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Improving Neurodiverse Relationships: Comparing Relational Quality and Maintenance Channels in Individuals with and Without ADHD

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IMPROVING NEURODIVERSE RELATIONSHIPS: COMPARING RELATIONAL QUALITY
AND MAINTENANCE CHANNELS IN INDIVIDUALS WITH AND WITHOUT ADHD

by

Jessica A. Kahlow

A Dissertation Submitted in
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May 2021

ABSTRACT

IMPROVING NEURODIVERSE RELATIONSHIPS: COMPARING RELATIONAL QUALITY AND MAINTENANCE CHANNELS IN INDIVIDUALS WITH AND WITHOUT ADHD

by

Jessica Kahlow

The University of Wisconsin-Milwaukee, 2021
Under the Supervision of Professor Erin Ruppel

Individuals with Attention-Deficit Hyperactivity Disorder (ADHD) process information differently than neurotypical individuals and, consequently, experience behavioral, cognitive, and mood-related problems that are associated with low relational quality and insecure attachment orientations. This dissertation draws on minority stress theory (MST) and channel expansion theory (CET) to understand whether adults with ADHD use specific maintenance strategies and communication technologies to improve their relationships. Specifically, this dissertation advances theories surrounding relational maintenance and relational development by comparing how individuals with and without ADHD use different channels to maintain their relationships and how this influences relational quality over time. Individuals with ($n = 59$) and without ($n = 90$) ADHD completed longitudinal surveys about their perceptions of channels, richness, and maintenance in face-to-face and texting contexts. Similar to prior research, the findings demonstrate that individuals with ADHD often experience lower relational quality, but the findings indicate that when individuals with ADHD have low relational quality, they use F2F communication less, perceive it as less rich, and use fewer maintenance strategies. This implies that if individuals with ADHD used F2F communication more, they might be more satisfied with their relationships. The findings also provide evidence that MST and CET are complimentary in

that more than one channel for relational maintenance helps improve the relationships of individuals with ADHD. In addition to offering practical implications for individuals navigating neurodiverse relationships, this dissertation contributes to research in communication and related fields (e.g., family studies and psychology) by offering new theoretical implications for extending CET to F2F contexts.

Keywords: ADHD, channel expansion theory, longitudinal, minority stress theory, neurodiversity, relational maintenance, richness, satisfaction

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This dissertation is dedicated to . . .
Everyone who told me not to do it,
Everyone who told me I had to do it,
And to everyone who kept me sane while I did it.
Thank you.

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I. Introduction

Chapter 1 introduces the project, which proposes that individuals with ADHD use maintenance strategies and communication technologies to improve their relationships over time and ultimately have satisfying relationships. The introduction discusses why existing literature situates neurodiversity as problematic for romantic relationships and discusses relational challenges that individuals with ADHD face and how minority stress theory (MST) may help explain this. Then, it discusses how individuals with ADHD may be able to alleviate some of these challenges to relationships and intimacy through specific maintenance strategies and channel affordances using channel expansion theory (CET). The proposed model integrates MST and CET by situating individuals' desire to maintain their marginalized or stigmatized relationships and manage their ADHD as a motivator of channel use; it also considers the role of maintenance as a mediator and closeness, satisfaction, and intimacy as relational quality outcomes. A discussion of the significance of this dissertation follows, and then a preview of the dissertation is outlined.

ADHD and Interpersonal Challenges

One in eight adults in the United States identifies as having Attention-Deficit/Hyperactivity Disorder (ADHD). Individuals with ADHD experience behavioral, cognitive, and mood-related problems (Fayyad et al., 2017), which affect their relationships because they process information differently than their neurotypical counterparts (e.g., Eakin et al., 2004). Neurodiverse relationships occur when one or both partners have cognitive, developmental, behavioral, or other neurological conditions. These conditions may include but are not limited to ADHD, Tourette Syndrome, Acquired Neurodiversity, Mental Illnesses, and Autism Spectrum Conditions. Because neurodiverse individuals process information differently

than neurotypical individuals, they consequently experience behavioral, cognitive, and mood-related problems that are associated with low relational quality, less effective communication, and insecure attachment orientations (Bruner et al., 2015; Canu et al., 2014; Eakin et al., 2004; Knies et al., 2021; Rokeach & Wiener, 2018). Relational satisfaction refers to how happy each partner is with their partner and their relationship and operationalized in terms of relational quality (Norton, 1983; Segrin & Flora, 2001). Relational closeness and intimacy are also closely related; relational closeness refers to the strength of a couple's connection (e.g., spending time together and prioritizing one another in their lives; Dibble et al., 2012), whereas intimacy refers to the strength of a couple's emotional connection (e.g., communicating personal information, understanding one another, depending on one another for support, and trusting one another; Sternberg, 1997). Because these are all so similar and closely related, they are all considered in this study, but relational satisfaction is the primary indicator of quality in the analysis since it is most frequently used in maintenance studies.

Individuals with ADHD have cognitive differences that make communication more difficult (Baird & Stevenson, 2000), including those related to emotional face and prosody perceptions (Uekermann et al., 2010), which can lead to interpersonal problems (Bora & Pantelis, 2016) and make relational maintenance more difficult. Relational maintenance refers to the strategies that couples use to sustain their relationships (Ogolsky et al., 2017; Stafford et al., 2000; Stafford & Canary, 1991). Maintenance consists of specific relational behaviors and is both a predictor and an outcome of relational quality. Some maintenance behaviors include positivity, understanding, self-disclosure, relationship talks, assurances, and networks (Stafford, 2011). Successful social interaction depends on being able to understand others' feelings. Social cognition includes encoding, representing, and interpreting social cues, as well as the "perception

of emotions from faces and prosody, theory of mind, empathy, and humor processing” (Uekermann et al., 2010, p. 734). Others have noted that “general cognitive impairment has contributed to social cognitive deficits in ADHD” (Bora & Pantelis, 2016, p. 699).

Individuals with ADHD struggle to manage their executive functions, including specific cognitive skills such as problem-solving, sustained attention, and response inhibition (Parker & Boutelle, 2009; Prevatt, 2016; Wedlake, 2002). These characteristics create a stigma for individuals with ADHD as being inattentive and underachievers. Women often experience the stigma more than men as women are more quickly labeled as lazy, unorganized, and incapable (Smyth et al., 2015). These symptoms of ADHD can contribute to relational stress among individuals who experience some form of marginalization, such as having ADHD. Minority stress theory (MST) posits that as a result of marginalization, couples experience unique stressors that affect their relational quality and well-being and will use specific maintenance strategies to manage the added stress (Ogolsky et al., 2017).

These elements that make interactions for individuals with ADHD more difficult likely contribute to why current literature situates ADHD as bad for relationships. For instance, in their meta-analysis that included 44 articles examining ADHD and cognitions, Bora and Pantelis (2016) found that individuals with ADHD had significantly impaired social cognition compared to a neurotypical control group. They also found evidence that individuals with ADHD have trouble recognizing emotions such as anger, sadness, surprise, and happiness (Bora & Pantelis, 2016). Given these differences in cognitions and interpersonal challenges, it could be the case that individuals with ADHD use channels differently than their neurotypical counterparts.

Channel Use and ADHD

Given the relational challenges neurodiverse individuals face, it is important to understand how the symptoms of ADHD affect relationships. Neurodiverse individuals use different relational maintenance strategies and may use channels (e.g., audio, text-based, video) differently than their neurotypical counterparts. Further, it is important to understand how neurodiverse individuals use different channels over time as they gain more experience using that channel. Since all communication occurs through some combination of channels (i.e., face-to-face, phone calls, texting, and mobile applications), the goal of this research is to understand how technology affects communication processes related to maintenance and quality in neurodiverse relationships.

Channel affordances are particularly salient for neurodiverse individuals because some affordances may allow them to communicate in ways that they would otherwise not be able to. Affordances broadly refer to a “multifaceted relational structure between an object/technology and the user that enables or constrains potential behavioral outcomes in a particular context” (Evans et al., 2017, p. 36). Therefore, it is important to understand the relationship between certain affordances (i.e., feedback immediacy, editability, privacy, anonymity) and specific communication outcomes for neurodiverse individuals. Because affordances enable or constrain possible behaviors in particular contexts (Evans et al., 2017), neurodiverse individuals may experience affordances differently than their neurotypical counterparts, given the relational challenges associated with neurodiversity.

Channel expansion theory provides an additional understanding of this because it argues that individuals use particular channels to reach a common understanding of the message; as individuals become more familiar with a channel, they learn how to better send and interpret

messages in that channel (Carlson & Zmud, 1999; D'Urso & Rains, 2008). However, neurodiverse individuals may take longer to reach a common understanding of a message, and it may take longer for them to interpret messages in a channel. Therefore, once individuals learn to interpret messages and develop a shared understanding of the message, it may still take more time for their relationships to develop in terms of quality.

Significance

This dissertation advances MST and CET by examining whether individuals with ADHD use specific maintenance strategies and communication technologies to improve their relationships over time. In addition to offering practical implications for individuals navigating non-neurotypical relationships, this dissertation contributes to research in communication and related fields (e.g., family studies and psychology) by offering new theoretical implications for extending CET and MST. Specifically, this research provides a better understanding of how neurodiverse individuals use communication technologies and relational maintenance strategies to enhance their relationships and how these strategies compare to their neurotypical counterparts.

Preview

Chapter 2 provides a review of the literature surrounding ADHD, relational maintenance, channel richness, and related theoretical frameworks. Chapter 3 describes the method and analysis of the longitudinal study. Chapter 4 reports the findings, and Chapter 5 discusses the implications of the findings.

