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SIBLING RELATIONSHIPS EMERGING ADULthood

Sibling Relationship Quality and Its Link to Flourishing Among Emerging Adults

A DISSERTATION

Submitted to the Faculty of
Montclair State University in partial fulfillment
of the requirements
for the degree of Doctor of Philosophy

by

Shannon P. Lummer-Aikey

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May 2021

Dissertation Chair: Dr. Sara E. Goldstein

SIBLING RELATIONSHIPS EMERGING ADULTHOOD
MONTCLAIR STATE UNIVERSITY
THE GRADUATE SCHOOL
DISSERTATION APPROVAL

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Sibling Relationship Quality and Its Link to Flourishing Among Emerging Adults

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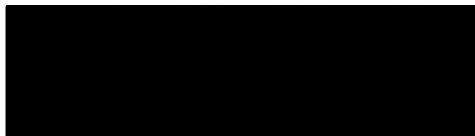
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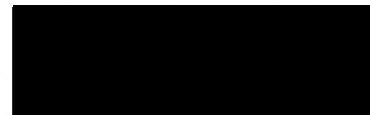
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Abstract

Sibling relationships are one of the longest lasting, close relationships individuals have over the life span. Common in emerging adulthood (ages 18-25 years), life transitions (such as college, marriage, and parenthood) can greatly impact the dynamics within the sibling relationship, and may cause a shift in the relationship trajectory. Individuals who have a sibling living with a chronic illness or developmental disability may experience greater difficulty in adjusting to new life transitions because they often worry about their sibling's needs and future accomplishments. The current study explored the relationship between flourishing and sibling relationship quality among emerging adults who have a sibling living with and without a chronic illness or disability. Results suggest sibling support and closeness are positively related to flourishing and negatively associated with the prevalence of sibling chronic illness or developmental disability. Further research is needed to examine and explore the myriad complexities of the sibling relationship within the context of mental and physical health.

Keywords: sibling relationship quality, emerging adulthood, flourishing, chronic illness, developmental disability

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Introduction

Sibling relationships are one of the longest lasting, close relationships individuals have over the life span (Cicirelli, 1995). Life transitions (such as college, marriage, and parenthood) can greatly impact the dynamics within the sibling relationship, and may cause a shift in the relationship trajectory (Milevsky & Heerwagen, 2013; Scharf et al., 2005; Whiteman et al., 2010). Individuals who have a sibling living with a chronic illness or developmental disability may experience greater difficulty in adjusting to new life transitions because they often worry about their sibling's needs and future accomplishments (D'Urso et al., 2017; Woodgate et al., 2016). Throughout childhood and adolescence, healthy siblings of individuals with a chronic illness or developmental disability (HS) experience an increase in responsibility and maturity, as they are often expected to help caregivers care for their sibling (Gorodzinsky et al., 2013; Plumridge et al., 2011; Woodgate et al., 2016). New life transitions during late adolescence and emerging adulthood may interfere greatly with this caregiver role. HS may struggle to find balance between the need for independence and autonomy from their family of origin with their perceived and acquired responsibilities for helping to take care of their sibling.

Emerging adulthood is a period in the life course characterized by gradual independence from the family of origin, prolonged education and career development opportunities, experimentation with romantic relationships, and continual exploration of identity development (Arnett, 2000; Arnett & Mitra, 2020). Initially, Arnett (2000) distinguished individuals aged 18-25 to be emerging adults. In recent years, the developmental period of emerging adulthood was extended to individuals aged 18 to 29 years old, as demographic trends are shifting and individuals are experiencing major life transitions in later years (Arnett et al., 2014). *Emerging adults* are presented with myriad opportunities throughout this time period to discover a career, experience love, and establish a worldview. The prominent characteristic of this period in the life

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course is diversity. Arnett (2000) describes heterogeneity within various aspects of life during emerging adulthood, including social roles, due to the openness and ability to explore. During emerging adulthood, HS may be limited in their ability and opportunity to explore or may experience internal conflict about doing so due to possible caregiving responsibilities within the sibling relationship. Thus, with bioecological theory as a framework (Bronfenbrenner & Morris, 2006), the purpose of the current study is to examine associations among sibling relationship quality and *flourishing* (i.e., complete mental health, described in detail below) among emerging adults with and without a sibling living with a chronic illness or developmental disability.

Theoretical Background

Bioecological Theory and the PPCT Model

From the perspective of bioecological theory (Bronfenbrenner & Morris, 2006), biological and ecological factors work together to guide development over time. From this view, human development is defined as a phenomenon of stability and change in biopsychological characteristics of individuals. Development can occur in both individuals and groups across the life course, generations, and history (Bronfenbrenner & Morris, 2006). Important concepts within the Process-Person-Context-Time (PPCT) model within bioecological theory include *proximal processes, person characteristics, the environment, and historical time*.

An overall feature of bioecological theory are Proposition I and II, which explain the conceptualization of the PPCT model. Proposition I states that human development occurs through proximal processes (defined below) that become more complex within the reciprocal nature of an interaction between an individual and his/her contexts and/or environments (Bronfenbrenner & Morris, 2006). Specifically, these interactions must take place regularly to be effective, such as learning a new sport or a new skill. Proposition II conceptualizes the process-person-context-time aspect, and states that characteristics of proximal processes (process) that

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affect development are systematically diverse in conjunction with personal (person), environmental (context), and historical (time) features, and interact together to guide development over the life course (Bronfenbrenner & Morris, 2006).

Proximal processes are specific patterns of interaction between an individual and his/her environment that occur over time, and are considered to be the “primary engines of development” (p. 798). Bronfenbrenner and Morris (2006) explain six, interconnected, defining features of proximal processes. First, an individual must participate in an activity for development to happen. Secondly, for development to be effective the activity must occur regularly over a long period of time where, thirdly, the activity becomes progressively more complex (Bronfenbrenner & Morris, 2006). The fourth feature includes bidirectional influence and reciprocity. The individual is not only influenced by someone else or the environment; another person or the environment is influenced by the individual. Fifth, interactions exist throughout the proximal process with not only other individuals but also with symbols and objects within the environmental context. Such symbols and objects need to “invite attention, exploration, manipulation, elaboration, and imagination” (Bronfenbrenner & Morris, 2006, p. 798). For example, a symbol can be an activity carried out solely by the individual, such as reading, playing, or working on a hobby.

The final defining feature of proximal processes states that proximal processes are influenced by moderating factors, including personal characteristics of the individual (i.e. age, developmental level) and the people with whom the individual interacts with regularly over long periods of time (Bronfenbrenner & Morris, 2006). When children are young, these people include caregivers such as parents, grandparents, or teachers. When children reach school-age through to adolescence, the people considered to be moderating factors are siblings and peers

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(Bronfenbrenner & Morris, 2006). As such, sibling relationships can be described as a proximal process: a person is interacting with her/his sibling throughout the lifespan, becoming more complex as they develop and grow. Bidirectional influence occurs between siblings and their home and the activities they share (i.e. sports, school).

Bronfenbrenner and Morris (2006) explain three categories of *person* characteristics that attribute to the individual's capacity to navigate the proximal process and guide the developmental course: 1) forces, 2) resources, and 3) demands. Forces refer to attributes of the individual (e.g., curiosity), whereas resources include abilities, experience, knowledge and skills utilized to effectively function and develop (e.g., proactive coping strategies). The characteristic of demands pertains to how the individual interacts with their environment (e.g., the use of proactive coping strategies during hospitalization; Bronfenbrenner & Morris, 2006).

