckland University of Technology Ethics Committee was granted on 16th June 2021, reference number 21/163



Auckland University of Technology Ethics Committee (AUTEC)

Auckland University of Technology
D-88, Private Bag 92006, Auckland 1142, NZ
T: +64 9 921 9999 ext. 8316
E: ethics@aut.ac.nz
www.aut.ac.nz/researchethics

AUT

TE WĀNANGA ARONUI
O TĀMAKI MAKĀU RAU

16 June 2021

Jason Landon
Faculty of Health and Environmental Sciences

Dear Jason

Re Ethics Application: **21/163 Does parental attachment or sibling attachment (closest in age) have the greatest influence an individual's romantic relationship?**

Thank you for providing evidence as requested, which satisfies the points raised by the Auckland University of Technology Ethics Committee (AUTEC).

Your ethics application has been approved for three years until 16 June 2024.

Standard Conditions of Approval

1. The research is to be undertaken in accordance with the [Auckland University of Technology Code of Conduct for Research](#) and as approved by AUTEC in this application.
2. A progress report is due annually on the anniversary of the approval date, using the EA2 form.
3. A final report is due at the expiration of the approval period, or, upon completion of project, using the EA3 form.
4. Any amendments to the project must be approved by AUTEC prior to being implemented. Amendments can be requested using the EA2 form.
5. Any serious or unexpected adverse events must be reported to AUTEC Secretariat as a matter of priority.
6. Any unforeseen events that might affect continued ethical acceptability of the project should also be reported to the AUTEC Secretariat as a matter of priority.
7. It is your responsibility to ensure that the spelling and grammar of documents being provided to participants or external organisations is of a high standard and that all the dates on the documents are updated.

AUTEC grants ethical approval only. You are responsible for obtaining management approval for access for your research from any institution or organisation at which your research is being conducted and you need to meet all ethical, legal, public health, and locality obligations or requirements for the jurisdictions in which the research is being undertaken.

Please quote the application number and title on all future correspondence related to this project.

For any enquiries please contact ethics@aut.ac.nz. The forms mentioned above are available online through <http://www.aut.ac.nz/research/researchethics>

(This is a computer-generated letter for which no signature is required)

The AUTEC Secretariat
Auckland University of Technology Ethics Committee

Cc: rajijhghs@gmail.com

Appendix D: PGR1 Approval

The logo for Auckland University of Technology (AUT) is displayed in white, bold, sans-serif capital letters on a black rectangular background.

27 April 2021

Rajbir Kaur
Unit 2, 259 Shirley Rd
Papatoetoe
Auckland 2025

Dear Rajbir,

Thank you for submitting your PGR1 Research Proposal for the Master of Health Science in Psychology.

Your proposal has been reviewed and approved by the Faculty of Health and Environmental Sciences, which will be noted at the Postgraduate Research Committee May 2021 meeting.

Your research details are:

Programme:	Master of Health Science in Psychology
Paper enrolment:	PSYC997
Student ID:	15899257
Working title:	Does sibling attachment (past and present) directly affect current romantic relationships?
Primary supervisor:	Assoc Prof Jason Landon
Secondary supervisor:	Assoc Prof Daniel Shepherd
Start date:	1 March 2021
Expected completion date:	5 November 2021

For more information about the programme of study, please refer to the *Postgraduate Handbook*.

The AUT website for forms and handbooks is:

<https://sdw.aut.ac.nz/postgraduate-research/pg-forms-policies-and-processes>

Yours sincerely

A handwritten signature in black ink that reads "Susan Crowther".

Professor Susan Crowther

Associate Dean Postgraduate Research • Hoa Mautaki Taura Rangahau
Faculty of Health and Environmental Sciences • Te Ara Hauora A Pūtaiao
Auckland University of Technology • Te Wānanga Aronui o Tāmaki Makau Rau
09 921 9999 extension 7912

Cc Primary supervisor Assoc Prof Jason Landon