

## Quality Of Sibling Relationship And Psychological Well-Being In Adults: Impact Of Sibling Dyad

Dr. Jeronimo D'Silva<sup>1\*</sup>, Dr. Vijay Viegas<sup>2</sup>, Dr. Joslyn Henriques<sup>3</sup>

<sup>1</sup>\*Department of Psychology, Rosary College of Commerce and Arts, Navelim, Goa, India.

Orcid id: <https://orcid.org/0000-0003-3222-5071>

<sup>2</sup>Abbé Faria Post Graduate Department of Psychology, St. Xavier's College, Mapusa-Goa, India.

Orcid id: <https://orcid.org/0000-0002-9891-5393>

<sup>3</sup>Department of Psychology, Dhempe College of Arts and Science, Miramar-Goa, India.

Orcid id: <https://orcid.org/0000-0002-8288-7922>

**\*Corresponding Author:** Dr. Joslyn Henriques

\*Assistant Professor, Department of Psychology, Dhempe College of Arts and Science, Miramar-Goa, India

Email: [joslynhenriques@dhempecollege.edu.in](mailto:joslynhenriques@dhempecollege.edu.in), Contact no.: +91 9604344391

### Abstract

Family is said to be the foundation of an individual and is an indispensable part of one's life. Families include a bunch of relationships such as marital relationships and intergenerational relationships like parents, grandparents, and siblings. A positive and healthy sibling relationship in the family plays a vital role in elevating one's overall well-being, self-esteem, and satisfaction with life. Earlier research on the outcome of sibling relationship quality has highlighted the significant part played by siblings throughout lives. Healthy sibling relationships help an individual to develop compassion in life and appropriately resolve conflicts. For the present study, through a convenient sampling method, we enrolled a total of 120 adults in the age group of 18-55 years from Goa, India, having siblings. Further, we divided the sample as per sibling dyad, i.e. same-sex siblings (sister-sister or brother-brother) and opposite-sex siblings (sister-brother or brother-sister). The tools used for data collection included the lifespan sibling relationship scale (Riggio, 2000) and the Warwick-Edinburgh mental well-being scale (Scottish Executive National Programme, 2006). We used Karl Pearson's Product Moment Correlation to study the relationship between the quality of sibling relationship and the psychological well-being and an independent sample t-test to examine significant differences as a function of sibling dyad in adults. Our results indicate a strong positive correlation between sibling relationship quality and psychological well-being in adults. We also observed significant differences in the quality of sibling relationship and psychological well-being as a function of sibling dyad.

**Keywords:** Adults, Sibling Relationship, Psychological Well-being, Sibling Dyad

### 1. Introduction

A vast majority of research in the field developmental psychology shows that siblings influence each other's development throughout their early childhood, middle childhood, adolescence and later life of an individual (e.g., Cicirelli, 1995; Dunn & Plomin, 1991; McHale & Gamble, 1989; McHale et al., 2001); however not much is known about the sibling relationships during adulthood (Scharf, Shulman, & Avigad-Spitz, 2005). Sibling relationships are a refuge to young people to learn and grow in their own abilities and social skills (McHale, Kim, & Whiteman, 2006; Smith & Hart, 2002). Siblings early in life act as confidantes and sources of expressive support (Lamb & Sutton-Smith, 2014), and serve as agents of socialization (Slomkowski et al., 2005).

Adulthood is a period in human life in which complete physical and intellectual maturity is attained. Even more so than in infancy and childhood, evidence indicates that cognitive development in adulthood is amusing, complex, and energetic, many factors collectively produce a systematic and dynamic variation (Yeh & Lempers, 2004). Adulthood has three phases, namely: early adulthood is between the ages of 18 to 35 years, middle adulthood is between the ages of 35 and 65 and late adulthood is 65+ years. Career, a good physical and mental wellbeing, marriage and starting a family, or potentially monetary autonomy coming about because of money related achievement are a part of early adulthood. The middle adulthood fetches superior financial safety for an individual, good emotional maturity and satisfaction from family growth are also prevalent during middle adulthood, but during this phase, health may become an issue for many individuals. During late adulthood, one's physical growth starts to deteriorate, however for many individuals mentally there is likely to be a settling feeling and more peace of mind.

Family is an important part of an individual's life where the foundation for the future life of an individual is laid. Due to synchronized life spans, relationships with siblings are the most enduring family relationships in a person's life. This relationship begins when a younger sibling is born and ends with the death of one of the siblings (Noller, 2005). Sibling relationships are characterized by warmth and involvement in the lives of each other. Conflict and rivalry also characterize sibling relationships and are therefore sibling relationships are best characterized as emotionally ambivalent (Bedford, 1989; Deater-Deckard et al., 2002). Like every other relationship, sibling relationships also change with time, however, siblings continue to remain as vital figures throughout the life span (Cicirelli, 1995; Schulman, 1999).