The *context* component describes the environment in which the proximal process takes place. Individuals interact with various environments that may influence positive development. This Bronfenbrenner and Morris (2006) describe as nested systems, from microsystems to macrosystems. Briefly, every interaction, be it direct or indirect, that an individual has with the people, places, or cultures surrounding him/her influences human development. The component of *time* encompasses the time period in which the proximal process takes place and the changes that can occur at the micro-level through to the macro-level of time. Microtime focuses on the continuity and change within the process itself, in this case, the sibling relationship (Bronfenbrenner & Morris, 2006). Mesotime refers to the sibling relationship continuity and discontinuity over days or weeks. Within macrotime, changes within society and across generations are viewed (Bronfenbrenner & Morris, 2006). Among all the levels of time, various events are seen to influence the proximal process. Taken together, the four features of the

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Process-Person-Context-Time model (proximal processes, person characteristics, environment, and time) interact to promote positive development.

Bioecological Theory and Sibling Relationships

Bioecological theory has been utilized as a framework to study sibling relationships, typically as an overall view of the complex interactions between individuals and their environment, including family and peer interactions (Finan et al., 2018). Specifically from the perspective of the bioecological lens, the sibling relationship factors of warmth and hostility have been explored in relation to depressive symptom trajectories (Finan et al., 2018), and sibling support has been studied in relation to religiosity (Milevsky, 2005). Within the emerging adulthood sibling relationship literature, the relationship qualities of warmth, conflict, and support have been examined within the context of major life transitions (Lindell & Campione-Barr, 2017), including parental divorce (Milevsky, 2019), moving away from home (Brockhage & Phillips, 2016), marriage (Wheeler et al., 2016) and parenthood (Jensen et al., 2018).

Despite these examples of sibling research studied from a bioecological framework, very few studies that focus on sibling relationships among individuals with a chronic illness or developmental disability have used this approach. The relevant articles that do apply bioecological theory have examined the relationship of depressive symptoms on family functioning of children with cancer (Gutierrez-Colina et al., 2017) and explored the interconnection of individual attitude toward illness, family satisfaction, sibling warmth and conflict, and peer support in relation to sibling adjustment to chronic illness (Bellin et al., 2009; Bellin & Rice, 2009). Existing research lacks focus on positive developmental outcomes, namely flourishing, among siblings, especially HS. Given these critical research gaps, the current study aims to use a bioecological systems approach with specific utilization of the PPCT model,

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focusing on the implications of the sibling relationships of emerging adults with and without a sibling with a chronic health condition or developmental disability. Specifically, as described in greater detail below, the current study will examine the interconnection of sibling relationship quality, personal characteristics, and complete mental health/flourishing. The study will aim to explore these links in general, and then in comparison among two groups of emerging adults: 1) healthy emerging adults who have a sibling with a chronic illness or developmental disability (HS) and 2) healthy emerging adults who have a typically developing sibling (TD).

Bronfenbrenner's nested systems model within bioecological theory has been frequently utilized in sibling relationship research to understand the interconnection of individual, family, peer, and environmental factors that influence qualities of the sibling relationship (Whiteman et al., 2011). This said, research that particularly focuses on the PPCT model within ecological systems theory is scant. Utilizing the PPCT model in application to the current study, the proximal process being examined is relationship quality between siblings, the personal characteristic is characterized by sibling status (HS or TD), the context is the environment(s) in which siblings interact, and the aspect of time relates to the developmental period of emerging adulthood.

According to Proposition I of Bronfenbrenner's PPCT model, as noted previously, proximal processes are increasingly complex interactions between individuals and the environment that drive development regularly and over an extended period of time (Bronfenbrenner & Morris, 2006). In regard to flourishing, sibling relationship quality can be viewed as the proximal process in which individuals interact with each other (as well as with parents and peers and potentially external support personnel) in order to achieve complete mental health or flourishing over time.

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Proposition II focuses on how proximal processes vary depending on personal characteristics and the environment (context) within the aspect of time (Bronfenbrenner & Morris, 2006). If the prevalence of sibling chronic illness or developmental disability is classified as the person characteristic, then the proximal process of sibling relationship quality would be seen to influence siblings' mental health/flourishing. The context or environment in which this process takes place is college, home, or the hospital for HS. At college, siblings interact with professors, friends, and peers who are concerned for their needs as well as their brother or sister with a chronic illness or developmental disability. Within the hospital, siblings interact with family, health care professionals, and other families facing similar stressful situations. At home, HS' roles and responsibilities change, which may impact the way they cope with stress and influence their mental health.

In order to classify as a proximal process, the event needs to occur over time. In the context of emerging adulthood, sibling relationship quality, and mental health evolve. Even more so in the context of chronic illness or developmental disability, the above variables fluctuate from the time of diagnosis and throughout the life course. It is important to understand sibling relationship quality within emerging adulthood to explore the relation between sibling support and closeness and flourishing to promote positive development, especially within the context of chronic illness or developmental disability. It is also important to note that the current study takes place during the Covid-19 pandemic, which may further impact the amount of time that siblings spend together and/or the availability of external support personal to assist the sibling.

Literature Review

Sibling Relationships in Emerging Adulthood

Sibling relationships in emerging adulthood are generally considered to be positive (Milevsky, 2005; Tibbetts & Scharfe, 2015). Positive sibling relationship qualities include

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closeness, support, intimacy, warmth, and open communication. From a bioecological theory perspective, parents and caregivers typically provide the positive relationship qualities during childhood and adolescence. However, when individuals reach emerging adulthood, these positive relationship qualities are sought from peers and siblings (Bronfenbrenner & Morris, 2006).

Therefore, emerging adult siblings tend to report more satisfaction within their sibling relationship, as compared to adolescent siblings (Floyd et al., 2016; Scharf et al., 2005; Whiteman et al., 2010). Gender may play a role in these perceptions; research suggests that women report greater satisfaction within their sibling relationships regarding support (Van Volkom et al., 2011), intimacy (Walecka-Matyja, 2017), closeness (Schrodt & Phillips, 2016) and a more overall positive relationship quality (Brumbaugh, 2017; Riggio, 2006), as compared to their male peers.

Closeness

Closeness among sibling relationships is characterized by intimacy (Jensen et al., 2018). Most siblings experience high levels of intimacy and closeness throughout the developmental period of emerging adulthood (Jensen et al., 2013; Milevsky, 2005). Existing literature regarding sibling closeness among emerging adults focuses on the transition of moving away from the family, whether attending college or pursuing other endeavors in another state or country. Collectively, research suggests individuals feel no significant decrease in closeness within their sibling relationships when they move away from home (Jensen et al., 2018). In fact, sibling closeness remains stable and is often enhanced by a realization of appreciation towards siblings and positive changes within the relationship (Halliwell, 2016; Hamwey et al., 2016; Scharf et al., 2005). Despite these findings, some results are inconsistent. When particular focus is on frequency of daily contact, siblings who live together during emerging adulthood report

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more closeness than those who live apart due to the nature of living in the same household (Jensen et al., 2018; Van Volkom et al., 2011).