II. Literature Review

In this section, the literature on relational maintenance and minority stress theory (MST) provides the groundwork for explaining why ADHD might be worse for relationships because of its effects on individuals' cognitions and relationships. Based on the differences in cognition that individuals with ADHD experience, the section discusses how neurodiverse individuals likely experience and use channels differently than their neurotypical counterparts, which is also consistent with channel expansion theory (CET).

ADHD and Relationship Quality

Many behaviors or symptoms associated with ADHD can impact relationships, such as poor communication skills, emotional sensitivity and over-reactivity, impulsive behavior, and executive dysfunction (Robbins, 2005). For instance, Robbins notes that “the development of poor communication skills probably results from a combination of social skills deficits and other typical ADHD-related behaviors, which interfere with healthy communication in relationships” (p. 567). Further, individuals with ADHD often experience emotional sensitivity and over-reactivity, which can be off-putting to relational partners, and “this intense reactivity prevents people who have ADHD from being fully emotionally available to hear others” (Robbins, 2005, p. 567). Similarly, Bruner et al. (2015) found that individuals with more ADHD symptoms had perceived less relational quality than those who did not report any ADHD symptoms. They found that problems with emotion regulation and hostile relationship conflict mediated the relationship between ADHD symptoms and relationship quality (Bruner et al., 2015).

Individuals with ADHD may also have impulsive behaviors, making it difficult for them to think before taking action. Impulsive behaviors can lead to poor decisions and impulsive spending, impacting the entire family (Robbins, 2005). Finally, executive dysfunction also

creates problems in relationships because “disorganization and forgetfulness lead to piles of unfinished laundry, clutter, chronic lateness, lost keys, missed events, and unpaid bills. These behaviors decay trust over time; the individual who has ADHD cannot be depended on to execute” (Robbins, 2005, p. 568).

Other research shows that individuals with ADHD have more negative perceptions about their relationships compared to their non-ADHD counterparts. The marital adjustment of spouses with ADHD was lower than their neurotypical counterparts, regardless of gender; more spouses with ADHD had scores in the maladjusted range (58%) compared to the comparison group (25%) (Minde et al., 2003). Neurotypical spouses of individuals with ADHD “rated their marriages somewhat better and did not differ significantly from the spouses” in the comparison group (Minde et al., 2003, p. 641). So, when one spouse has ADHD, and the other does not, the spouse without ADHD perceives their relationship as better than the person with ADHD perceives it to be. Likewise, Eakin et al. (2004) found that individuals with ADHD reported lower marital adjustment and more family dysfunction than individuals without ADHD, and these reports were consistent with what their spouses reported. Compared to their spouses, individuals with ADHD had more negative “perceptions of the health of their marriages and families” (Eakin et al., 2004, p. 1). Consistent with these findings, individuals with ADHD are also more likely to get divorced and are less satisfied with their family and social life (Biederman et al., 2006). These adverse relational outcomes are consistent with the relational stigma associated with having ADHD and contributes to the idea that ADHD is somehow inherently bad for relationships. Moreover, the stigma associated with ADHD likely leads to relational stress and tensions in ADHD relationships. Thus, individuals with ADHD experience more stress related to the stigma of ADHD and how it may affect their interpersonal relationships.

Other studies noted relational differences among individuals with ADHD. For instance, individuals with ADHD report less intimacy and less satisfaction in their relationships (Ben-Naim et al., 2017). Ben-Naim et al. (2017) note that having ADHD significantly impacts relationships and intimacy, making it especially challenging for individuals who live with their partners who have ADHD. In a study of adolescents with ADHD (ages 13 to 18), individuals reported having more romantic partners than their neurotypical counterparts (Rokeach & Wiener, 2018), which indicates that individuals with ADHD may have difficulty maintaining romantic relationships. Furthermore, women with ADHD reported having shorter romantic relationships than neurotypical women (Rokeach & Wiener, 2018), indicating difficulty maintaining relationships. However, contrary to prior research, Rokeach and Wiener (2018) found that adolescents with ADHD did not have significantly different levels of relationship quality, which may be because the adolescents' relationships did not have time to develop. It may also be because ADHD symptoms tend to decrease or change in adulthood, so these changes may have been yet to come.

Relational Maintenance

Relational maintenance refers to the many activities and behaviors that couples use to sustain their relationships (Ogolsky et al., 2017; Stafford et al., 2000; Stafford & Canary, 1991). To this end, relational maintenance may include keeping the relationship in existence, in a specific state, in a satisfactory state, or in repair (McEwan, 2017). Relational maintenance in couples where at least one partner has ADHD is complicated by various symptoms related to social cognition that make maintaining relationships more difficult. Stafford (2011) includes six forms of relational maintenance: positivity, understanding, self-disclosure, relationship talks, assurances, and networks. Positivity refers to the extent that their partner acts positively and

cheerfully, and understanding refers to how understanding and forgiving the partner is. Self-disclosure is also important, and it includes whether their partners talk about their fears and feelings. Related to this is relationship talks, which refers to discussions about the quality of the relationship and how they feel about the relationship. Assurances are closely related, but they focus more on future events and helping with household tasks. Finally, networks as a maintenance strategy include doing activities with friends, spending time with family, and asking family members for help (Stafford, 2011). Given that individuals with ADHD struggle with conveying emotion, it is likely that they also struggle with specific maintenance strategies (i.e., self-disclosure, relationship talks, and assurances).

Traditionally, imagined interaction, future thinking, avoidance, and letter writing have been considered important maintenance strategies (Maguire et al., 2013; Ogolsky et al., 2017), but these strategies become complicated when at least one partner has ADHD. For instance, it is often more difficult for someone with ADHD to plan ahead, which makes tasks such as future thinking and writing more difficult and perhaps less cohesive. The lack of cohesiveness in a letter written by someone with ADHD might jump around from point to point and be difficult for another person to follow. However, if the person with ADHD were to send texts back and forth with another person instead of writing a letter, it might be more comfortable for the other person to understand the context of the messages. Moreover, many studies treat media use as a mere strategy for maintenance; it is important to acknowledge media use as an essential component of relational maintenance (Rabby, 2007), especially since individuals spend so much time on communication technologies (CTs) maintaining existing relationships (Valkenburg et al., 2016). Furthermore, it is important to consider how individuals with ADHD maintain their relationships and how their position as someone with ADHD influences the quality of their relationships.

H1: Maintenance is positively associated with quality.

Minority Stress Theory (MST)

Minority stress theory is an extension of social stress theory and argues that marginalized groups experience unique stressors that result in adverse health and well-being outcomes (Meyer, 2003). LeBlanc et al. (2015) note that stigmatized groups become exposed to stressors such as “stigma or expectations of rejection, experiences of discrimination (both acute events and chronic everyday mistreatment), internalization of negative social beliefs about one’s social groups or social identities, and stressors related to the concealment or management of a stigmatized identity” (p. 43). LeBlanc et al. (2015) build on MST by introducing the idea of couple-level minority stressors. They argue that minority stressors at the couple level can arise as a result of the stigmatized relationship status, which affects relational and individual well-being (LeBlanc et al., 2017).

The symptoms consistent with ADHD contribute to relational stress, and “individuals who experience different forms of marginalization as a function of their identities or relationship composition may use maintenance strategies to navigate the added social stress” (Ogolsky et al., 2017, p. 290). Minority stress theory (MST) argues that certain maintenance strategies are necessary for combating the added stress resulting from marginalization (Ogolsky et al., 2017). In other words, stigmatized relationships use more maintenance strategies to increase their relational quality. The theory assumes that stress is chronic and is “embedded in the broader social context” (Ogolsky et al., 2017, p. 290).

Meyer (2003) notes several minority stress processes that mirror common relational maintenance strategies. For instance, Meyer identifies coping and social support at the individual and community level as a minority stress process and recognizes that it can minimize the impact

of stress. In this sense, coping and social support mirror Stafford's (2011) networks maintenance strategy that says that spending time with and asking friends and family for help can be an important form of maintenance. Meyer identifies prominence, valence, and integration as characteristics of minority stress that may be more or less prominent based on a person's specific situation. When considered at the relational level, these characteristics could mirror maintenance strategies such as assurances, positivity, and understanding. Finally, Meyer identifies a few proximal stress processes, such as expectations of rejection and concealment, that involve self-perceptions and appraisals related to a person's minority status. At the relational level, these processes could mirror the relationship talks and self-disclosure maintenance strategies since talking about the relationship, their fears, and their feelings could mitigate some of the negative characteristics associated with minority stress. Therefore, the minority stress processes that Meyer identifies as potential strengths in stigmatized individuals mirror some relational maintenance strategies.

While researchers typically apply MST to same-sex, age-gap, and interracial relationships, it also applies to individuals with learning differences; recently, Geiger (2019) used MST as a way to connect stigma experiences associated with learning differences to individual distress. Provided that individuals with ADHD deal with many similar challenges regarding stigma, MST can be applied to individuals with ADHD. Moreover, given the stigma associated with ADHD and the relational challenges associated with the symptoms of ADHD, it can be applied to ADHD relationships. Thus, in accordance with MST, it would follow that poor relational quality in ADHD relationships stems from not using enough maintenance strategies. Therefore, when individuals with ADHD use more maintenance strategies, they too will have increased satisfaction, which would highlight the importance of using maintenance strategies in

these relationships. Conversely, such a finding could also point to other ways couples may counter the negatives associated with ADHD relationships. Therefore, Hypothesis 2 is as follows:

H2: Individuals with ADHD engage in more maintenance behaviors than do NT people.