Despite being the longest and most enduring bond experienced by most individuals, sibling relationships remain relatively unexplored during adulthood (Hamwey et al., 2018). The present study thus examined the relationship between the quality of sibling relationship and psychological well-being among adults and the impact of sibling dyad on the individual's sibling relationship quality and psychological well-being. There is ample research carried out on family relationships influencing the psychological well-being of an individual but sibling relationships, in particular, influencing a person's psychological well-being is understudied. Also, among adults, studies on sibling relationships in early adulthood and later adulthood are vast as compared to middle adulthood. Further, there is a vast majority of sibling research that focuses on relationships in childhood, sibling attachments, rivalry, birth order, and other related topics (Dunn, 1983; Furman & Buhrmester, 1985; Kennedy & Kramer, 2008; Stocker et al., 1989) but there is less known about sibling dyad influencing sibling relationship.

Cicirelli (1995) acknowledged the lack of a cohesive image of the sibling relationships' developmental path.

This study will provide one with an insight into how sibling relationship quality can impact an individual's psychological well-being. Siblings can directly impact one another's growth by serving as role models, social associates, and sometimes as foils. Siblings can also impact one another meanderingly due to the wider family subtleties (McHale et al., 2006). Regardless of one's role as a sibling, the relationship represents a long-term bond that impacts many aspects of an individual's life. Since sibling relations begin early and usually last long, the relationship patterns developed may be generalized to other relationships such as those with peers and even relationships in adult life (Newman, 1994). The study will also provide an insight into how sibling dyad (same-sex siblings and opposite-sex siblings) can influence sibling relationship quality and psychological well-being among adults.

### **Sibling Relationship**

The sibling bond as defined by Bank and Kahn (1982) is "many things including a tie that unites, an obligation or an agreement, and a connection or a system of connections". The role that siblings play in the lives of one another is inimitable. Siblings represent the companionship of parents as well as the support like that provided by peers (Furman & Buhrmester, 1985). Even if the relationship between siblings is difficult or uncomfortable, living in the same family environment and sharing the same history helps create a level of comfort with siblings (Welander, 1997). According to Bank and Kahn (1982), the collaboration between siblings is highest during stressful times and during times of change. Also, research evidence indicates that the interaction among siblings is more during different phases of life such as childhood and adolescence and then this relationship is rebooted again in late adulthood (Welander, 1997). The overall family cohesiveness is often reflected through sibling relationships (East & Khoo, 2005).

The crucial role that siblings play throughout the life span has been highlighted by numerous research studies. Positive relationships with siblings not just increase an individuals' wellbeing (Sherman et al., 2006), life satisfaction (Milevsky, 2005), and self-esteem (Yeh & Lempers, 2004) but it also aids in developing strategies to resolve conflicts (Howe et al., 2002) and it also helps in developing empathy (Lam et al., 2012). Positive and close relationships with siblings could also decrease the risk of depressive symptoms by acting as a shield (Buist et al., 2013). In contrast, negative and conflictual sibling relationships could lead to negative outcomes like engaging in risky behaviours and problems with adjustment due to the negative attitudes and high levels of conflict that they have towards each other (Natsuaki et al., 2009; Rende et al., 2005).

Siblings frequently act as a strong positive or negative influence in each other's lives as they grow up together. In fact, some studies show that siblings often play a more influential role in the lives and development of youth than the actual parents (e.g., Slomkowski et al., 2005). Prominently, a family systems perspective (Cox & Paley, 2002) advocates that these dynamics mostly infuse into all family relationships.

Research by Welander (1997) on sibling relationships among young, middle-aged siblings revealed that the level of physical association between siblings during these years is low unless one of the siblings is married or has no children. The amount of physical association grows as people age, their children move out, and their parents are no more and siblings become the only tie to the family of origin during late adulthood. Research by Avioli (1989) also found that sibling relations become more central through the years as they serve a social support function.

### **Psychological Well-being**

Psychological wellbeing as defined by Diener (1997) refers to how people evaluate their lives which may be in the form of cognition or in the form of affect. Cognitive evaluations are information-based appraisals of one's life based on the satisfaction with one's life. While affective evaluations are hedonic evaluations that are guided by emotions and feelings. Ryff (1995) classified six distinct components of psychological wellbeing which include self-acceptance, personal growth, purpose in life, positive relations with others, environmental mastery, and autonomy.

Llewellyn et al. (2008) found a positive correlation between psychological well-being and cognitive performance in adults. Previous research evidence also demonstrates a positive correlation between environmental mastery and episodic memory performance (Klaming et al., 2016), purpose in life (Windsor et al., 2015; Boyle et al., 2010), and positive relationships with others (Seeman et al., 2001; Krueger et al., 2009). Also, increased levels of purpose in life (Boyle et al., 2010) and social engagement in later life (Wang et al., 2002; Marioni et al., 2015) have been linked to a decreased risk of developing Alzheimer's dementia.