Family dynamics can influence perceived closeness within emerging adulthood sibling relationships. For example, parental differential treatment (PDT), communication, and shared family identity have all been shown to play a role in sibling closeness during this developmental period. Siblings who perceive more PDT experience less closeness and satisfaction within their relationship. Siblings perceive greater closeness within their relationships when they show respect and appreciation for one another and motivate each other, and less closeness when more sibling antagonism is present (Phillips & Schrodt, 2015a). Such acceptance within the sibling relationship moderates the negative effect of PDT on sibling closeness and satisfaction (Phillips & Schrodt, 2015b). Similarly, the more siblings feel they share the same family identity, the closer they feel within their relationship. Phillips and Schrodt (2015a) conclude that siblings who are more antagonistic towards their sibling and perceive PDT are more likely to have poor communication and a poor sense of shared family identity. When family members are encouraged to share their thoughts and opinions openly, siblings describe closer and more satisfactory relationships (Schrodt & Phillips, 2016).

Support

In their review of longitudinal changes among sibling relationships during life transitions, Lindell and Campione-Barr (2017) classify support as a positive feature of sibling relationships. Previous studies suggest emerging adults expressed a sense of security shared within the sibling relationship and described a system of support and comfort through which siblings share advice, emotional support, and instrumental support (Hamwey et al., 2019). Individuals described the most important aspects of support as giving immediate help and making sure a sibling is cared

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for if he/she is ill. Emerging adults also expressed loyalty in emotional support and esteem support among their sibling relationships, some even influencing career paths and becoming role models for one another (Schultheiss et al., 2002).

Similar to role modeling, care-taking due to family factors can influence the sibling relationship. Bush and Ehrenberg (2003) interviewed emerging adults regarding the impact of parental divorce on the sibling relationship and stated that older siblings felt care-taking responsibilities to their younger siblings due to parental divorce and created a “permanent connection” within the relationship. Siblings believed that their brothers/sisters are more likely to understand family-related issues than close friends (Hamwey et al., 2019). This highlights the importance and influence of sibling relationships among emerging adulthood during life transitions into work and careers. Individuals who have a sibling who is living with a chronic illness or developmental disability may feel a stronger need to support their sibling, as compared to those who have healthy/typically developing siblings. Further, their career choices and transitions may be impacted by the care-taker role. Not every young person would have this reaction though. On the contrary, other HS living with their sibling who has a chronic illness or developmental disability may experience a desire to flee the situation and reduce interactions and thereby stress.

Overall, most emerging adult siblings reported high levels of support within their relationships, although siblings with larger sibships (3+ siblings) tend to display lower levels of support, closeness, and communication as compared to siblings within smaller sibships (Milevsky, 2005; Milevsky et al., 2005). Women and sisters are also more likely to rely on a sibling when they are going through hardship compared to men and brothers (VanVolkom et al., 2011). Similarly, sisters display higher emotional and instrumental (assistance and feedback)

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support than brothers (Walecka-Matyja, 2017; Weaver et al., 2003). Relationship satisfaction among siblings is correlated with emotional support (expression of caring) and network support (shared sense of belonging; Myers & Bryant, 2008). Those with highly supportive sibling relationships experience lower levels of loneliness and depression, and higher levels of self-esteem and life satisfaction, as compared to emerging adults with less supportive sibling relationships (Milevsky, 2005). Similar to the association between sibling closeness and PDT, emotional support between siblings is negatively affected by perceived PDT (Ponappa et al., 2016). Interestingly, high levels of sibling support compensated for low support from parents and friends, and moderated the relationship between parental and peer support and psychological factors of self-esteem, depression, and life satisfaction (Milevsky, 2005).

Relation between sibling closeness and support

Although distinct constructs, closeness and support are both important factors in understanding the overall quality of sibling relationships (Furman & Buhrmester, 1985). Sibling closeness is positively associated with support and identity formation, including admiration and encouragement to be like one another (Weaver et al., 2003). Closeness and support coincide to help from a stronger bond between siblings. For example, siblings are more willing to seek social support from their siblings when they have a closer bond (Carr & Wilder, 2016). Along the same lines, attachment is often related to closeness and support among siblings in emerging adulthood. For example, Brumbaugh (2017) reported more closeness and satisfaction amongst the sibling relationship when siblings described their attachment as less anxious/avoidant.

Sibling Relationships in Emerging Adulthood When a Sibling has a Chronic Illness or Developmental Disability

Warmth/closeness and conflict

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Siblings experience a positive influence on their psychosocial functioning from having a sibling with a physical disability (Dew et al., 2018). Throughout childhood, adolescence, and into emerging adulthood, individuals with a sibling living with a disability display more empathy, compassion, responsibility, and understanding of family dynamics. They also have an increased understanding of injustices within their community for individuals who have a disability (Hodapp et al., 2010; Jacobs & MacMahon, 2016). Brothers and sisters of an individual living with a disability believe they understand their sibling, and characterize their relationship as trusting, fair, respectful, and affectionate (Hodapp et al., 2010). These relationship characteristics may emerge with time. Research shows that, among youth who have a sibling with an intellectual disability, emerging adults express more positive emotional bonds and less conflict with their sibling, as compared to their adolescent counterparts (Floyd et al., 2016).

Conversely, research involving reports from mothers of children with a chronic illness or disability reported significantly lower warmth and closeness within the sibling relationship compared to mothers of children without a disability (Allison & Campbell, 2015). Self-reports from adult siblings also reported less warmth when one of the siblings has a disability (Doody et al., 2010). This is possibly linked to feelings of struggle with differences between communication styles, as individuals felt a sense of separation due to communication (Jacobs & MacMahon, 2016). Gender may play a role in these associations, such that younger brothers reported lower levels of emotional closeness and warmth than any other sibling (Floyd et al., 2016), and women expressed more closeness than men with their brother or sister living with a disability (Hodapp et al., 2010). Interestingly, no significant differences regarding conflict or rivalry between siblings with a child with a disability are evident in the literature (Allison & Campbell, 2015; Doody et al., 2010). The only factor contributing to an increase in conflict was

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when the sibling was younger than the child with a disability (Allison & Campbell, 2015; Laghi et al., 2018). Overall, siblings are typically stable figures in an individual's life when he/she is living with a chronic illness or disability.

Support

Support between siblings is most often mutual: I support my brother and my brother supports me. For emerging adult HS, support may seem different within their sibling relationship as they may provide most of the support to the ill sibling. Specifically in emerging adulthood, individuals who have a sibling with a chronic illness or developmental disability are not only dealing with their own personal life transitions, but may also be responsible for helping their sibling with his/her life transitions. Many individuals surveyed regarding a sibling with an intellectual disability stated they had responsibilities in caring for their sibling (Doody et al., 2010; Jacobs & MacMahon, 2016; Laghi et al., 2018). Caregiving responsibilities are positively associated with sibling relationship quality, in that siblings who spend more time caring for their brother or sister with a disability describe more affection, mutual admiration, companionship, and emotional support within their sibling relationships than those who have little caregiving responsibilities (Floyd et al., 2016), although stress and frustration are also experienced within the caretaker role (Jacobs & MacMahon, 2016). Emerging adults expressed that too much personal (brushing hair, bathing) or behavioral care for their sibling with a disability disrupted their sibling role and seemed more parent-like than sibling-like (Meltzer, 2017). Future plans of HS may be modified to also include impending responsibilities for taking care of the sibling with a disability; many emerging adults believe that they are inadequately prepared for this role (Rawson, 2009).