Stigma

Prior research has demonstrated support for MST in same-sex, age-gap, and interracial relationships. Specifically, individuals in stigmatized relationships perceived more stigma, poorer alternatives, and less relational investment than individuals in nonmarginalized relationships (Lehmiller & Agnew, 2006; Ogolsky et al., 2017). Moreover, “MST conceptualizes stress as a mediator in the relationship between stigmatizing societal structures ... and the many adversarial health outcomes” (Pitoňák, 2017, p. 66). In Hatzenbuehler's (2009) model, coping and emotion regulation (e.g., coping motives and rumination), social and interpersonal interactions (e.g., social isolation and social norms), cognitive factors (e.g., hopelessness and negative self-schema) mediate the relationship between stigma-related stressors (e.g., individual perceptions) and psychopathology (e.g., depression and anxiety). Prior studies have used various adaptations of the model, mainly using sexual minority status as the stigma-related stressor. For instance, another study found that coping motives mediated the relationship between sexual minority status, suicidality, and depressive distress (Matthews et al., 2002). Additionally, social support mediated the relationship between sexual minority status and depressive symptoms (Safren & Heimberg, 1999) and suicidality (Eisenberg & Resnick, 2006; Plöderl & Fartacek, 2005). Thus, it would follow that relational maintenance (including positivity, openness, assurances, network, and tasks) would mediate the relationship between ADHD (as a stigma-related stressor) and intimacy (as a form of psychopathology).

Prior research has examined the impact of stigma on relationships and intimacy. For instance, Frost (2011) found that individuals in same-sex relationships perceived stigma in different ways. Some participants thought stigma negatively impacted their relationships, some thought it was relevant but external to their lives, some thought it provided an opportunity to define the relationship, and others thought that stigma brought them closer together (Frost, 2011). Doyle and Molix (2014) examined the impact of stigma on relationships and found that perceived stigma (in the form of discrimination) impairs self-image and harms the quality of romantic relationships. Specifically, they found that impaired self-image mediates the relationship between perceived stigma and relationship quality (Doyle & Molix, 2014). These findings support the idea that “stigma and the resulting social identity threats can have detrimental effects on the romantic relationships of members of devalued groups” (Doyle & Molix, 2014, p. 607).

Intimacy and Satisfaction

Consistent with prior findings, Ben-Naim et al. (2017) found that spouses of individuals with ADHD reported less intimacy and less marital satisfaction compared to spouses in neurotypical relationships. They found that the spouse’s reported intimacy mediates the relationship between their partner’s ADHD and marital satisfaction, such that greater intimacy leads to greater satisfaction (Ben-Naim et al., 2017). Canu et al. (2014) also found that individuals with ADHD were less satisfied with their relationships than their neurotypical counterparts. However, Lopez (2015) and Bell (2014) did not find significant differences between ADHD symptoms and relational satisfaction, indicating that there might not be a direct link between ADHD symptoms and satisfaction. Instead, and consistent with Ben-Naim et al.’s findings, a couple’s level of intimacy could alleviate some adverse effects of ADHD symptoms,

which in turn would lead to greater relational satisfaction. Therefore, more relational maintenance strategies should increase intimacy (and relational satisfaction).

H3: Maintenance mediates the association between ADHD and quality.

Maintenance and CTs

Couples use communication technologies (CTs) to help maintain their relationships. For instance, emails, texts, and instant messages offer partners a more private way to communicate with one another (Ogolsky et al., 2017) and are primarily used to maintain a smaller number of close ties (Bayer et al., 2016). In regard to phone calls, texting, email, or Facebook, Ledbetter et al. (2016) found that relational closeness depends on how often individuals use a medium and how much the person enjoys using that particular form of communication (Ledbetter et al., 2016). In romantic relationships, partners most often used email to communicate assurances, openness, positivity, and discussing social networks. Further, romantic partners use more assurances, and few differences existed between long-distance and geographically close relationships (Johnson et al., 2008). Photo sharing also occurs in romantic partners, and they use it to maintain relationships by “recording memories and supporting relationships, self-presentation, and self-expression” (Bayer et al., 2016, p. 959).

Relational maintenance is one of the main reasons partners use social media since it provides an easy and accessible way to keep in contact with others (Ogolsky et al., 2017). “Social networking sites also enable users to post intimate details and experiences, share status updates, and change their profiles, which in turn can facilitate open disclosure, emotional support, positivity, affection, and public assurances to partners” (Ogolsky et al., 2017, p. 292). Scholars have begun to note differences in how people use different social media platforms. People tend to share small, everyday moments on ephemeral platforms like Snapchat, and they

share big moments on sites like Facebook (Bayer et al., 2016). People who have stronger ties communicate through more communication channels than people with weaker ties. For example, people had stronger ties with Facebook friends with whom they also communicated in person, thus supporting media multiplexity theory and strengthening relational closeness (Ledbetter et al., 2011).

In addition, couples may use video chat and video gaming platforms to maintain their relationships. In Xbox LIVE communication, “communication attitude predicts patterns of media use which, in turn, predict relational closeness” (Ledbetter & Kuznekoff, 2012, p. 273). Ledbetter and Kuznekoff (2012) found that the interaction of maintenance and face-to-face communication frequency predict relational closeness. Further, CTs with a stronger social presence do a better job creating a shared space between users. For example, Neustaedter and Greenberg (2012) examined how serious couples used video chat, and they found that people used video chat to connect two locations into essentially one, creating a “shared living experience that modeled face-to-face settings more than other CMC technologies” (p. 761). Likewise, Janning et al. (2018) found that LDR couples found video chat more helpful and meaningful compared to other forms of communication. While they note that video chat is not the same as a physical presence, video chat does create a stronger sense of presence “for partners in LDRs because they facilitate communication that would otherwise be hindered by geographic distance” (Janning et al., 2018, p. 1299). Similarly, Williams et al. (2007) note that voice-based communication is more conducive to relational strength and trust than text-based communication, which provides further support for the idea that immediate, video-based chats provide a greater social presence, and therefore, more closeness between partners (Williams et al., 2007, p. 439).

While maintenance strategies have remained relatively constant as new technologies emerge, it is clear that people use different technologies for different kinds of communication, such as positivity, openness, assurances, social networks, and sharing tasks (Houser et al., 2012). Furthermore, long-distance partners often use a variety of different technologies and applications to communicate. In close, long-distance friendships, people use communication technologies complementarily, meaning that a new CT would not necessarily displace an existing CT (Ruppel et al., 2018a).

Channel Richness and Neurodiversity

Affordances generally refer to the features or attributes of different communication channels (Eveland, 2003; Fox & McEwan, 2017). Early literature situated affordances as inherent properties of a channel (Gibson, 1979), and later, others posed the importance of looking at perceived affordances based on a person's experience using the channel (Norman, 1990). So, while the features of a channel are familiar to everyone on the channel, the affordances of the channel are unique to the person using the channel (Treem & Leonardi, 2012). Over time, conceptualizations of affordances have become important to theories surrounding computer-mediated communication (Sundar et al., 2015; Walther, 1996; Wellman et al., 2003) and have led to additional research on social or communicative affordances, which refer to affordances that have meaningful implications for interpersonal interactions (Bazarova, 2012; Parks, 2009; Wellman et al., 2003). While some have theorized using Gibson's conceptualization of affordances (i.e., Sundar et al., 2015), this notion of communicative affordances leaves out individual perceptions of the affordance (Fox & McEwan, 2017; Norman, 1990). Gibson's approach has been difficult to conceptualize as more features get continuously added to new technologies (Parks, 2017). To address this, Evans et al. (2017) conceptualized affordances by

linking them to specific features, while others opted to conceptualize affordances based on message perceptions (O’Sullivan & Carr, 2017). As such, Hogan’s (2009) definition of social affordances is likely the most widely accepted: “social affordances are the perceptual cues that connote aspects of social structure to individuals thereby creating a functional difference for the individual” (Hogan, 2009, p. 27). This dissertation focuses on perceived social affordances using Hogan’s and Fox and McEwan’s conceptualization.

Given that neurodiverse and neurotypical individuals use social media and various affordances, it is important to identify and understand individual differences in neurodiversity. To this end, Fox and McEwan (2017) note that “individual differences such as cognitive capacity, media literacy, or physical limitations may influence a user’s ability to evaluate affordances of a channel the way the researcher expects” (Fox & McEwan, 2017, p. 301). Therefore, neurodiverse individuals likely experience affordances differently than how researchers conceptualize them. Thus, “assessing individuals’ perceptions of these affordances will provide greater insight into social interaction” (Fox & McEwan, 2017, p. 301) and “offer more nuanced—and durable—theorizing that is more flexible across contexts” (Ellison & Vitak, 2015; Fox & McEwan, 2017, p. 299).

Fox and McEwan (2017) identify twelve affordances (accessibility, bandwidth, social presence, privacy, network association, personalization, persistence, editability, conversation control, anonymity, information control, and synchronicity), and literature has begun examining when individuals prefer to use specific affordances. While not much literature exists surrounding individuals with ADHD or neurodiverse individuals more generally, existing literature has examined other individual differences in self-disclosure depth and intimacy. For instance, Sheldon (2013) found that men and women disclosed more to people they considered more

intimate. Further, women disclosed more to their exclusive face-to-face and Facebook friends, and that men disclosed more to their recently added Facebook friends (Sheldon, 2013).

Since affordances enable and constrain behavioral outcomes in certain contexts, neurodiverse individuals will experience affordances differently than their neurotypical counterparts, given the relational challenges associated with neurodiverse relationships.