### **Sibling Dyad**

Majority of people grow up with at least one sibling. Sibling relationships are one of the closest relationships a person has throughout life but it can also be marked with conflict and rivalry (Buhrmester & Furman, 1990; Volling, 2003). Though for every individual, parents are the most important people, a major role is also played by siblings since they live in the same family (Caplan, 1983). Siblings compete with one another for a share of the attention and affection of their parents. On the other hand, similar interests among siblings enable them to unite and support one another especially in times of distress, loneliness or other major crises. Nonetheless, siblings also experience contradictory feelings and they may fight and be angry with each other which is entirely natural (Caplan, 1983). Hence, the actions and reactions of siblings and their identification or lack of identification aids in the formation of sibling relationships (Bank & Kahn, 1982). According to Caplow (1968), the formation of a dyad is common among siblings of the same sex and among siblings who are close in age. Sex combinations could also contribute to the development of feelings of closeness on one hand and feelings of rivalry on the other. Buhrmester and Furman (1990) in their study found that same-sex siblings were more attached to one another than opposite-sex siblings. A similar finding was reported by Tucker et al., (1997) who found that same-sex sibling dyads were more open toward each other and more supportive toward each other and were also much more influenced by each other as compared to opposite-sex sibling dyads.

The connection between sibling quality and its psychological outcomes in adulthood was analyzed by Marotta (2015). The findings of the study revealed that sibling relationship quality as measured by warmth, rivalry, and conflict was significantly related to psychological outcomes like self-esteem, altruism, and affectivity. Another study that explored how sibling structure influences adolescents' mental health and whether sibling relationship quality mediates or interacts with sibling structure found that sibling structure had few associations with mental health and sibling relationship quality generally does not mediate (or suppress) these associations. However, sibling structure moderates the association between sibling relationship quality and adolescents' mental health (Anastasia & Yuan, 2009).

## **2. Materials and Method**

### **Hypotheses of the study**

Ha 1: There exists a positive correlation between the quality of sibling relationship and psychological well-being in adults.

Ha 2: There exists a significant difference in the quality of sibling relationship as a function of sibling dyad in adults.

Ha 3: There exists a significant difference in psychological well-being as a function of sibling dyad in adults.

### **Participants**

Our study involved a total of 120 adults having siblings aged 18-55 years ( $M = 37.3$ ,  $SD = 7.39$ ). Of these, 62 participants were male, and 58 participants were female chosen from Goa, India. Further, 34 participants were male and older siblings; 28 were male and younger siblings. 31 participants were female and older siblings; 27 were female and younger siblings. After the explanation of the study objectives, the participants gave their verbal consent to participate in the study and voluntarily filled out the questionnaires. Honest answers were encouraged, and confidentiality was assured to the participants. For the purpose of the study, we grouped the participants as per sibling dyad i.e. ( $N = 65$ ) same-sex siblings- sister-sister or brother-brother and ( $N=55$ ) opposite-sex siblings- sister-brother or brother-sister. All the siblings were biological siblings and were selected from intact families. The participants were requested to select one of their siblings as their reference in the study. Most of the participants in our study (53.3%) had one sibling, 27.5% had two siblings, 15.5% had three siblings, and 3.7% had four siblings.

### **Procedure**

For the smooth administration of the instruments, we established rapport with the participants after obtaining their consent for participation. The participants of the study were assured of confidentiality and the lifespan sibling relationship scale

and the Warwick-Edinburgh mental well-being scale were administered for the purpose of data collection. Upon completion of the questionnaires, the participants were debriefed about the study and were thanked for their participation.

**Instruments**

***Lifespan Sibling Relationship Scale (LSRS)***

The lifespan sibling relationship scale developed by Heidi R. Riggio (2000) is a self-report instrument that measures one’s attitude towards sibling relationships in childhood and adulthood. As per the scale instructions, while answering the questionnaire items, the individual must keep only one sibling in mind to sustain the uniformity of answers. The degree of agreement or disagreement with the 48 statements is rated using a Likert scale 5-points from 1 strongly disagree to 5 strongly agree. A total score is calculated, the scores range from 48-240. Higher scores on the instrument indicate more optimistic feelings, beliefs and behaviours individuals have towards their siblings. Thus, higher scores indicate a better quality of the sibling relationship.

***The Warwick-Edinburgh Mental Well-being Scale (WEMWBS)***

The Warwick-Edinburgh mental well-being scale (2006) is developed by the University of Warwick and the University of Edinburgh and is jointly owned by NHS Health Scotland. The scale is a short and psychometrically robust and measures mental wellbeing by focusing on the positive aspects of mental health. The scores on the scale range from 14 – 70, such that higher the score, higher is the individual’s psychological well-being.

**3. Results**

**Table1:** Correlation Coefficient for Quality of Sibling Relationship and Psychological Well-being

Measures	Correlation Coefficient
Quality of Sibling Relationship	0.94**
Psychological Well-being	

\*\*p < 0.01: Highly Significant

Table 1 indicates the correlation coefficient for the quality of the sibling relationship and psychological well-being. Karl Pearson’s Product Moment Correlation was computed to explore the relationship between the variables under study. The correlation coefficient for the quality of sibling relationship and psychological well-being was computed to be (r = 0.94, p < 0.01). A strong positive correlation between the quality of sibling relationship and psychological well-being was observed thus indicating that better the quality of the sibling relationship, better will be the psychological well-being in adults and vice versa.