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Despite the stress and apprehension individuals feel regarding caretaking responsibilities, emerging adult siblings of a brother or sister with a chronic illness or developmental disability have strong bonds within their relationship. Freeborn and Knafi (2013) explored the shared experiences of women with cerebral palsy (CP) through life history narratives. Family members were most important to them as advocates for normalcy and inclusion for individuals with CP. Sibling relationships were most valued by women with CP, as their sibling would be regarded as their best friend when they felt socially excluded. Most importantly, women with CP felt valued by and looked to their siblings as mentors (Freeborn & Knafi, 2013). Taken together, a positive and close relationship between siblings is a valuable resource for alleviating stress and providing normalcy and advocacy for individuals living with a chronic illness or developmental disability.

Flourishing

The World Health Organization (1948) defines *health* as complete physical, mental, and social well-being, emphasizing that health is not simply the absence of disease. The term *flourishing* is used to define the mental and social aspects of health. Keyes (2002) describes flourishing as “complete mental health” (p.210) in which an individual positively functions among his/her emotional, psychological, and social well-being. Positive emotional functioning is characterized by an individual’s ability to cultivate and express positive emotions (contentment, joy, pride) in stressful situations (Tugade & Frederickson, 2004). Positive psychological functioning occurs when an individual possesses self-acceptance, personal growth, life-purpose, environmental mastery, and autonomy. Lastly, individuals experience positive social functioning when they view society as understandable, meaningful, and acceptable, and feel a sense of belonging in their community coupled with the potential to grow and contribute to society (Keyes, 2002). Thus, when examined empirically, flourishing is typically operationalized as

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occurring when an individual experiences positive psychological, emotional, and social functioning every day or almost every day (Keyes, 2006, 2007; Kwong & Hayes, 2017).

In a nationally representative survey of undergraduate and graduate students aged 18-30 from 13 colleges throughout the United States, approximately half of participants were classified as flourishing (Keyes et al., 2012). Flourishing individuals report high levels of overall well-being compared to those moderately mentally healthy and languishing, whereas languishing individuals report the lowest levels of overall well-being. Some studies found that young adults report lower positive affect, and greater negative affect, compared to their older counterparts (Diehl et al., 2011; Low, 2011).

Within the context of flourishing, protective factors are seen as mechanisms that ameliorate an individual's reaction to stressful situations or "chronic adversity" in order to successfully adapt to the situation (Ryff & Singer, 2003). Such protective factors include support and coping. Faulk and colleagues (2013) examined associations among flourishing and coping strategies among teachers and military spouses. They found that teachers and military spouses who utilized more adaptive coping strategies (planning and positive reframing) than maladaptive coping strategies (self-blame, venting, or behavioral disengagement) were more likely to be flourishing and less likely to be depressed. Social support seemed to act as a protective factor for adult cancer survivors in Australia: those who perceived higher levels of social support and positive social interactions had lower odds of experiencing anxiety (Boyes et al., 2011).

Flourishing and the Sibling Relationship

Existing literature explores the relation between qualities of the sibling relationship and flourishing in terms of mental health. Most often, mental health is measured by the amount of anxiety or depressive symptoms an individual displays, with fewer symptoms representing better

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mental health (Boyes et al., 2011; Guan & Fuligni, 2015; Stocker et al., 2020). Research conducted in Sweden among siblings of individuals with Cystic Fibrosis (CF) aged 18-26 years old reported that HS believed they were in very good or excellent health overall, with men rating themselves slightly healthier than women (Wennstrom et al., 2011). Previous research regarding depressive symptoms among siblings of children and adolescents with a chronic illness is contradictory. Some studies suggest siblings of individuals with a chronic illness experience more depressive symptoms than siblings of healthy individuals (Alderfer & Hodges, 2010; Gutierrez-Colina et al., 2017), whereas other studies suggest depressive symptoms are in the normal range for both groups of siblings (Hollidge, 2000; Velleman et al., 2016; Wood et al., 2008; Hodapp et al., 2010). A study completed in Australia among university students aged 17 to 61 examined complete mental health among individuals with siblings living with a chronic illness or developmental disability and those with healthy siblings. Their results suggest no differences between the two groups, as both groups had nearly 60% of participants struggling and experiencing mental illness symptoms (Hallion et al., 2016). Research conducted in Japan yielded similar results, as young adults with a sibling cancer survivor did not differ on mental health status from young adults with healthy siblings (Kamibeppu et al., 2010).

The Current Study

Within the existing literature that examines and explores sibling relationships, a gap exists regarding sibling relationships past adolescence, especially with regard to siblings where one has a chronic illness or developmental disability (Dew et al., 2008). Many of the studies were conducted with parents as reporters, rather than through HS themselves. It is important to receive direct information from the healthy siblings themselves and not through caregivers as informants, as HS are arguably the best reporters of their own overall health (Dew et al., 2018; Guite et al., 2004).

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Among the studies that have been conducted, many questions remain unanswered regarding sibling closeness and support across developmental trajectories (Lindell & Campione-Barr, 2017). Importantly, no study has examined sibling relationship quality and its link to complete mental health (flourishing) among emerging adults who have a sibling living with a chronic illness or developmental disability. Much of the research regarding sibling adjustment to, or impact of, chronic illness has been conducted with younger children and adolescents. Studies typically have not focused on emerging adults as a unique developmental group. As noted previously, this developmental period is an important launching point for educational, vocational, romantic, and personal endeavors (Arnett, 2000, 2020). As such, individuals in this period have specific, unique developmental needs that are widely diverse. In order to promote positive development among HS, it is important to understand the sibling relationship during this dynamic developmental period. Of specific importance is how chronic illness or developmental disability may influence sibling relationships and their relation to mental health among emerging adulthood. The diversity of opportunities available to individuals in emerging adulthood is unique as compared to any other developmental period in the life span. Arnett (2020) concluded individuals within the age-group of emerging adulthood (18-25 years of age) reported significantly higher exploration of identity, instability, self-focus, ambivalence, and optimism regarding future possibilities, as compared to older adults. It is important to understand how different developmental paths taken during this time period can have lifelong implications in regard to sibling relationships and mental health.

An additional limitation of previous research is that most of the literature that does examine emerging adults and their siblings focuses on (a) healthy sibling dyads or groups, or (b) siblings with individuals with developmental or intellectual disabilities. To date, scant literature

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has focused on siblings with chronic illnesses (Lummer-Aikey & Goldstein, 2020). Individuals with a chronic illness have unique needs apart from those with a developmental or intellectual disability. For example, individuals impacted by chronic illness may experience frequent hospitalizations and physical limitations that cause a disruption in daily routines and activities for not only themselves, but their families, including siblings. It is important to note that chronic illness diagnosis and developmental disabilities co-occur, for example with cerebral palsy, down syndrome, and epilepsy. Thus, the present study included both individuals with a sibling with a chronic illness and/or developmental disability.