Since individuals with ADHD may be susceptible to the cognitive effects of CTs (Engelhard & Kollins, 2019), a couple of studies have begun examining ADHD and individual differences related to technology use (Kim, 2018; Seo et al., 2015). For instance, ADHD symptoms are positively associated with problematic mobile phone use but are not associated with multicommuting behaviors; ADHD symptoms correlated with social assurance, problematic mobile phone use, and multicommuting (Seo et al., 2015). Kim (2018) found that individuals with ADHD showed higher levels of loneliness, higher levels of problematic smartphone use, greater need for social assurance, and a greater need for immediate connection compared to those without ADHD. For individuals with ADHD, the relationships between loneliness and the need for social assurance and between the need for social assurance and the need for immediate connection were significantly stronger (Kim, 2018). Further, Seo et al. find that multicommuting does not occur, but Kim asserts that such multicommuting may help alleviate symptoms of ADHD, such as boredom and the need for constant connection. However, both studies are atheoretical and cross-sectional. They also measured ADHD symptoms rather than diagnoses. This measurement distinction is important because an ADHD symptoms measure measures how likely it is that a participant has ADHD, which is beneficial because many individuals may have symptoms of ADHD or suspect they have ADHD without having a formal diagnosis.

While communication technologies allow individuals to be almost always connected, Kim (2018) found that spending more time interacting face-to-face (F2F) weakened the link between the need for social assurance and the need for immediate connection for individuals with ADHD. This finding implies that F2F interactions might be more important for individuals with ADHD than for those without ADHD. Kim notes that F2F interaction would be best for individuals with ADHD since it reduces boredom and fulfills the desire to be more connected to others. Therefore, they argue that “it is necessary and important for those with ADHD to continue trying to mingle and interact with others F2F, although they might have to face tremendous challenges in F2F settings” (Kim, 2018, p. 396).

Channel Expansion Theory (CET)

Individuals with ADHD and their partners may adjust their use of channels to enhance their communication and relational quality. Moreover, individuals adapt to the affordances of text-based channels, which suggests that neurodiverse and neurotypical individuals may adapt and prefer different affordances (Walther, 2011). Channel expansion theory (CET) focuses on how individuals use particular channels to reach a common understanding of the message; as individuals become more familiar with a channel, they learn how to better send and interpret messages in that channel (Carlson & Zmud, 1999; D’Urso & Rains, 2008). Carlson and Zmud (1999) “propose that traditional conceptualizations of experience (as use) are only important to the extent that they establish a subject as a user; it is the nature of this use and the knowledge bases developed through it that will ultimately determine richness perceptions” (p. 154). CET offers an extension of media richness theory by shifting focus to richness perceptions over time based on an individual’s experiences with the channel, communication partner, topic, and context (Carlson & Zmud, 1999; Hasty et al., 2006). Traditionally, researchers discuss CET in various

contexts, including online learning (Cole, 2016; Fernandez et al., 2013; Hew & Syed Abdul Kadir, 2017), organizational communication (Lind, 2000; Ogara et al., 2014), and interpersonal communication (Hasty et al., 2006; Powell & Roberts, 2017).

Moreover, channel richness also matters in interpersonal relationships. Ruppel and Burke (2015) found that “among mediated communication channels, complementarity does not exist across the board but is a function of individual characteristics” (Ruppel & Burke, 2015, p. 46). Thus, some channels may be used differently according to an individual’s preferences. Specifically, “text-based communication is more controllable than ‘richer’ channels such as face-to-face communication...text messaging should enable people with low social competence to communicate more effectively because they feel more comfortable in a text-based environment” (Ruppel et al., 2018b, p. 60). Since individuals with ADHD often lack social competence, this is one example of how individuals with ADHD may adapt their use of channels in their relationships.

CET’s focus on internal and experiential factors is particularly salient to neurodiverse relationships because neurodiverse individuals—and their partners—need to learn how to use channels for effective communication since they process information differently. Moreover, individuals with ADHD manage their ADHD in a variety of different ways, including using text-based and voice or video messages to remember conversations. Thus, individuals with ADHD will use channels to help them reach a common understanding of the message, and consequently, develop a relationship with their partner. Thus, for individuals with ADHD, the enabler and motivator for using a channel may help manage their ADHD.

H4: Individuals with ADHD use CTs more often than people without ADHD.

Channel perceptions

Existing research suggests that partners choose communication technologies they both enjoy using (Ledbetter et al., 2016). For example, Ledbetter and Kuznekoff (2012) note that “individual attitudes intersect with contextual and dyadic characteristics” and that “dyad members may employ a new form of connection only if they possess certain attitudes toward the new medium” (p. 284). Other theories suggest that partners stick with the CTs that work best for them. For example, Williams et al. (2007) note that people adapt to specific media over time and that “users will use those media to maintain relationships similarly to how they would in face-to-face interactions” (p. 439).

Channel Use

Furthermore, when people perceive messages as richer, the messages are associated with having richer meaning with that communication partner (Carlson & Zmud, 1999), which may also be associated with relational development in terms of closeness, satisfaction, and intimacy. Therefore, channel use may be enabled or motivated by the desire to maintain their relationship and their ADHD.

As people gain experience with a channel, they develop a better understanding of it. “Given this increasing ability to communicate effectively in various situational contexts through a particular channel, people are expected to perceive the channel as becoming increasingly rich” (Carlson & Zmud, 1999, p. 155). Ogara et al. (2014) examined the factors that influence social presence and user satisfaction with mobile instant messaging. They found that user experience, social influence, and perceived richness are important indicators for social presence and user satisfaction in mobile instant messaging. Furthermore, they found that mobile instant messaging

is a function of social presence, user experience, and social influence (Ogara et al., 2014). Thus, their findings indicate that frequently using mobile messaging develops their experience with the channel and allows them to perceive the channel and their interactions on the channel as having more richness (Ogara et al., 2014).

H5: Channel use is positively associated with perceived richness.

Furthermore, because CET recognizes that experience shapes individuals' perceptions of richness within a channel, "individuals whose experiences build such knowledge bases and who are thus able to participate in increasingly rich communication via the channel will perceive the channel as becoming increasingly rich" and "if developed, will enhance the ability to communicate effectively" (Carlson & Zmud, 1999, p. 155). In alignment with CET, Cho and Lee (2020) note that individuals' perceptions about channels change based on their experiences.

Because people with physical disabilities use smartphones more often in Korea, they examined individuals with physical disabilities' intentions to use smartphones; they found significant associations between satisfaction and perceived ease of use and perceived usefulness (Cho & Lee, 2020). Thus, CET assumes a link between partners' experiences with a channel and intimacy with their partner. Because of this link, individuals' perceptions of channel richness will be associated with relational closeness, satisfaction, and intimacy such that as perceptions of channel richness increase, relational closeness, satisfaction, and intimacy also increase. In other words, the better you get at using the channel, the better you get at relational maintenance.

Figure 1 depicts a model of the hypotheses.

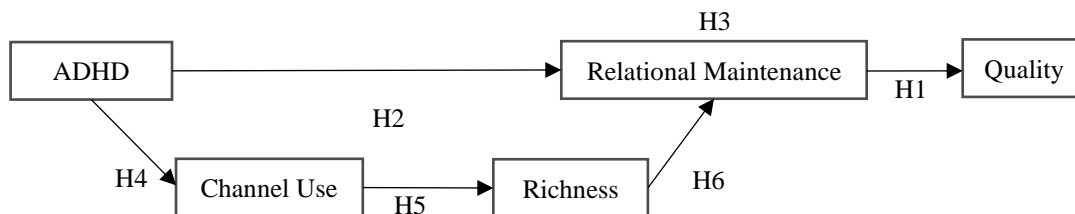
H6: Richness is positively associated with maintenance.

Changes over time

Thus, MST and CET provide a way to understand how individuals with ADHD use specific maintenance strategies and communication technologies to improve their relationships over time. Moreover, these effects of the strategies and technologies used on closeness, satisfaction, and intimacy will likely be more pronounced over time, and the outcomes associated with stigma and marginalization also persist over time. Therefore, a multi-wave longitudinal study will provide insights into how these factors change over time and differ between individuals with ADHD and neurodiverse individuals. For instance, individuals with ADHD may take longer to understand and interpret messages in a channel, and it may take longer for them to figure out which channels work best for managing their ADHD. Thus, it would follow that for individuals with ADHD, the associations in the model will eventually be just as strong as the associations for neurotypical individuals.

RQ: How do these relationships change over time?

Figure 1. Hypothesis Model



Integrating MST and CET

Marginalized couples experience stressors that affect their relationships (LeBlanc et al., 2015). In their examination of marginalization in close relationships, Lehmiller and Agnew (2006) found that individuals in marginalized relationships perceive similar levels of relationship

commitment to their non-marginalized counterparts and argued that marginalized individuals compensate for their reduced satisfaction in some way (Lehmiller & Agnew, 2006). Moreover, more maintenance strategies are needed to offset relational stress as a result of marginalization (Ogolsky et al., 2017), but it is unclear how relational maintenance contributes to relational quality for marginalized groups. One possible explanation is that individuals with ADHD will compensate for their reduced satisfaction through increased relational maintenance. Since individuals with ADHD have a need to maintain their relationships, it is likely they will do so through more than one channel (i.e., F2F and texting; Dutta-Bergman, 2004; Ruppel et al., 2018a). Moreover, CET argues that individuals will become better at sending and interpreting messages in a channel as they gain experience with the channel (Carlson & Zmud, 1999; Rains, 2008). In other words, it is possible that marginalized individuals will compensate for their lowered quality by using more than one channel for maintenance. Therefore, as individuals with ADHD get better at using multiple channels for maintenance, their relational quality will improve.

III. Method

A longitudinal design examined how maintenance strategies affect the quality and channel use over time in individuals with ADHD and neurotypical relationships. Participants completed three surveys (one every two weeks) to assess changes over time. The complete survey, as well as the measures on each survey, is available in the appendix.