**Table 2:** Mean, Standard Deviation and t-value for Quality of Sibling Relationship as a function of Sibling Dyad

Measure	Sibling Dyad	Mean	Standard Deviation	t-value
Quality Of Sibling Relationship	same sex siblings	124.37	64.28	3.71**
	opposite sex siblings	84.70	52.11	

Table 2 indicates mean, standard deviation and t-value for quality of sibling relationship as a function of sibling dyad. Independent sample t-test was used to find significant differences in the sample groups. For the quality of sibling relationship, the mean score for siblings of the same dyad and siblings of the opposite dyad were 124.37 and 84.70 respectively with corresponding standard deviations of 64.28 and 52.11, respectively. The t-value was computed to be (t = 3.71, p < 0.01). By comparing the mean score it is observed that adults with same-sex siblings have a better quality of sibling relationship as compared to adults with opposite-sex siblings.

**Table 3:** Mean, Standard Deviation and t-value for Psychological Well-being as a function of Sibling Dyad

Measure	Sibling Dyad	Mean	Standard Deviation	t-value
Psychological Well-being	Same sex siblings	34.90	17.24	2.76**
	Opposite sex siblings	26.30	16.77	

\*\*p < 0.01: Highly Significant

Table 3 indicates mean, standard deviation and t-value for psychological well-being as a function of sibling dyad. Independent sample t-test was used to find significant differences in the sample groups. The mean score for same-sex siblings and opposite-sex siblings were 34.90 and 26.30 respectively with a corresponding standard deviation of 17.24 and 16.77 respectively. The t-value was computed to be ( $t = 2.76, p < 0.01$ ). By comparing mean score it is observed that adults with same-sex siblings have higher psychological well-being as compared adults with opposite-sex siblings.

#### 4. Discussion

##### *The correlation coefficient for the quality of sibling relationship and psychological well-being*

As indicated in table 1, there was a strong positive correlation between the quality of sibling relationship and psychological well-being. This finding is probably because sibling relationship is likely to be the most influencing and enduring relationships of one's lives that begins with the birth of a younger sibling and continues until the end of the lifespan. The impact that siblings have on one's young and adult lives is enormous. Growing up with people different than oneself in terms of their personalities and aptitudes inspires high emotional and social understanding of the ones they live with and this continues throughout life. An individual's communication loop could be fortified by observing and listening to their siblings. One swiftly comprehends unique techniques to negotiate with their siblings and thus, growing up with siblings would help an individual to manage conflict which is learnt during the negotiations that the individual has with their siblings. Siblings can also impact one's physical and mental wellbeing thus shaping us into the individuals we become later in life. Individuals who share healthy relationships with their siblings may feel more braced and sheltered during their adult years because siblings know almost everything about each other since they share the same parents, live in the same home environment, receiving the same conditioning and similar discipline, and even the same discontents. Though siblings may not always like each other or may not always agree with one another, they will still care and love and show great interest in one another which is not easy to duplicate in other relationships. In times when they experience traumatic events or serious illnesses, siblings provide psychological, emotional, and social support to one another.

Sibling relationships if cordial can bring out the best in people, but unfortunately, not all sibling relations are affable. Sometimes siblings could have frequent conflicts and these conflicts could be highly aggressive, violent, and abusive. Such conflicts could lead to poor adjustment. Resentments and negative feelings towards ones' siblings are easier to express during childhood years but as one ages, unpleasant feelings like anger and jealousy are suppressed which only drifts siblings apart. If allowed to persevere over time, any kind of unfavourable sibling interactions could have an impact on mental health which could in turn influence an individual's psychological wellbeing. A study by Buist et al. (2013) revealed that sibling conflicts that are of extreme levels are associated with violent tendencies in adult years. Caffaro (2011) also reported that sibling violence in extreme forms is linked to emotional maladjustment. On the other hand, research by Milevsky (2005) that compared individuals with high and low degrees of sibling support, found that individuals with high levels of support from siblings obtained higher scores on life satisfaction and self-esteem and obtained lower scores on depression and loneliness. Bedford and Avioli (2001) also reported that higher levels of wellbeing were associated with high-quality relationships among siblings.

##### *Significant differences exist in the quality of sibling relationship as a function of sibling dyad*

As shown in table 2, the quality of sibling relationship as a function of sibling dyad was better among same-sex siblings as compared to opposite-sex siblings. This finding is probably obtained because as an individual grows, he or she is exposed to traditional gender roles through their homes, society, schools, and other places. For instance, brothers are taught to be valiant and to protect their sisters because being females they may not be strong enough to protect themselves. No matter how independent sisters are, they usually approach their brothers for advice and help concerning things that society considers 'masculine' such as moving some heavy object or if she perceives some threat or for advice on fixing something, etc. When brothers approach their brothers for any help or advice, it usually pertains to finances, sports, threats, politics, and so on. On the other hand, when sisters approach their sisters for any advice, it usually pertains to things that are emotional or things that are fashion and beauty related. Sisters together usually enjoy doing activities like shopping, gossiping, and other things that are considered 'girly' by society and hence, there is a certain level of affection present in the sister-sister dyad which may not be present in the brother-sister dyad. Since most brothers share similar interests with their brothers, the brother-brother dyad may also show some amount of affection, but this may not be as much as the affection seen in the sister-sister dyad. Also, based on gender norms, warmth-closeness is greater between siblings of the same gender which could probably be due to the predetermined ideals of what is considered as appropriate behaviour for a male versus a female. While men according to these preconceived notions are expected to be reserved with their affections and to endure pain or hardship without complaining or showing how they feel, women, on the other hand, are accepted as emotional, openly affectionate, and sensitive.