With consideration of these limitations of the current literature, this dissertation intends to answer the following questions: RQ1: What role does the sibling relationship play in promoting complete mental health in emerging adulthood? RQ2: Is the quality of the sibling relationship among emerging adults associated with an individual's mental health? Finally, RQ3: Are there differences among sibling relationship quality and mental health between emerging adult siblings of individuals living with a chronic illness or developmental disability? These questions were explored in a relatively large, diverse population of emerging adults with and without a sibling living with a chronic illness or developmental disability who are coming of age among the unprecedented time of social distancing associated with the Covid-19 Pandemic. Given the unique situation of Covid-19, a few additional questions were explored and examined on a descriptive basis: time spent with sibling, change in responsibilities, and change in living situation since the pandemic. Due to the nature of mixed results among existing literature, the following exploratory analyses will be considered: 1) differences in flourishing among healthy siblings of individuals with a chronic illness or developmental disability (HS) and those who have typically developing siblings without a chronic illness or developmental disability (TD), 2)

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differences in sibling support for HS and TD, 3) differences in sibling closeness for HS and TD, 4) the relation between flourishing and sibling support, and 5) the relation between sibling closeness and flourishing. Finally, it is hypothesized that sibling relationship quality will act as a moderator for flourishing within sibling constellations with an individual living with a chronic illness or developmental disability, such that higher levels of support and closeness for HS will be linked to flourishing.

Method

Participants

Participants were 186 undergraduate and graduate college students from a mid-sized, public university in the northeastern region of the United States aged 18-29 years old ($M = 21.7$, $SD = 2.6$); 71% were undergraduate students and 29% were graduate students. Regarding gender, 86.6% identified as female, 9.7% identified as male, 2.2% identified as gender fluid/non-binary, and .5% identified as transgender. In terms of race/ethnicity, 57.5% identified as European American/White, 36% identified as Hispanic/Latino(a), 9.1% identified as Black/African American, 6.5% identified as Asian/ Asian American, and 5.4% indicated another race or did not specify. In terms of having a sibling with a chronic illness or disability, 12.9% of the sample had a sibling with a chronic illness or developmental disability, which is slightly lower than the 16.4% of the national average based on data from the 2016 National Survey of Children's Health (Child and Adolescent Health Measurement Initiative, 2016). Additional demographics regarding the participants and sibling characteristics are presented in Table 1.

Procedure

Department chairs and on-campus program directors at the university were contacted via email seeking assistance in distributing an online survey to undergraduate and graduate students for this study. The email contained a brief introduction of the researcher and the study, as well as

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an email address to correspond to with any questions. Most importantly, the email included a link to the online survey being conducted. The survey began with a brief screening questionnaire, which included further information on the current study and assessed for inclusion criteria. Informed consent was provided as the first page of the screener questionnaire. Following the screener, participants were asked to complete an online, self-report questionnaire via SurveyMonkey about their mental health and their current relationship with their siblings. Inclusion criteria consisted of: a) 18-29 years of age and b) has at least one sibling. The 186 participants included in the current analyses represent those who provided complete data and who were not excluded due to age or sibling status.

Measures

Sibling Relationship Quality

The Network of Relationships Inventory (NRI, Furman & Buhrmester, 1985) is an 84-item scale that assesses the quality of relationships an individual has within close relationships, including primary caregivers, siblings, a romantic partner, and a best friend. Three separate versions of the NRI measure support, closeness, positive interactions, and negative interactions among said close relationships. Participants reported on information about their relationships with up to 4 of their siblings closest in age to them. Data regarding the sibling closest in age or sibling with a chronic illness or developmental disability is presented in the current study. Information about the measurement of the two dimensions of sibling relationship quality (support and closeness) used in the current study is indicated below. The NRI reports high internal consistency and validity (Furman & Buhrmester, 2009).

Sibling Support. The 24-item Behavioral Systems Version of the Network of Relationships Inventory (NRI-BSV, Furman & Buhrmester, 2009) was used to measure sibling

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support. Scale scores for the support scale were calculated by averaging the following 5 subscales, which each include 3 items (totaling 15 items for use in the present study): “seeks safe haven”, “seeks secure base”, “provides safe haven”, “provides secure base”, and “companionship”. All items utilized a 5-point Likert scale from “never or hardly at all” to “always or extremely much”; for example, “How much does this person show support for your activities?”. High scores for the sibling support scale represented high levels of support. Cronbach’s alpha (a measurement of scale reliability) for the support scale was .91 for the current study. High internal consistency and validity of the NRI-BSV is reported in Furman and Buhrmester (2009).

Sibling Closeness. The 30-item Relationship Qualities Version of the NRI (NRI-RQV, Buhrmester & Furman, 2008) was used to measure sibling closeness. Scale scores for the closeness scale were calculated by averaging the following 5 subscales, which each include 3 items (15 items total): “companionship”, “disclosure”, “emotional support”, “approval”, and “satisfaction”. All items utilized a 5-point Likert scale from “never or hardly at all” to “always or extremely much”; for example, “How often do you tell this person things that you don’t want others to know?”. High scores for the sibling closeness scale represented high levels of closeness. Cronbach’s alpha for the closeness scale in the current sample was .93.

Flourishing

The Mental Health Continuum Short Form (Keyes, 1998) is a 14-item scale that assesses complete well-being, operationalized here as *flourishing*. 3 items on this instrument measure emotional well-being, 6 items measure psychological well-being, and 5 items measure social well-being. Respondents were asked to report the frequency with which they experience symptoms of positive mental health within the three realms of well-being on a 6-point Likert

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scale from “never” to “every day”. Scale scores were calculated among the 14 items. Example items include: “During the past month, how often did you feel happy?” (emotional well-being), “During the past month, how often did you feel confident to think or express your own ideas and opinions” (psychological well-being), and “During the past month, how often did you feel that you had something important to contribute to society?” (social well-being). High scale scores indicated high levels of flourishing. Cronbach’s alpha for the current sample was .92.

Covid-19 Related Changes

Participants were asked the following, open-ended questions (Q) regarding recent changes within their sibling relationship during the current Covid-19 pandemic: Q1: Have you spent more or less time with your sibling(s) since Covid-19? Q2: Have any of your responsibilities changed since Covid-19? Q3: Have your living arrangements changed since Covid-19? Responses were coded quantitatively as “more”, “less”, or “not changed” for Q1, and “yes” or “no” for Q2 and Q3.

Sibling Characteristics

Demographics of siblings were considered, including age-spacing (years between siblings), sibling constellation (male-male, male-female, female-male, female-female), and birth order (youngest, middle, oldest, same age (twin, triplet, quadruplet, etc.)).

Prevalence of Sibling’s Chronic Illness or Disability

Participants reported if their sibling(s) are living with a chronic illness (e.g. asthma, cancer, arthritis, cerebral palsy) or developmental disability (e.g. autism). Responses were coded “yes” or “no”. If a participant indicated that their sibling did have a chronic illness or developmental disability, they were also asked to indicate the name or type of chronic illness or developmental disability.

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Data Analysis

SPSS version 25 (IBM, 2017) was used to analyze the data. First, it was of interest to provide information about the means and standard deviations of all study variables. Descriptive statistics for all study variables are presented in Table 2. Second, it was of interest to assess bivariate correlations among all variables in the study, taking into consideration whether participants had a sibling with a chronic illness of developmental disability or did not have a sibling with a chronic illness of developmental disability. Thus, Table 3 presents the bivariate correlations among flourishing, sibling closeness, and sibling support where data from participants with a sibling with a chronic illness of developmental disability (HS) are noted above the diagonal, and information from participants with a sibling without a chronic illness of developmental disability (TD) are indicated below the diagonal.