Participants

To be eligible to participate, participants must be at least 18 years old and be in a romantic relationship. Participants ranged in age from 19 to 69 ($M = 35.11$, $SD = 10.27$). Participants identified as being a man ($n = 66$), woman ($n = 78$), and other ($n = 1$). Participants were primarily white ($n = 114$), followed by Asian ($n = 15$), Black/African American ($n = 9$), American Indian or Alaska Native ($n = 3$), and other ($n = 8$). Participants reported being in relationships for a range of one month to 39 years ($M = 6$ years, $SD = 6$ years). Moreover, the participants with ADHD reported on their perceived discrimination ($M = 2.40$, $SD = .90$, $\alpha = .98$).

Out of the 659 individuals who completed the initial survey, only 149 were retained for Time 1 (59 individuals with ADHD and 90 without) after bot screening and after screening out those who did not complete attention check questions. Two weeks later, for Time 2, 67% of the original participants were retained ($N = 100$). Individuals with ADHD completed fewer surveys at Time 2 ($n = 22$, 37% retention) compared to those without ADHD ($n = 78$, 87% retention). Two weeks later (four weeks after the first survey), for Time 3, 68% of the original participants were retained ($N = 101$). All participants who completed the first survey also completed the last survey. Individuals with ADHD completed fewer surveys at Time 3 ($n = 32$, 54% retention) compared to those without ADHD ($n = 69$, 76% retention). A total of 79 participants with ($n =$

18) and without ($n = 61$) ADHD completed all three surveys (53% retention from Time 1 to time 3). While the retention rate is not as great as it could be, it is comparable to other recent studies using the same method (e.g., Pennington & Hall, 2020) who saw a 56% retention rate from Time 1 to Time 2, a 76% retention rate from Time 2 to Time 3, and a 43% retention rate from Time 1 to Time 3.

Procedures

Amazon's Mechanical Turk (MTurk) service was used to recruit participants since users on the platform are generally more diverse than a college student sample (Sheehan, 2018). Because MTurk likely has more neurotypical individuals than neurodiverse individuals, two separate surveys were posted to MTurk. The first was specifically for individuals with ADHD, and the second was for neurotypical individuals (i.e., individuals without ADHD). The second survey was posted two weeks after the first and was available only to MTurk workers who completed the first survey. The third survey was posted two weeks after the second survey and was only available to workers who previously completed a survey. Participants earned \$2.00 per survey. Participants on MTurk received a direct message to inform them of the follow-up survey (Pennington & Hall, 2020). All participants received a code that linked their surveys together for times 1, 2, and 3. For social media, participants voluntarily completed the first survey and entered their email. They were automatically sent a link to the second and third surveys after two and four weeks.

Participants ($N = 149$) self-identified as either having ADHD (being diagnosed as such by someone qualified to do so) or as being neurotypical (never been diagnosed with ADHD and do not suspect they have it). To make sure that neurotypical individuals were all neurotypical and to demonstrate differences in the sample, all participants completed the ADHD symptoms measure.

Participants also reported on whether they had other forms of neurodiversity (i.e., Autism, mental illness, Tourette Syndrome).

Measures

ADHD Symptoms

Consistent with Kim (2018), the first six items of the Adult ADHD self-report scale (ASRS) measured ADHD symptoms. The World Health Organization and Kessler et al. (2005) developed the ASRS, and Adler et al. (2006) determined that the first six items were the most effective at screening for ADHD in adults. The first six items have been used as an effective measure recently by Kim (2018). Participants rated how often they experienced each symptom on a five-point Likert scale (with options ranging from never to very often). The first six items included “How often do you have trouble wrapping up the final details of a project, once the challenging parts have been done,” “How often do you have difficulty getting things in order when you have to do a task that requires organization,” “How often do you have problems remembering appointments or obligations,” “When you have a task that requires a lot of thought, how often do you avoid or delay getting started,” “How often do you fidget or squirm with your hands or feet when you have to sit down for a long time,” and “How often do you feel overly active and compelled to do things like you were driven by a motor.” Individuals are considered to have symptoms highly consistent with ADHD if they choose “sometimes,” “often,” or “very often” for the first three items and if they choose “often” or “very often” for the last three items. The scale achieved strong reliability ($\alpha = .87$). Prior studies have had high reliability using the scale (e.g., $\alpha = .92$, Seo et al., 2015).

Channel Use

Carlson and Zmud's (1999) and D'Urso and Rains (2008) measures assessed the participant's perceived experience with the channel. For face-to-face communication and the one other channel they use most often, participants indicated their experience and competence with the channel, as well as how easy each channel is for them to use (Carlson & Zmud, 1999; D'Urso & Rains, 2008). An additional ten items assessed perceived experience with a communication partner; greater scores indicated greater perceived experience. Moreover, participants indicated how much they communicate through each channel (e.g., face-to-face, phone calls, texting [including private direct messages], email, and social networking. For instance, response options incrementally increased by five messages and ranged from zero (indicating that no messages were sent through that channel) to seven (indicating that more than 30 messages were sent on that channel (Jiang & Hancock, 2013; Kahlow et al., 2020; Ruppel et al., 2018b). The scales achieved strong reliabilities for F2F ($\alpha = .78$) and texting ($\alpha = .84$)

Richness

Ferry et al.'s (2001) measure of richness captured how rich participants believe different channels to be. Participants responded to two common channels: face-to-face communication and text messaging (e.g., Fox & McEwan, 2017; Harari et al., 2019; Ruppel & Burke, 2015). The measure includes subscales for multiple channels ($\alpha = .92$), immediacy of feedback ($\alpha = .90$), and personalness ($\alpha = .91$; Ferry et al., 2001). The combined scales achieved strong reliabilities for F2F ($\alpha = .87$) and texting ($\alpha = .91$)

Relational Maintenance

Stafford's (2011) updated RMBM measure assessed relational maintenance. The 23-item measure was completed twice by the participant: once regarding their in-person maintenance

behaviors and once for their text message maintenance behaviors. Participants rated responses on a seven-point Likert scale (1 = strongly disagree, 7 = strongly agree). The scales achieved strong reliabilities for F2F ($\alpha = .93$) and texting ($\alpha = .95$).

Relational Quality

Relational satisfaction was measured using the Quality of Marriage Index (Norton, 1983). Participants rated the extent to which they agree with five items on a 7-point Likert scale. Some of the statements included “We have a good relationship,” “My relationship with my partner makes me happy,” and “I feel like part of a team with my partner.” Participants also indicated their degree of happiness in their relationship (1 = not all happy to 10 = Extremely happy). The scale achieved strong reliability ($\alpha = .96$).

Closeness was measured using a combination of the unidimensional relationship closeness scale (URCS). URCS is a twelve-item measure of the closeness of personal and social relationships (Dibble et al., 2012). Respondents responded to each of the twelve statements on a seven-point Likert scale based on how strongly they agree or disagree. Some of the statements included, “We disclose important personal things to each other,” “I’m sure of my relationship with this person,” “I have a strong connection with this person,” and “I consider this person when making important decisions.” The scale achieved strong reliability ($\alpha = .95$).

Sternberg’s (1997) intimacy measure assessed intimacy in the relationship. The scale includes 14 items, and participants indicated how much they agreed with each statement on a 7-point Likert scale (Sternberg, 1997). Some items in the measure included “I communicate well with my partner,” “I feel that I really understand my partner,” and “I am able to count on my partner in times of need.” The scale achieved strong reliability ($\alpha = .95$).

Consistent with MST, Geiger and Brewster's (2018) and Geiger's (2019) adapted a scale for perceived discrimination to learning disabilities, which was then adapted for ADHD in this study. The phrase "learning disabilities" was replaced with "ADHD" in each of the 17 items. Participants rated how often each experience happened to them and how stressful they thought it was (Geiger & Brewster, 2018; Geiger, 2019). Response options range from 1 (this has never happened to me) to 7 (this happens to me almost all of the time [more than 70% of the time]) and from 1 (not at all stressful) to 7 (extremely stressful). A few of these questions included "People have talked down to me because I have ADHD," "I have been made to feel stupid because of my ADHD," "Others have teased me about being slow because of my ADHD," "People have told me that if I worked hard enough I would not need help (i.e., accommodations, assistance) for my ADHD," and "People have not believed that I have ADHD even when I tell them I do." The scale achieved strong reliability ($\alpha = .98$).

Analyses

Correlations, *t*-tests, mediation, and multi-level mediations tested the hypotheses. All correlations and mediations were conducted using both ADHD symptoms and ADHD diagnosis.

Correlations and t-tests

Correlations tested hypotheses 1, 2, 4, 5, and 6 to assess the relationship between study variables. Then, *t*-tests compared the means between individuals with and without ADHD hypotheses 2 and 4 to determine whether significant differences exist between the two groups.

Mediation

Hypotheses 3 used a simple mediation model and was analyzed using the Hayes' PROCESS extension for SPSS with Model 4 (Hayes, 2017, 2018). The complete model was tested using Hayes' Model 6, which allows for multiple mediators. Mediation is useful for testing

hypotheses about how a mechanism indirectly affects an outcome variable (Hayes, 2018). In a mediation model, the antecedent variable (X) predicts the outcome variable (Y), which refers to the direct effect. In the past, mediation was only used when there was an established association between X and Y , and this is rooted in the idea that there needs to be a correlation between the two to determine a cause-effect relationship.

In other words, mediators of an effect describe the mechanism or process (Hayes & Rockford, 2020). For instance, there might not be a direct relationship between ADHD symptoms and satisfaction; instead, symptoms may influence satisfaction through a third mediating variable, such as maintenance.