Another reason for this finding could be the similarities that same-sex siblings share with one another. According to social psychologists, people who are alike, are attracted to one another (Lazarsfeld & Merton, 1954). Also, according to Homans

(1974), “people who share similar values or status have rewarding interactions as they express their views to each other, which leads to liking the other person”. Research by Kim et al. (2006) also found higher intimacy in same-sex siblings than mixed-sex siblings.

#### ***Significant differences exist in psychological well-being as a function of sibling dyad***

As specified in table 3, psychological well-being was higher among same-sex siblings as compared to opposite-sex siblings. Family relationships are a significant source of social influence and connection throughout ones’ life. Through every stage of life, family members are connected in crucial ways. The quality of relationship shared with family members that include the social support received from family members in the form of love, advice, and care and also the strain experienced in the form of arguments, critical behaviour, unrealistic demands, etc., can impact one’s wellbeing through behavioural and psychosocial pathways. The relationship that a person shares with his or her siblings is one such family relationship that has the potential to influence a person’s psychological well-being. In times of crisis, most siblings help and support one another. They also provide care and give and receive emotional support from each other. Siblings may also have similar interests that bring them closer to each other and helps them to get along with each other and this is especially true for siblings of the same sex. Further, as previously mentioned, the differences in psychological well-being could be due to gender roles which influences how males or females must feel, think, and behave that can affect their psychological well-being. Research findings by Voorpostel and Blieszner (2008) indicate that “general social support exchanges with siblings may be influenced by gender and larger family context; sisters exchanged more support with their siblings when they had higher-quality relationships with their parents, but brothers exhibited a more compensatory role, exchanging more emotional support with siblings when they had lower quality relationships with their parents”. Research evidence by Hartwell and Benson (2007) also indicates that families provide meaning and purpose along with social and tangible resources that can benefit the wellbeing of family members. Volkon (2006) found that higher-quality relationships with sisters were linked to higher wellbeing.

### **5. Conclusion**

Siblings help one another learn about the world in numerous ways. They provide an innocuous and sheltered place in which one can learn ways to interact with others who are stimulating and engaging playmates, learn the management of differences, and the regulations of emotions that are both positive and negative in ways that are socially acceptable. Siblings also provide numerous prospects to each other for using cognitive skills to prove their viewpoints as well as to teach or emulate the actions of each other. Warm and positive sibling relationships may positively benefit us for a lifetime while early sibling relationships that are difficult may be associated with poor developmental outcomes.

### **6. Limitations of the study**

The current research generates important findings concerning adolescents from single and two parenting homes. However, although the study has yielded some preliminary findings, it is not without limitations. Larger sample size may have provided more reliable results. Literature analysis is a vital aspect of any study, as it helps to identify the type of work that has been performed so far in research. The results of the literature analysis are used as the basis by the researcher to achieve his research objectives. There was little prior research available on how sibling relationship quality can influence the individual’s psychological well-being. The difference in age between siblings was not taken into consideration. Additionally, the participants for the study comprised of adults from intact families and therefore, the results of the current study may be extended to adults with biological siblings and who belong to intact families (families where both biological parents are present within the family).

### **7. Suggestions for future research**

In line with the results obtained from the research, future studies need to be conducted to understand the potential connection between sibling relationship quality and psychological well-being considering the various factors affecting this connection because if not understood in the right manner, it can affect the individual’s psychological well-being as sibling relationship is considered to be the longest-lasting family relationship. Similar research can be conducted by extending the sample size and conducting it in a larger geographical area. Among same-sex siblings, separate subgroups of sister-sister and brother-brother dyad can be included. The connection between the quality of sibling relationships and family relationships under various parenting styles could be examined. Additionally, a study on factors affecting sibling relationships can also be examined such as age spacing, birth order, the type of parenting style received, current living circumstances and so on.

## 8. Implications of the study

While the importance placed on sibling relationships within families may vary across cultures and societies, the sense of belonging generally inherent in a sibling relationship is significant. This study highlights the associations between the quality of sibling relationships and psychological well-being among adults. It is important for treatment providers, particularly therapists, to consider the role siblings play in one another's life, especially when working with clients who present with limited or atypical social networks. It is important to keep in mind the possible influence that a positive sibling relationship can have on an individual's psychological well-being. Both, family therapists as well as individual therapists should consider including the sibling in the therapeutic process. Therapy can be a safe place to explore the nature of one's sibling relationships, thus allowing an individual to explore their relationship with their siblings as a means for increasing support and psychological well-being.