The next analytic step was to determine group differences in flourishing, sibling support, and sibling closeness. To assess this issue, two groups of ANOVAs were computed. First, to assess group differences by sibling status (HS/TD), a series of 3 separate 2 (gender: male, female) x 2 (sibling status) ANOVAs were computed to assess between group differences in 1) flourishing, 2) sibling support, and 3) sibling closeness. Likewise, to assess group difference by sibling demographic characteristics, 3 separate 4 (birth order: youngest, middle, oldest, same age) x 4 (sibling gender constellation: sister-sister, brother-brother, sister-brother, brother-sister) ANOVAs were computed to assess between group differences in 1) flourishing, 2) sibling support, and 3) sibling closeness.

The final analysis involved a hierarchical linear regression, which was conducted to further explore the relation between prevalence of chronic illness/developmental disability and flourishing, assessing for potential moderation by sibling relationship quality. In step 1, age,

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gender, and sibling status were entered. Step 2 included sibling support and sibling closeness. Finally, in step 3, the interactions of sibling support and sibling status, as well as sibling closeness and sibling status, were entered. This final step allows for the testing of whether sibling relationship quality moderates the association between prevalence of chronic illness/developmental disability and flourishing (Holmbeck, 2002). Results from this analysis are depicted in Table 4.

Results

Preliminary Findings

The first step was to compute preliminary analyses to explore descriptive information about the sample, which is presented below in Table 2. As noted above, to this effect, a 2 (gender) X 2 (sibling status) ANOVA was conducted in relation to flourishing. No significant differences were detected by gender or sibling status. A second 4 (birth order) X 4 (sibling gender constellation) ANOVA was conducted in relation to flourishing. No significant differences were detected by birth order or sibling gender constellation among flourishing.

A second 2 (gender) X 2 (sibling status) ANOVA was conducted to assess differences in sibling support. Significant differences were detected by gender and sibling status in sibling support. A main effect emerged for gender, such that females ($M = 42.07$, $SD = 15.5$) reported greater sibling support as compared to males ($M = 37.51$, $SD = 16.34$; $F(1, 184) = 4.34$, $p < .05$). A main effect also emerged for sibling status, such that HS ($M = 33.85$, $SD = 16.98$) reported lower sibling support than TD ($M = 41.53$, $SD = 15.63$; $F(1, 184) = 5.13$, $p < .05$). The interaction between gender and sibling status was not significant. A second 4 (birth order) X 4 (sibling gender constellation) ANOVA was conducted to assess differences in sibling support. No significant differences were detected in birth order or sibling gender constellation among sibling support.

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Regarding sibling closeness, a 2 (gender) X 2 (sibling status) ANOVA was conducted to assess group differences. No significant differences were detected among gender in sibling closeness, although significant differences were detected by sibling status. HS displayed lower levels of sibling closeness ($M = 37.60$, $SD = 16.44$) as compared to TD ($M = 45.77$, $SD = 16.27$; $F(1, 185) = 4.58$, $p < .05$). The interaction between gender and sibling status was not significant. A final 4 (birth order) X 4 (sibling gender constellation) ANOVA was conducted to assess differences in sibling closeness. No significant differences were detected by birth order or sibling gender constellation among sibling closeness.

Next, bivariate correlations were computed among study variables; these are shown in below in Table 3. It was of interest to assess whether sibling health status would impact the associations among variables, so correlations were computed separately for participants based on this status (HS versus TD). Thus, Table 3 displays the correlations for HS above the diagonal and for TD below the diagonal. As shown, for the TD group, there was a significant positive correlation between flourishing and sibling relationship quality, such that emerging adults who reported higher flourishing also reported higher sibling support and closeness. For the HS group, similar correlations emerged but, likely due to sample size, this moderate correlation did not emerge as significant. Lastly, for both the TD and HS groups, a significant positive correlation was evident between the two sibling relationship quality variables, in that higher support coincided with higher closeness among emerging adult sibling relationships. For exploratory follow up of the bivariate correlations, a series of Fisher R to Z transformations were computed to test for potential group differences in associations among variables. No group differences were detected.

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Descriptive statistics are included in Table 2 regarding the three questions that assessed how the Covid-19 pandemic impacted participants' relationship with their sibling and daily life. In response to changes in time spent with their sibling during the Covid-19 pandemic, 65.5% spent more time, 23% spent less time, and 11.5% had no change in time spent with their sibling. 60.9% of participants reported a change in their responsibilities since the pandemic, whereas 39.1% reported no change. Lastly, living arrangements changed for 35.9% of participants and 64.1% of participants' living arrangements remained the same during the Covid-19 pandemic.

Primary Findings

A hierarchical linear regression was conducted to test for the potential moderation of sibling relationship quality among flourishing and sibling status. Age, gender, and sibling status were entered in Model 1. Model 2 included sibling support and sibling closeness. Finally, the interactions of sibling support and sibling status, as well as sibling closeness and sibling status, were entered in Model 3. Table 4 shows the results of this analysis predicting flourishing among emerging adults. Model 1 was statistically significant ($F(3, 179) = 5.1, p < .01$) and accounted for 3.7% of the variance ($R^2 = .037$). Older age was significantly associated with higher flourishing, whereas prevalence of sibling chronic illness/developmental disability was significantly associated with lower flourishing. Model 2 was also statistically significant ($F(5, 177) = 9.48, p < .001$) and accounted for 21.1% of the variance in flourishing ($R^2 = .211$). Sibling relationship quality predicted 13.3% additional variance in flourishing, which was statistically significant ($\Delta R^2 = .133, p < .001$). Sibling closeness was significantly associated with higher flourishing ($\beta = .6, p < .001$), whereas sibling support was not statistically significant. Model 3 was not statistically significant, meaning no interaction was found between sibling relationship

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quality and prevalence of sibling chronic illness/developmental disability in association with flourishing.

Discussion

The goal of the current study was to explore the association between flourishing and sibling relationship quality among emerging adults with and without a sibling living with a chronic illness or disability within the context of bioecological theory. Results will be discussed in corresponding order to the analyses conducted. Preliminary results regarding personal characteristics (gender, birth order, and sibling gender constellation) suggest no differences among flourishing. This was somewhat surprising, given that much of the previous literature reports higher flourishing among females than males (Avcioglu, et al., 2019). One reason for the current study's lack of results related to gender may have to do with a lack of statistical power; the current study's sample was a bit skewed in over-representation of females. Thus, this may have contributed to non-significance in gender among flourishing. Additional research should explore this with samples more evenly balanced by gender.

Of note is the finding that no significant differences were found among flourishing between HS and TD. This finding is consistent with international research among young adults in Australia (Hallion et al., 2016) and Japan (Kamibeppu et al., 2010). Often, well-being is operationalized in a negative manner, most commonly as depressive or anxiety symptoms (Guan & Fuligni, 2015; Stocker et al., 2020). Some of the literature reports differences between HS and TD in mental health, where HS experience fewer psychological adjustment issues than TD (Cianfaglione et al., 2015). The current study conceptualized mental health in a more holistic and positive manner. Perhaps, HS and TD experience similar levels of flourishing due to the multifaceted nature of the variable, as it encompasses emotional, psychological, and social constructs.