Unconditional Growth Curve Model

An unconditional growth curve model examined how each variable changed over time (Arroyo et al., 2021; Pennington & Hall, 2020). Data were converted to long-form so that each participant had one line of data for each time they completed the survey so that time could be used as a fixed and random effect. The fixed effects for time indicate whether time, on average, is associated with the trajectory of the outcome variable (i.e., satisfaction) for each person included in the sample. Significant fixed effects would indicate that the variables significantly changed over time (Arroyo et al., 2021).

Intraclass Correlations

Repeatability analysis was conducted using a two-way mixed-effect model with absolute agreement. The two-way mixed effect is appropriate here because it is used when participants respond to the same set of questions. The absolute agreement model is also appropriate since it assesses repeatability based on the same scores from each timepoint (Perinetti, 2018). The intraclass correlation coefficients (ICCs) were calculated for each of the repeated measures to

determine the amount of variability between timepoints. The ICC shows how much agreement exists between timepoints and how consistent they are relative to one another. Higher ICCs indicate that there is substantial agreement and that the timepoints are very consistent with one another, which would violate the independence assumption and deem further multilevel modeling necessary (Arroyo et al., 2014; Peugh, 2010).

Multilevel Mediation

To assess changes between Time 1, Time 2, and Time 3, the longitudinal data were analyzed using multilevel mediation modeling (MLMED) to analyze changes in the model over time (Hayes & Rockwood, 2020). Hayes and Rockford's MLMED macro for SPSS facilitated the longitudinal analyses. Multilevel modeling accounts for the nonindependence in longitudinal data (Hayes & Rockwood, 2020). The measurement level in a multilevel analysis may be two-level or one-level. Level 1 variables are attributes of the person, such as channel use, maintenance, and quality, while level 2 variables are those that apply to all level-1 observations, such as ADHD symptoms. In a Level-2 multilevel mediation model, potential moderators can be included to explain the variability (Hayes & Rockwood, 2020) or ADHD symptoms. The within-person effects can provide insight into how the differences each person experiences over time, and the between-person effects provide insight into changes within the group.

Rockwood's SPSS macro MLMED analyzed the longitudinal data. The MLMED macro is similar to the PROCESS macro, but it allows for mediation testing over time or multilevel testing (Hayes & Rockwood, 2020). The percentile bootstrap confidence interval method (for the initial data) was used to make inferences about the indirect effect. Further, the percentile bootstrap confidence interval and the Monte Carlo confidence interval (MCCI) reduces the risk

of Type I error (Hayes, 2018). Therefore, bootstrapping was used when analyzing the cross-sectional data, and the MCCI was used for the longitudinal data.

Summary

The goal of this research is to understand how neurodiverse individuals use communication technologies and relational maintenance strategies to improve their relationships and how these strategies may differ from their neurotypical counterparts. A longitudinal study is best suited to understand these changes over time, and data were analyzed using a combination of correlations, *t*-tests, mediations, and multilevel mediations. This research contributes to existing theories and research CET and MST in relation to neurodiverse relationships. The research offers practical implications for individuals in neurodiverse relationships, and it contributes to communication research and research in family studies and psychology by offering new theoretical implications for extending CET and MST. Specifically, this research provides a better understanding of how neurodiverse individuals use communication technologies to enhance their relationships and how these strategies may differ from their neurotypical counterparts. The next sections provide the results for the initial and longitudinal data. A discussion of the findings in terms of the theory surrounding neurodiverse relationships concludes the dissertation.

IV. Results

All means and standard deviations are reported in Table 19.

Cross-sectional Findings

Hypothesis 1 stated that maintenance is positively associated with quality. As indicated in Tables 1, 2, and 3, F2F and texting maintenance were positively and significantly associated with all quality measures for individuals with and without ADHD. Therefore, Hypothesis 1 is supported.

Table 1. Correlations between study variables for Time 1

	2	3	4	5	6	7	8	9	10	11
1. ADHD y/n	.62**	-0.02	-0.01	-.21**	0.05	-.17*	0.06	-0.10	-0.04	-0.00
2. ADHD Symptoms		-0.16	-0.01	-.23**	0.05	-.25**	0.02	-.16*	-0.10	-0.11
3. Maintenance F2F			.72**	.43**	.26**	.40**	.41**	.68**	.67**	.67**
4. Maintenance Texting				.34**	.49**	0.17	.49**	.56**	.50**	.51**
5. Channel Use F2F					.39**	.47**	.18*	.46**	.54**	.56**
6. Channel Use Texting						0.05	.53**	.30**	.29**	.35**
7. Richness F2F							0.15	.37**	.51**	.52**
8. Richness Texting								.31**	.31**	.32**
9. Satisfaction									.87**	.86**
10. Closeness										.90**
11. Intimacy										

*. Correlation is significant at the 0.05 level (2-tailed).

** . Correlation is significant at the 0.01 level (2-tailed).

ADHD diagnosis was coded as no = 0 and yes = 1.

Table 2. Correlations for Individuals with ADHD for Time 1

	2	3	4	5	6	7	8	9	10
1. ADHD Symptoms	-0.19	-0.03	-.30*	-0.08	-0.16	-0.02	-0.09	-0.10	-0.01
2. Maintenance F2F		.75**	.45**	.39**	.50**	.50**	.81**	.75**	.67**
3. Maintenance Texting			0.27	.53**	0.16	.53**	.64**	.45**	.45**
4. Channel Use F2F				.46**	.40**	0.10	.47**	.58**	.67**
5. Channel Use Texting					-0.04	.56**	.43**	.30*	.35*
6. Richness F2F						0.20	.41**	.47**	.53**
7. Richness Texting							.44**	.30*	.35*
8. Satisfaction								.88**	.84**
9. Closeness									.85**
10. Intimacy									

*. Correlation is significant at the 0.05 level (2-tailed).

** . Correlation is significant at the 0.01 level (2-tailed).

Table 3. Correlations for Individuals without ADHD for Time 1

	2	3	4	5	6	7	8	9	10
1. ADHD Symptoms	-0.19	0.00	-0.06	0.06	-.23*	-0.03	-0.15	-0.09	-0.17
2. Maintenance F2F		.70**	.41**	0.19	.32**	.34**	.59**	.62**	.68**
3. Maintenance Texting			.41**	.49**	0.17	.47**	.51**	.54**	.54**
4. Channel Use F2F				.40**	.49**	.27**	.44**	.53**	.52**
5. Channel Use Texting					0.12	.51**	.23*	.29**	.35**
6. Richness F2F						0.13	.32**	.53**	.54**
7. Richness Texting							.24*	.32**	.31**
8. Satisfaction								.86**	.87**
9. Closeness									.92**
10. Intimacy									

*. Correlation is significant at the 0.05 level (2-tailed).

** . Correlation is significant at the 0.01 level (2-tailed).

Hypothesis 2 stated that individuals with ADHD engage in more maintenance behaviors than do NT people. The correlations suggest that individuals with ADHD use fewer maintenance strategies when texting; for individuals with ADHD, a significant correlation existed between ADHD symptoms and texting maintenance ($r = -.30$), such that ADHD-diagnosed participants with more severe ADHD symptoms engaged in less maintenance via texting, but this relationship did not exist for those without ADHD. The results of the t -tests revealed that individuals with ADHD engage in slightly less maintenance for F2F ($t [140] = .28, p > .05$) and texting ($t [141] = .13, p > .05$), but this difference is not statistically significant compared to those without ADHD. Therefore, Hypothesis 2 is not supported.

Hypothesis 3 stated that maintenance mediates the association between ADHD and quality. A mediation analysis used PROCESS Model 4 with quality (i.e., relational satisfaction) as the outcome variable, ADHD symptoms as the predictor variable, and F2F maintenance as the mediator. Variables were mean centered, and age, gender, and ethnicity were covariates, and results are in Table 3 and Figure 2. In support of Hypothesis 3, ADHD symptoms indirectly influenced perceived relational satisfaction through its effect on F2F maintenance. Table 4 shows

that participants with more ADHD symptoms had less F2F maintenance than those with fewer ADHD symptoms ($a = -.18$), and participants with more maintenance also perceived more satisfaction ($b = .74$). Evidence of an indirect effect of ADHD symptoms on satisfaction through F2F maintenance occurred using a bootstrap confidence interval for the indirect effect ($ab = -.15$); based on 5,000 bootstrap samples, the confidence interval was entirely below zero (-.31 to -.006). Therefore, ADHD symptoms are indirectly associated with lower relational satisfaction through F2F maintenance.

Table 4. Model coefficients for Hypothesis 3 using ADHD symptoms and F2F maintenance

Predictor	Outcome						
	F2F Maintenance (M)			Satisfaction (Y)			
	Coeff.	SE	p		Coeff.	SE	p
ADHD Symptoms (X)	a -.18	.07	.01	c'	-.11	.06	.05
F2F Maintenance (M)	-			b	.74	.07	.00
Constant	i_M 7.11	.46	.00	i_Y	1.95	.61	.00
	$R = .31$			$R = .71$			
	$F(5, 128) = 2.65, p < .05$			$F(6, 127) = 22.00, p < .05$			

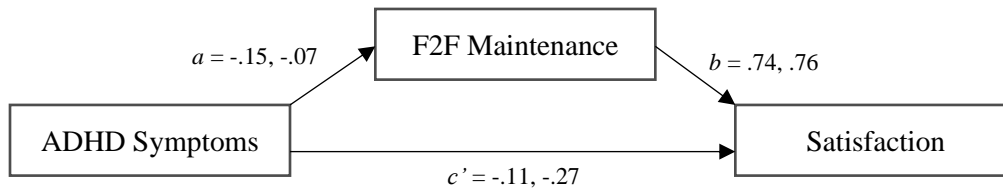
c' refers to the direct effect ($X \rightarrow Y$) while holding M constant.