The present study also has insinuations related to society. Parents need to have a good understanding of the potential impacts of the sibling relationship. Having an awareness that the sibling relationship can both positively and negatively influence an individual's psychological well-being, can help parents to be more in tune to fostering more warmth, and positive relationships among their children from childhood and not imposing upon them gender norms but dealing with them fairly irrespective of whether their child is a male or female because the quality of relationship siblings share with each other in childhood is likely to be carried on throughout one's lifespan. Workshops and/or training can offer parent's support and education on the various facets of the sibling relationship (affect, cognition, behaviour, warmth, conflict, rivalry), advice on how to promote healthy sibling relationships in their children and for adults to improve their relationship with their siblings.

## 9. Bibliography

1. Anastasia, S. & Yuan, V. (2009). Sibling relationships and adolescents' mental health: The interrelationship of structure and quality. *Journal of Family Issues*, 30(9), 1221–1244. <https://doi.org/10.1177/0192513X09334906>
2. Avioli, P. S. (1989). The social support functions of siblings in later life. *American Behavioral Scientist*, 33(1), 45–57. <https://doi:10.1177/0002764289033001005>
3. Bank, S. & Khan, M. D. (1982). *The sibling bond*. Basic books.
4. Bedford, V. H. (1989). Ambivalence in adult sibling relationships. *Journal of Family Issues*, 10(2), 211–224. <https://doi:10.1177/019251389010002004>
5. Bedford, V.H. & Avioli, P.S. (2001). Variations on sibling intimacy in old age. *Generations*. 25 (2), 34-40.
6. Boyle, P. A., Buchman, A. S. & Bennett, D. A. (2010). Purpose in life is associated with a reduced risk of incident disability among community-dwelling older persons. *NCBI*. 18(12), 1093–1102.
7. <https://doi: 10.1097/JGP.0b013e3181d6c259>
8. Buhrmester, D., & Furman, W. (1990). Perceptions of sibling relationships during middle childhood and adolescence. *Child Development*, 61, 1387-1398. <https://doi.org/10.1111/j.1467-8624.1990.tb02869.x>
9. Buist, K. L., Deković, M., & Prinzie, P. (2013). Sibling relationship quality and psychopathology of children and adolescents: A meta-analysis. *Clinical Psychology Review*, 33(1), 97–106. <https://doi:10.1016/j.cpr.2012.10.007>
10. Caffaro, J. (2011). Sibling violence and systems-oriented therapy. In J. Caspi (Ed.), *Sibling development: Implications for mental health practitioners*, 245–272. Springer Publishing Company.
11. <https://psycnet.apa.org/record/2010-23830-012>
12. Caplan, R. D. (1983). *Person-environment fit: Past, present, and future*. Wiley.
13. Caplow, T. (1968). *Two against one: Coalitions in triads*. Prentice-Hall.
14. Cicirelli, V. G. (1995). *Sibling relationships across the life span*. Plenum.
15. Cicirelli, V. G. (1995). Sibling death and death dear in relation to depressive symptomatology in older adults. *The Journals of Gerontology: Series B*, 64B, 24–32. <https://doi:10.1093/geronb/ gbn024>
16. Cox, M. J., & Paley, B. (2002). Understanding families as systems. *Current Directions in Psychological Science*, 12, 193–196. <https://doi.org/10.1111/1467-8721.01259>
17. Deater-Deckard, K., Dunn, J., & Lussier, G. (2002). Sibling relationships and social-emotional adjustment in different family contexts. *Social Development*, 11(4), 571–590. <https://doi.org/10.1111/1467-9507.00216>
18. Diener, E., Suh, E. and Oishi, S. (1997). "Recent findings of subjective well-being." *Indian Journal of Clinical Psychology*. Available at [www.psych.uiuc.edu/~ediener/hottopic/paper1.htm](http://www.psych.uiuc.edu/~ediener/hottopic/paper1.htm). Dunn, J. (1983). Sibling relationships in early childhood. *Child Development*, 54(4), 787–811. <https://doi.org/10.2307/1129886>
19. Dunn, J., & Plomin, R. (1991). Why are siblings so different? The significance of differences in sibling experiences within the family. *Family Process*, 30, 271–283. <https://doi:10.1111/j.1545-5300.1991.00271.x>
20. East, P. L., & Khoo, S. T. (2005). Longitudinal pathways linking family factors and sibling relationship qualities to adolescent substance use and sexual risk behaviors. *Journal of Family Psychology*, 19(4), 571–580. <https://doi:10.1037/0893-3200.19.4.571>