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The second set of results describes associations among personal and sibling characteristics and sibling support. The current findings are consistent with existing literature regarding gender, in that females reported higher sibling support than males (Jensen & Orsmond, 2019; Van Volkom et al., 2011; Walecka-Matyja, 2017; Weaver et al., 2003). In regards to sibling characteristics, neither birth order nor sibling gender constellation significantly predicted support among emerging adult siblings. Although some of the research suggests sister-sister dyads report greater support than other sibling gender constellations (Hollifield & Conger, 2015) and older sisters display more positive affect to younger brothers, the majority of previous research suggests similar findings to the current study (Branje et al., 2004; Cassinat et al., 2019; Hamwey et al., 2019). Sibling support in the current study focused more on the emotional aspects of sibling support, such as encouragement and comfort, and was bidirectional, in that participants reported on providing and seeking support from their sibling. Future research should further explore the nuances within the construct of support.

The differences between HS and TD among sibling support are of importance. Among emerging adults in the current study, TD reported higher sibling support than HS. In hindsight, these results are somewhat not surprising given the mixed results found in previous research. The definition of sibling support seems to be an important factor: whether support is defined as emotional or practical/instrumental. Siblings of individuals living with autism provided more practical support (i.e. errands, finances, technology) and less emotional support (i.e. socializing, giving advice) when their sibling displayed more traits characterized as autistic (Jensen & Orsmond, 2019). The more expectations to assist the family, the higher sibling support is reported (Guan & Fuligni, 2015). Thus, perhaps the way that sibling support was measured in the

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current study played a role in terms of TD in the current sample experiencing greater support than their HS peers.

These issues may be especially important to consider given the current context of the Covid-19 pandemic. A study by Redquest and colleagues (Redquest et al., 2021) found that sibling support was reported as a helpful resource during the Covid-19 pandemic. Among the current sample, the majority of emerging adults (88.5%) experienced changes in their sibling relationship, with 65.5% of participants spending more time with their siblings during the pandemic. With this increased proximity, additional support was likely offered to HS's sibling, but HS themselves may have experienced the support primarily as the giver of support, rather than the receiver of support. Further research is needed to explore the impact of the Covid-19 pandemic on perceptions of sibling support.

Many siblings of individuals living with a chronic illness or developmental disability adopt a caretaker role (Jacobs & MacMahon, 2016; Marquis et al., 2019; Meltzer, 2017). Perhaps this caretaker role may impact their perception of support. Qualitative interviews with adult siblings aged 25-62 years old revealed many siblings have caregiver responsibilities and view their role as the "parent's successor" in providing care to the sibling living with a disability (Avieli, et al., 2019). In lieu of the Covid-19 pandemic, the majority of participants in the current study experienced a change in their responsibilities during this unexpected time, most reporting more responsibilities in helping around the house with chores and providing care for siblings (e.g. babysitting younger siblings, helping with homework). Emerging adults in the current study may have been preparing for or anticipating this "parent's successor" role even more so due to the Covid-19 pandemic.

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The third set of results indicate the differences between personal and sibling characteristics among sibling closeness. No differences were found between gender, birth order, or sibling gender constellation and sibling closeness, which is consistent with some of the previous literature (Phillips & Schrod, 2015a; Schrod & Phillips, 2016) and inconsistent with others that suggest women express more closeness within their sibling relationships than men (Hodapp et al., 2010) and siblings of the same gender describe closer relationships than siblings of different genders (Milevsky, 2020). Similar to sibling support, the construct of sibling closeness can be measured differently among studies, which may be reflected in the discordance of results among the literature. A meta-analysis may be warranted in the future, to examine such nuances within sibling relationship quality constructs.

Significant to the goal of the current study, the results suggest TD report higher closeness than HS. Similar results were reported by mothers of children with a chronic illness or developmental disability (Allison & Campbell, 2015) and adult siblings of adults living with a disability (Doody et al., 2010). Our current finding may be explained by the nature of the developmental theory of emerging adulthood (Arnett, 2000). The transitions throughout emerging adulthood some siblings face may be altered by their closeness with their sibling with disabilities, as they may choose to live at home longer or live in close proximity to their sibling.

The characteristics of sibling closeness examined in this study included intimate disclosure, approval (praise, proud), satisfaction, and companionship (time spent, activities shared; Buhrmester & Furman, 2008). Shared leisure activities among emerging adult siblings were positively associated with sibling relationship quality, in that the more diverse activities siblings participated in, the higher their sibling relationship quality was reported (Layland et al., 2020). When a sibling has a chronic illness or developmental disability, they may be restricted

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by activities they can participate in. In a recent study during the pandemic, 95% of siblings of adults with disabilities reported feeling concerned about the health and well-being of their sibling during the pandemic, with the most common concern being the disruption of routine and activities (Redquest, et al., 2021). As mentioned above, the majority of siblings in the current sample spent more time together during the Covid-19 pandemic, although HS reported lower support and closeness within their sibling relationships. Further research is needed to explore how this may be related to HS' concerns for their sibling living with chronic illness or a developmental disability.

In regards to the final exploratory analyses, the results suggest emerging adults who display higher flourishing reported higher support and higher closeness within their sibling relationships. This finding is consistent with previous literature regarding well-being. (Avcioglu et al., 2019; Milevsky, 2005). In terms of mental health, similar findings in the literature report higher sibling support was related to lower levels of externalizing behavior and depressive symptoms over time, higher self-esteem (Branje et al., 2004; Guan & Fuligni, 2015; Sharer et al., 2016) and self-worth, and more competence among social relationships (Caya & Liem, 1998). Additionally, among siblings of adults with schizophrenia, social support was found to be positively correlated with well-being and buffered the effect of caregiver burden on well-being (Avcioglu et al., 2019), as well as the negative aspects of growing up in a high-conflict home (Caya & Liem, 1998). Current findings report siblings who display higher support indicate higher closeness within their sibling relationships, which is also consistent with the literature (Carr & Wilder, 2016; Hollifield & Conger, 2015; Voorpostel & Blieszner, 2008). Overall, emerging adults experience higher flourishing when they have a more positive relationship with their siblings. The literature reveals that a strong bond between siblings contributes to the well-

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being of an individual, especially within the context of adversity (Avioglu et al., 2019; Caya & Liem, 1998). It would be important for family practitioners and health care professionals to note the importance of the sibling relationship when providing services to individuals and their families, as these relationships evolve over time and across the lifespan, with particular importance paid during stressful periods or transitions in life.

Of particular importance is the primary finding of this study. It was hypothesized that sibling relationship quality will act as a moderator for flourishing within sibling constellations with an individual living with a chronic illness or developmental disability, such that higher levels of support and closeness for HS will be linked to flourishing. Current findings suggest this is not the case, as sibling relationship quality did not significantly moderate flourishing for emerging adults who have a sibling living with a chronic illness or developmental disability. Similar findings of moderation models are apparent in the literature among certain variables within the sibling relationship. For example, sibling attachment was not found to moderate the effects of parental attachment on well-being (Shepherd et al., 2021). Contrarily, a more positive sibling relationship buffered the effects of a more negative parent relationship on support for adult siblings in the Netherlands (Voorpostel & Blieszner, 2008).

In viewing the sibling relationship as a proximal process, the above finding may be explained by the myriad factors that may impact the sibling relationship. Proximal processes are increasingly complex interactions that drive development over time and are influenced by personal, environmental, and historical characteristics (Bronfenbrenner & Morris, 2006). The diverse nature of emerging adulthood may contribute to the complexity of the sibling relationship, as this developmental period presents individuals with diverse opportunities to

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explore careers, worldviews, and romantic relationships (Arnett, 2000), which may in turn impact sibling closeness and support.