Another mediation used ADHD diagnosis as the predictor variable. Table 5 shows that participants with ADHD had less F2F maintenance than those without ADHD ($a = -.07$), and participants with more maintenance also perceived more satisfaction ($b = .76$). However, there was no evidence of an indirect effect of ADHD diagnosis on satisfaction through F2F maintenance using a bootstrap confidence interval for the indirect effect ($ab = -.27$) that included zero (-.32 to .18) based on 5,000 bootstrap samples. Therefore, Hypothesis 3 receives only partial support since the mediation was significant for ADHD symptoms but not for ADHD diagnosis.

Table 5. Model coefficients for Hypothesis 3 using ADHD diagnosis and F2F maintenance

Predictor	Outcome							
	F2F Maintenance (M)			Satisfaction (Y)				
	Coeff.	SE	p	Coeff.	SE	p		
ADHD Diagnosis (X)	<i>a</i>	-.07	.15	.66	<i>c'</i>	-.27	.11	.02
F2F Maintenance (M)	-				<i>b</i>	.76	.07	.00
Constant	<i>i_M</i>	6.50	.39	.00	<i>i_Y</i>	1.52	.53	.05
		<i>R</i> = .23				<i>R</i> = .72		
		<i>F</i> (5, 128) = 1.42, <i>p</i> < .05				<i>F</i> (6, 127) = 22.76, <i>p</i> < .05		

Figure 2. Mediation model for Hypothesis 3



Note. Coefficients are reported first for ADHD symptoms and then for ADHD diagnosis.

The same mediation was conducted again for both ADHD symptoms and ADHD diagnosis using texting maintenance as the mediator, but these models did not have significant indirect effects.

Table 6. Model coefficients for Hypothesis 3 using ADHD symptoms and texting maintenance

Predictor	Outcome							
	Texting Maintenance (M)			Satisfaction (Y)				
	Coeff.	SE	p	Coeff.	SE	p		
ADHD Symptoms (X)	<i>a</i>	-.08	.10	.44	<i>c'</i>	-.17	.08	.02
Texting Maintenance (M)	-				<i>b</i>	.51	.07	.00
Constant	<i>i_M</i>	5.00	.62	.00	<i>i_Y</i>	3.98	.62	.00
		<i>R</i> = .24				<i>R</i> = .59		
		<i>F</i> (5, 129) = 1.54, <i>p</i> > .05				<i>F</i> (6, 128) = 11.36, <i>p</i> > .05		

Table 7. Model coefficients for Hypothesis 3 using ADHD diagnosis and texting maintenance

Predictor	Outcome							
	Texting Maintenance (M)			Satisfaction (Y)				
	Coeff.	SE	p	Coeff.	SE	p		
ADHD Diagnosis (X)	<i>a</i>	-.08	.20	.70	<i>c'</i>	-.19	.15	.22
Texting Maintenance (M)	-				<i>b</i>	.52	.07	.00
Constant	<i>i_M</i>	5.73	.51	.00	<i>i_Y</i>	3.34	.56	.00
		<i>R</i> = .23				<i>R</i> = .57		
		<i>F</i> (5, 129) = 1.45, <i>p</i> > .05				<i>F</i> (6, 128) = 10.45, <i>p</i> > .05		

Hypothesis 4 stated that individuals with ADHD use CTs more often than people without ADHD. Participants diagnosed with ADHD indicated that they spent more time using F2F ($M = 1.79$, $SD = 1.29$, $t [158] = 2.08$, $p < .05$) and less time using video chat ($M = 3.79$, $SD = 1.62$) than did participants who had not been diagnosed with ADHD (F2F: $M = 1.39$, $SD = 1.05$; video chat: $M = 4.44$, $SD = 1.28$, $t [158] = 2.82$, $p < .05$). The results of all significant and non-significant t -tests are reported in Table 8. Therefore, Hypothesis 4 is not supported since individuals with ADHD communicate more F2F and less through video chat.

Table 8. t -tests for channel use differences between individuals with and without ADHD

	ADHD Symptoms (r)	w/ ADHD $M(SD)$	w/o ADHD $M(SD)$	t	df
F2F	.19*	1.79(1.29)	1.39(1.05)	2.08*	144
Video Chat	-.23**	3.79(1.62)	4.44(1.28)	2.8*	144
Phone Calls	.13	3.11(1.11)	3.04(1.04)	0.39	144
Texting	-.08	2.27(.93)	2.38(.90)	0.78	144
Email	.16*	5.09(.92)	5.02(.94)	0.46	144
Social Networking Sites	-.08	4.96(1.04)	4.72(1.23)	1.26	144

*. Significant at the 0.05 level (2-tailed).

**. Significant at the 0.01 level (2-tailed).

Hypothesis 5 stated that channel use is positively associated with perceived richness. F2F channel use is positively and significantly correlated with F2F richness for individuals with ADHD ($r = .40$) and without ADHD ($r = .49$). Texting channel use is also positively and significantly correlated with texting richness for individuals with ADHD ($r = .56$) and without ADHD ($r = .51$). Thus, Hypothesis 5 is supported.

Hypothesis 6 stated that richness is positively associated with maintenance. F2F richness is positively and significantly correlated with F2F maintenance for individuals with ADHD ($r = .50$) and without ADHD ($r = .32$). Texting richness is positively and significantly correlated

with both F2F and texting maintenance for individuals ADHD ($r = .50, r = .53$) and without ADHD ($r = .34, r = .47$), respectively. Therefore, Hypothesis 6 is also supported.

Mediations

A total of four serial mediation models then tested the entire model using SPSS PROCESS Model 6 with three mediators. All models used satisfaction as the outcome variable. The first model used ADHD symptoms as the predictor variable with F2F channel use, F2F richness, and F2F maintenance as mediators. However, there was no evidence of an indirect effect on satisfaction using a bootstrap confidence interval based on 5,000 bootstrap samples that crossed zero (-.04 to .00). Table 9 provides the model coefficients.

Table 9. Model coefficients mediation using ADHD symptoms and F2F

Predictor	Outcome															
	F2F Channel Use (M_1)			F2F Richness (M_2)			F2F Maintenance (M_3)			Satisfaction (Y)						
	Coeff.	SE	p	Coeff.	SE	p	Coeff.	SE	p	Coeff.	SE	p				
ADHD Symptoms (X)	a_1	-.13	.05	.01	a_2	-.22	.07	.00	a_3	-.09	.07	.25	c'	-.09	.06	.17
F2F Channel Use (M_1)	-	-	-	-	d_{21}	.76	.12	.00	d_{31}	.46	.15	.00	b_1	.30	.13	.03
F2F Richness (M_2)	-	-	-	-	-	-	-	-	d_{32}	.20	.09	.04	b_2	-.02	-.27	.79
F2F Maintenance (M_3)	-	-	-	-	-	-	-	-	-	-	-	-	b_3	.67	.08	.00
Constant	i_{M1}	5.46	.30	.00	i_{M2}	3.10	.38	.00	i_{M3}	2.38	1.07	.03	i_Y	.55	.72	.45
		$R = .30$				$R = .59$				$R = .53$				$R = .73$		
		$F(5, 122) = 2.49, p < .05$				$F(6, 121) = 10.57, p < .05$				$F(7, 120) = 6.53, p < .05$				$F(8, 119) = 16.81, p < .05$		

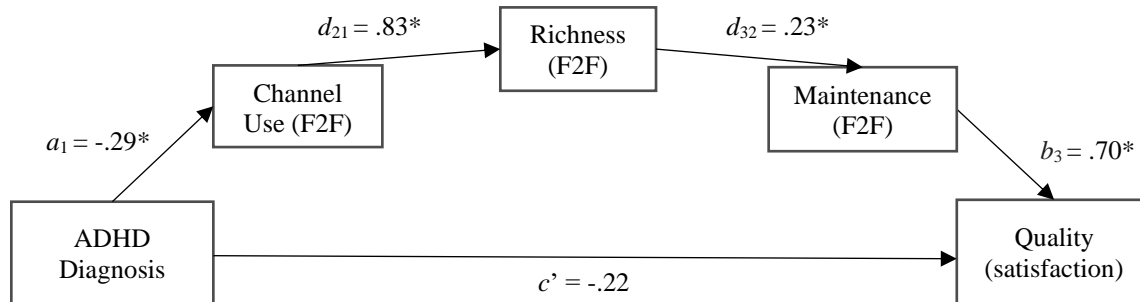
The second model used ADHD diagnosis as the predictor variable with F2F channel use, F2F richness, and F2F maintenance as mediators. The model demonstrated evidence of an indirect effect on satisfaction using a bootstrap confidence interval based on 5,000 bootstrap samples that did not cross zero (-.11 to -.01). Therefore, ADHD diagnosis affects relational

satisfaction indirectly through F2F channel use, richness, and maintenance. Table 10 provides the model coefficients, and Figure 3 presents the mediation model.