21. Furman W, Buhrmester D. (1985) Children's perceptions of the qualities of sibling relationships. *Child Development*, 56(2):448-461. <https://doi.org/10.1111/j.1467-8624.1985.tb00119.x>
22. Hamwey, M. K., Rolan, E. P., Jensen, A. C., & Whiteman, S. D. (2019). "Absence makes the heart grow fonder": A qualitative examination of sibling relationships during emerging adulthood. *Journal of Social and Personal Relationships*, 36(8), 2487–2506. <https://doi.org/10.1177/0265407518789514>
23. Hartwell, S. W. & Benson, P. (2007). Social integration: A conceptual overview and two case studies. *Mental Health, Social Mirror*. 329-353. [https://doi.org/10.1007/978-0-387-36320-2\\_14](https://doi.org/10.1007/978-0-387-36320-2_14)
24. Homans, G. (1974). *Social Behavior: Its Elementary Forms*. New York: Harcourt Brace Jovanovich.
25. Howe, N., Rinaldi, C. M., Jennings, M., & Petrakos, H. (2002). "No! The lambs can stay out because they got cozies": Constructive and destructive sibling conflict, pretend play, and social understanding. *Child Development*, 73(5), 1460–1473. <https://doi.org/10.1111/1467-8624.00483>
26. Kennedy, D. E., & Kramer, L. (2008). Improving emotion regulation and sibling relationship quality: The more fun with sisters and brothers program. *Family Relations*, 57(5), 567–578. <https://doi.org/10.1111/j.1741-3729.2008.00523.x>
27. Kim, J., McHale, S. M., Osgood, D. W. & Crouter, A. C. (2006). Longitudinal course and family correlates of sibling relationships from childhood through adolescence. *Child Development*, 77(6), 1746-61. <https://doi.org/10.1111/j.1467-8624.2006.00971.x>
28. Klaming, R., Veltman, D. J. & Comijs, H. C. (2016). The impact of personality on memory functions in older adults—results from the longitudinal aging study Amsterdam. *International Journal of Geriatric Psychiatry*, 32(7), 798-804. <https://doi.org/10.1002/gps.4527>
29. Krueger, K. R., Wilson, R. S. & Kamenetsky, J. M. (2009). Social engagement and cognitive function in old age. *NCBI*. 35(1), 45–60. <https://doi.org/10.1093/geronl/35.1.45>
30. Lam, C. B., Solmeyer, A. R., & McHale, S. M. (2012). Sibling relationships and empathy across the transition to adolescence. *Journal of Youth and Adolescence*, 41(12), 1657–1670. <https://doi.org/10.1007/s10964-012-9781-8>
31. Lamb, M. E., & Sutton-Smith, B. (2014). *Sibling relationships: Their nature and significance across the lifespan*. New York, NY: Psychology Press
32. Lazarsfeld, Paul F., and Robert K. Merton. 1954. "Friendship as a social process: A substantive and methodological analysis." In *Freedom and Control in Modern Society*, edited by Morroe Berger, Theodore Abel and Charles H. New York: Van Nostrand.
33. Llewellyn, D.J., Lang, I.A., Langa, K.A., & Huppert, F.A. (2008). Cognitive function and psychological well-being: findings from a population-based cohort, *Age and Ageing*, 37, (6), 685–689. <https://doi.org/10.1093/ageing/afn194>
34. Marioni, R.E., Proust-Lima, C., Amieva, H., Brayne, C., Matthews, F. E., Dartigues, J.F. & Jacqmin-Gadda, H. (2015). Social activity, cognitive decline and dementia risk: a 20-year prospective cohort study. *BMC Public Health*, 15. <https://doi.org/10.1186/s12889-015-2426-6>
35. Marotta, A.K. (2015). *The Relationship Between Sibling Relationship Quality and Psychosocial Outcomes in Emerging Adulthood* (Doctoral thesis. Columbia University). [https://file:///C:/Users/Hp/Downloads/Marotta\\_columbia\\_0054D\\_12922%20\(1\).pdf](https://file:///C:/Users/Hp/Downloads/Marotta_columbia_0054D_12922%20(1).pdf)
36. McHale, S. M., & Gamble, W. C. (1989). Sibling relationships of children with disabled and nondisabled brothers and sisters. *Developmental Psychology*, 25, 421–429.
37. McHale, S. M., Updegraff, K. A., Helms-Erikson, H., & Crouter, A. C. (2001). Sibling influences on gender development in middle childhood and early adolescence: A longitudinal study. *Developmental Psychology*, 37, 115–125. <https://doi.org/10.1037/0012-1649.37.1.115>
38. McHale, S. M., Kim, J.-Y., & Whiteman, S. D. (2006). Close relationships: Functions, forms and processes. In P. Noller & J. A. Feeney, *Sibling relationships in childhood and adolescence* (pp. 127–149). Hove, UK: Psychology Press/Taylor & Francis (UK)
39. McHale, S. M., Updegraff, K. A., & Whiteman, S. D. (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>
40. 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, 743-755. <https://doi.org/10.1177/0265407505056447>
41. Natsuaki, M. N., Ge, X., Reiss, D., & Neiderhiser, J. M. (2009). Aggressive behavior between siblings and the development of externalizing problems: Evidence from a genetically sensitive study. *Developmental Psychology*, 45(4), 1009–1018. <https://doi.org/10.1037/a0015698>
42. Newman, J. (1994). Conflict and friendship in sibling relationships: A review. *Child Study Journal*, 24(2), 119–152. <https://psycnet.apa.org/record/1995-17057-001>
43. Noller, P. (2005). Sibling relationships in adolescence: Learning and growing together. *Personal Relationships*, 12(1), 1–22. <https://doi.org/10.1111/j.1350-4126.200500099.x>