Furthermore, the restrictions placed on society by the Covid-19 pandemic (i.e. social distancing, travel bans) may have impacted the opportunities that characterize emerging adulthood, which may in turn impact the mental health and flourishing of individuals included in the current sample. Even though approximately a third of emerging adults in the current study experienced a change in living arrangements during the pandemic, 61% of the total sample reported their responsibilities changed, with most expressing more daily responsibilities (e.g. chores, finances, parent and sibling support). This, and other unknown factors, may have contributed to a non-significant moderation model, as the pandemic may have contributed to additional stress and anxiety, which may have put a strain on the sibling relationship. Further research is needed to examine and explore the impact of the Covid-19 pandemic on flourishing in emerging adulthood.

The results of the current study, among others, reveal a correlation between sibling relationship quality and flourishing for most individuals, whether or not they have a sibling living with a chronic illness or developmental disability. It is imperative that mental health professionals and health care professionals not only focus on the individual seeking treatment, but also consider familial factors that may impact an individual's mental health.

Support groups for emerging adults who have a sibling with a chronic illness or disability are important opportunities for individuals to connect and provide support to one another. Group members are invited to share their concerns, challenges, and insights about their experiences, and encouraged to share information about services, resources and strategies to help advocate for individuals living with chronic illness or developmental disability (Sibling Support Project, n.d.).

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Although much of the existing research report inconsistencies among support group interventions, HS involved in a support group experienced overall improvements in mental health outcomes, psychological functioning, and well-being (Hartling et al., 2014; McKenzie Smith et al., 2018; Tudor & Lerner, 2015).

Limitations

The current study is not without limitations. This study is limited in its sample size, particularly participants who have a sibling living with a chronic illness or disability. Participants in this study were also college students, therefore, the results may not generalize to their non-college-attending counterparts. Limitations also include the cross-sectional nature of the data. Because sibling relationships change over time and through developmental stages, a longitudinal study would be ideal in providing further information regarding the link between sibling relationship quality and flourishing over the lifespan. As Bronfenbrenner and Morris' (2006) bioecological theory guides the current study, a further limitation is that sibling pairs were not included in the current sample, excluding the theory's feature of bidirectional influence. Although much of the research suggests siblings perceive similar levels of relationship quality (Fortuna et al., 2011), it would still be important for future research to explore these issues using multiple informants such as sibling dyads. Another limitation includes the measures, as they were created with typical development sibships in mind. Future measurement efforts should be made to develop assessments that are more valid for HS and their sibling relationships.

Lastly, findings from the current study must be interpreted with caution. This study was conducted during the unprecedented time of the Covid-19 pandemic, which may have impacted emerging adults' mental health due to the restrictions placed. In particular, individuals with a chronic illness or developmental disability may have been further impacted by the Covid-19

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pandemic restrictions to travel to routine appointments and the inability to attend school or day programs. Many support programs were postponed and support staff were cut due to the pandemic restrictions (Centers for Medicaid and Medicare Services, 2020), which may have placed extra burden on HS in terms of caregiving roles which may not have been reflected in the measure of support.

Future Research

As discussed above, there are many inconsistencies among the literature regarding the constructs of sibling relationships. These mixed results represent the complexity of the sibling relationship and the many factors that influence the relationship. This is consistent with bioecological theory in that a multitude of moderating factors (personal and contextual characteristics) interact with each other to guide developmental over the life span (Bronfenbrenner & Morris, 2006). Future research should explore the different nuances within the sibling relationship among various developmental stages, specifically the complexities of the caretaker role during emerging adulthood.

The majority of the sibling research focuses on children, with scant research that focuses on emerging adults. Emerging adulthood is a unique and important time in an individual's life that can shape their future. During this developmental period, individuals face myriad decisions to be made on their own and are establishing their own worldview. Emerging adults who have a sibling living with a chronic illness or developmental disability may need to alter their major life decisions (moving away from home, job) in lieu of their sibling relationship. The literature reveals siblings are pertinent people in individuals' lives and are one of the longest lasting relationships. Overall, individuals describe a healthy and loving relationship with their sibling living with a chronic illness or disability that flourishes over time (Avieli, et al., 2019). Future

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research is warranted to expand the literature pertaining to sibling relationships in emerging adulthood by simply focusing on emerging adults as participants. Finally, future research should also explore the link between sibling relationship quality and flourishing in a larger sample of participants who have a sibling living with a chronic illness or developmental disability.

Conclusion

This study was the first to my knowledge to explore sibling relationship quality and its link to flourishing within the context of the prevalence of a chronic illness or disability during the transitional developmental period of emerging adulthood. This study also contributes to the literature by examining this topic during the unprecedented time of the Covid-19 pandemic. Overall, more positive sibling relationship quality is correlated with higher flourishing for both HS and TD, with TD expressing higher closeness and support within their sibling relationships. Further research is needed to examine and explore the myriad complexities of the sibling relationship within the context of mental and physical health.

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SIBLING RELATIONSHIPS EMERGING ADULTHOOD

Appendix

Table 1

Descriptive Statistics of Participants (N=186)

	%	<i>M</i>	<i>SD</i>
Age		21.7	2.6
# of Siblings		2	1.1
Birth Order			
	Oldest	39.2	
	Middle	21.5	
	Youngest	32.3	
	Multiple Birth (Twin, Quadruplet)	3.8	
Sibling Constellation			
	Male-male	3.2	
	Male-female	5.4	
	Female-Male	36.6	
	Female-Female	40.9	
Age Difference (years)		3.7	2.9

SIBLING RELATIONSHIPS EMERGING ADULTHOOD

Table 2*Descriptive Statistics of Study Variables*

		%	<i>M</i>	<i>SD</i>
Sibling Support			40.54	15.97
Sibling Closeness			44.72	16.47
Flourishing			55.19	13.70
Time Spent w/Sibling Since Covid-19	More	65.5		
	Less	23.0		
	Not changed	11.5		
Responsibilities Change Since Covid-19	Yes	60.9		
	No	39.1		
Living Arrangements Change Since Covid-19	Yes	35.9		
	No	64.1		

SIBLING RELATIONSHIPS EMERGING ADULthood

Table 3*Bivariate Correlations Among Study Variables*

	1.	2.	3.
1. Flourishing		.29	.31
2. Sibling Support	.28**		.95**
3. Sibling Closeness	.38**	.91**	

* $p < .05$. ** $p < .01$

Below diagonal TD, above diagonal HS.

SIBLING RELATIONSHIPS EMERGING ADULTHOOD

Table 4*Results of the Hierarchical Linear Regression Model Predicting Flourishing*

	Model 1		Model 2		Model 3	
	<i>B</i>	<i>SE</i>	<i>B</i>	<i>SE</i>	<i>B</i>	<i>SE</i>
Constant	33.35**	8.6	24.75**	8.2	24.94**	8.28
Age	.94*	.38	.77*	.35	.77*	.36
Sex						
Male	--	--	--	--	--	--
Female	2.74	.02	1.59	2.7	1.41	2.8
Chronic Illness/Developmental Disability	-7.74**	2.93	-5.57*	2.76	-5.62	2.9
Sibling Support			-.23	.14	-.26	.15
Sibling Closeness			.50**	.14	.52**	.15
Support x Illness/Disability					.31	.50
Closeness x Illness/Disability					-.29	.51