44. Rende, R., Slomkowski, C., Lloyd-Richardson, E., & Niaura, R. (2005). Sibling effects on substance use in adolescence: Social contagion and genetic relatedness. *Journal of Family Psychology*, 19(4), 611–618. <https://doi.org/10.1037/0893-3200.19.4.611>
45. Riggio, H. R. (2000). Measuring attitudes toward adult sibling relationships: The lifespan sibling relationship scale. *SAGE journals*, 17(6), 707-728. <https://doi.org/10.1177/0265407500176001>
46. Ryff, C. D. (1995). Psychological well-being in adult life. *Current Directions in Psychological Science*, 4(4), 99–104. <https://doi.org/10.1111/1467-8721>.
47. Scharf, M., Shulman, S., & Avigad-Spitz, L. (2005). Sibling relationships in emerging adulthood and in adolescence. *Journal of Adolescent Research*, 20, 64–90. <https://doi.org/10.1177/0743558404271133>
48. Schulman, G. L. (1999). Siblings revisited: old conflicts and new opportunities in later life. *Journal of Marital and Family Therapy*, 25(4), 517–524. <https://doi.org/10.1111/j.1752-0606.1999.tb00266.x>
49. Seeman, T. E., Lusignolo, T. M., Albert, M. & Berkman, L. (2001). Social relationships, social support, and patterns of cognitive aging in healthy, high-functioning older adults: MacArthur studies of successful aging. *Health Psychology*, 20(4), 243-55. <https://doi.org/10.1037/0278-6133.20.4.243>.
50. Sherman, A. M., Lansford, J. E., & Volling, B. L. (2006). Sibling relationships and best friendships in young adulthood: Warmth, conflict, and wellbeing. *Personal Relationships*, 13(2), 151–165. <https://doi.org/10.1111/j.1475-6811.2006.00110.x>
51. Slomkowski, C., Rende, R., Novak, S., Lloyd-Richardson, E., & Niaura, R. (2005). Sibling effects on smoking in adolescence: Evidence for social influence from a genetically informative design. *Addiction*, 100, 430–438. <https://doi.org/10.1111/j.1360-0443.2004.00965.x>
52. Smith, P. K., & Hart, C. H. (Eds.). (2002). *Blackwell handbooks of developmental psychology*. Blackwell handbook of childhood social development. Malden, MA: Blackwell Publishing.
53. Stocker, C., Dunn, J., & Plomin, R. (1989). Sibling relationships: links with child temperament, maternal behavior, and family structure. *Child Development*, 60(3), 715. <https://doi.org/10.2307/1130737>
54. Tucker, C.J., Barber, B.L. & Eccles, J.S. (1997). Advice About Life Plans and Personal Problems in Late Adolescent Sibling Relationships. *Journal of Youth and Adolescence*, 26,63–76. <https://doi.org/10.1023/A:1024540228946>
55. Volkom, M. V. (2006). Sibling relationships in middle and older adulthood. *Marriage & Family Review*, 40(2-3), 151–170. [https://doi.org/10.1300/j002v40n02\\_08](https://doi.org/10.1300/j002v40n02_08)
56. Volling, B. L. (2003). Sibling relationships. In M. H. Bornstein, L. Davidson, C. L. M. Keyes, & K. A. Moore (Eds.), *Crosscurrents in contemporary psychology*. Well-being: Positive development across the life course, 205–220. Lawrence Erlbaum Associates Publishers.
57. Voorpostel, M., & Blieszner, R. (2008). Intergenerational solidarity and support between adult siblings. *Journal of Marriage and Family*, 70, 157–167. <https://doi.org/10.1111/j.1741-3737.2007.00468.x>
58. Wang, H.W., Karp, A., Winblad, B. & Fratiglioni, L. (2002). Late-life engagement in social and leisure activities is associated with a decreased risk of dementia: A longitudinal study from the kungsholmen project. *American journal of epidemiology*, 155(12), 1081-1087. <https://doi.org/10.1093/aje/155.12.1081>
59. Warwick-Edinburgh mental well-being scale (Scottish Executive National Programme, 2006).
60. Welander, A. A. (1997). "The relationship between childhood sibling attachment and sibling social support during young and middle adulthood". Theses Digitization Project. 133. <https://scholarworks.lib.csusb.edu/etd-project/133>
61. Windsor, T. D., Curtis, R. G. & Luszcz, M.A. (2015). Sense of purpose as a psychological resource for aging well. *Developmental Psychology*, 51(7), 975-86. <https://doi.org/10.1037/dev0000023>
62. Yeh, H.C., & Lempers, J. D. (2004). Perceived sibling relationships and adolescent development. *Journal of Youth and Adolescence*, 33(2), 133–147. <https://doi.org/10.1023/b:joyo.0000013425.86424.0f>