Table 10. Model coefficients mediation using ADHD diagnosis and F2F

Predictor	Outcome															
	F2F Channel Use (M ₁)			F2F Richness (M ₂)			F2F Maintenance (M ₃)			Satisfaction (Y)						
	Coeff.	SE	p	Coeff.	SE	p	Coeff.	SE	p	Coeff.	SE	p				
ADHD Diagnosis (X)	a ₁	-.29	.10	.03	a ₂	-.10	.14	.50	a ₃	.14	.14	.32	c'	-.22	.12	.07
F2F Channel Use (M ₁)	-	-	-	-	d ₂₁	.83	.13	.00	d ₃₁	.50	.15	.00	b ₁	.25	.13	.06
F2F Richness (M ₂)	-	-	-	-	-	-	-	-	d ₃₂	.23	.09	.01	b ₂	-.01	.08	.95
F2F Maintenance (M ₃)	-	-	-	-	-	-	-	-	-	-	-	-	b ₃	.70	.08	.00
Constant	i _{M1}	5.07	.24	.00	i _{M2}	2.23	.75	.00	i _{M3}	2.49	.77	.00	i _Y	.68	.69	.33
		R = .33				R = .54				R = .52				R = .73		
		F (5, 122) = 2.90,				F (6, 121) = 8.32,				F (7, 120) = 6.46,				F (8, 119) = 17.15,		
		p < .05				p < .05				p < .05				p < .05		

Figure 3. Model diagram for serial multiple mediator model using ADHD diagnosis and F2F



The third model used ADHD symptoms as the predictor variable with texting channel use, texting richness, and texting maintenance as mediators. However, there was no evidence of an indirect effect on satisfaction using a bootstrap confidence interval based on 5,000 bootstrap samples that crossed zero (-.02 to .02). Table 11 provides the model coefficients.

Table 11. Model coefficients mediation using ADHD symptoms and texting

Predictor	Outcome															
	Texting Channel Use (M_1)				Texting Richness (M_2)				Texting Maintenance (M_3)				Satisfaction (Y)			
		Coeff.	SE	p		Coeff.	SE	p		Coeff.	SE	p	c'	Coeff.	SE	p
ADHD Symptoms (X)	a_1	.00	.07	.96	a_2	-.02	.09	.81	a_3	-.08	.09	.34	c'	-.11	.07	.14
Texting Channel Use (M_1)	-	-	-	-	d_{21}	.86	.11	.00	d_{31}	.62	.14	.00	b_1	-.04	.13	.77
Texting Richness (M_2)	-	-	-	-	-	-	-	-	d_{32}	.23	.09	.01	b_2	.06	.08	.45
Texting Maintenance (M_3)	-	-	-	-	-	-	-	-	-	-	-	-	b_3	.44	.08	.00
Constant	i_{M1}	4.11	.44	.00	i_{M2}	.68	.71	.34	i_{M3}	2.50	.71	.00	i_Y	4.08	.64	.00
		$R = .19$				$R = .58$				$R = .61$				$R = .57$		
		$F(5, 119) = .89, p > .05$				$F(6, 118) = 10.10, p < .05$				$F(7, 117) = 9.71, p < .05$				$F(8, 116) = 7.15, p < .05$		

The fourth model used ADHD diagnosis as the predictor variable with texting channel use, texting richness, and texting maintenance as mediators. However, there was no evidence of an indirect effect on satisfaction using a bootstrap confidence interval based on 5,000 bootstrap samples that crossed zero (-.04 to .03). Table 12 provides the model coefficients.

Table 12. Model coefficients mediation using ADHD diagnosis and texting

Predictor	Outcome															
	Texting Channel Use (M_1)				Texting Richness (M_2)				Texting Maintenance (M_3)				Satisfaction (Y)			
		Coeff.	SE	p		Coeff.	SE	p		Coeff.	SE	p	c'	Coeff.	SE	p
ADHD Diagnosis (X)	a_1	-.02	.36	.00	a_2	.09	.17	.60	a_3	-.11	.17	.53	c'	-.06	.15	.67
Texting Channel Use (M_1)	-	-	-	-	d_{21}	.86	.11	.00	d_{31}	.61	.14	.00	b_1	-.05	.13	.71
Texting Richness (M_2)	-	-	-	-	-	-	-	-	d_{32}	.24	.09	.01	b_2	.06	.08	.43
Texting Maintenance (M_3)	-	-	-	-	-	-	-	-	-	-	-	-	b_3	.45	.08	.00
Constant	i_{M1}	4.13	.36	.00	i_{M2}	.57	.64	.37	i_{M3}	2.24	.64	.00	i_Y	3.70	.58	.00
		$R = .19$				$R = .58$				$R = .60$				$R = .56$		
		$F(5, 119) = .89, p > .05$				$F(6, 118) = 10.15, p < .05$				$F(7, 117) = 9.60, p < .05$				$F(8, 116) = 6.78, p < .05$		

Longitudinal Correlations

For Time 2, 67% of the original participants were retained ($N = 100$). Individuals with ADHD completed fewer surveys at Time 2 ($n = 22$, 37% retention) compared to those without ADHD ($n = 78$, 87% retention). Correlations between study variables at Time 2 are reported for all individuals, individuals with ADHD, and individuals without ADHD in Tables 13, 14, and 15, respectively.

Table 13. Correlations between study variables at Time 2

	2	3	4	5	6	7	8	9	10	11
1. ADHD y/n	.62**	-0.02	-0.04	-0.07	-0.07	-0.13	0.07	-0.11	-0.06	-0.06
2. ADHD Symptoms		-0.09	-0.04	-0.06	-0.05	-.20*	0.18	-0.15	-0.08	-0.13
3. Maintenance F2F			.74**	.46**	.28**	.54**	0.07	.71**	.63**	.73**
4. Maintenance Texting				.29**	.45**	.24*	.28**	.55**	.47**	.52**
5. Channel Use F2F					.53**	.72**	0.14	.53**	.56**	.56**
6. Channel Use Texting						.35**	.42**	.35**	.36**	.22*
7. Richness F2F							-0.15	.57**	.60**	.65**
8. Richness Texting								-0.00	-0.01	0.03
9. Satisfaction									.89**	.81**
10. Closeness										
11. Intimacy										

*. Correlation is significant at the 0.05 level (2-tailed).

** . Correlation is significant at the 0.01 level (2-tailed).

Table 14. Correlations for individuals with ADHD for Time 2

	2	3	4	5	6	7	8	9	10
1. ADHD Symptoms	-0.29	-0.31	-0.24	-0.37	-0.28	0.12	-0.30	-0.02	-0.16
2. Maintenance F2F		.75**	0.41	0.28	.47*	0.18	.82**	.67**	.78**
3. Maintenance Texting			0.02	0.22	0.06	0.18	.52*	0.27	0.38
4. Channel Use F2F				.66**	.85**	0.38	.46*	.48*	.51*
5. Channel Use Texting					.61**	.42*	0.20	0.19	0.08
6. Richness F2F						0.05	0.04	0.00	0.11
7. Richness Texting							.49*	.58**	.56**
8. Satisfaction								.78**	.72**
9. Closeness									.78**
10. Intimacy									

*. Correlation is significant at the 0.05 level (2-tailed).

** . Correlation is significant at the 0.01 level (2-tailed).

Table 15. Correlations for Individuals without ADHD for Time 2

	2	3	4	5	6	7	8	9	10
1. ADHD Symptoms	-0.07	0.03	-0.05	-0.01	-0.19	0.16	-0.08	-0.07	-0.11
2. Maintenance F2F		.73**	.50**	.28*	.58**	0.03	.67**	.63**	.72**
3. Maintenance Texting			.43**	.55**	.31**	.31**	.56**	.52**	.55**
4. Channel Use F2F				.45**	.62**	0.04	.58**	.62**	.60**
5. Channel Use Texting					0.19	.44**	.40**	.44**	.29*
6. Richness F2F						-.23*	-0.01	-0.01	0.01
7. Richness Texting							.60**	.63**	.70**
8. Satisfaction								.93**	.84**
9. Closeness									.87**
10. Intimacy									

*. Correlation is significant at the 0.05 level (2-tailed).

** . Correlation is significant at the 0.01 level (2-tailed).

All participants who completed the first survey were able to complete the last survey. For Time 3, 68% of the original participants were retained ($N = 101$). Individuals with ADHD completed fewer surveys at time three ($n = 32$, 54% retention) compared to those without ADHD ($n = 69$, 76% retention). A total of 79 participants with ($n = 18$) and without ($n = 61$) ADHD completed all three surveys. Correlations between study variables at Time 3 are reported for all individuals, individuals with ADHD, and individuals without ADHD in Tables 16, 17, and 18, respectively.

Table 16. Correlations between study variables at Time 3

	2	3	4	5	6	7	8	9	10	11
1. ADHD y/n	.62**	-0.14	-.20*	-0.16	0.08	-.20*	0.19	-.21*	-0.04	-0.11
2. ADHD Symptoms		-0.19	-0.15	-.25*	0.14	-.35**	.27**	-.27**	-0.13	-.22*
3. Maintenance F2F			.75**	.66**	.33**	.57**	0.16	.74**	.82**	.80**
4. Maintenance Texting				.41**	.59**	.38**	.31**	.56**	.61**	.60**
5. Channel Use F2F					.27**	.70**	-0.05	.59**	.75**	.70**
6. Channel Use Texting						.26**	.69**	.31**	.34**	.34**
7. Richness F2F							-0.09	.52**	.67**	.70**
8. Richness Texting								0.06	0.10	0.06
9. Satisfaction									.85**	.87**
10. Closeness										.94**
11. Intimacy										

*. Correlation is significant at the 0.05 level (2-tailed).

** . Correlation is significant at the 0.01 level (2-tailed).

Table 17. Correlations for Individuals with ADHD for Time 3

	2	3	4	5	6	7	8	9	10
1. ADHD Symptoms	-0.34	-0.23	-.60**	-0.00	-.45**	0.17	-.41*	-.40*	-0.34
2. Maintenance F2F		.73**	.60**	0.32	.65**	0.24	.83**	.86**	.86**
3. Maintenance Texting			0.32	.65**	.46**	.44*	.74**	.66**	.68**
4. Channel Use F2F				0.16	.65**	-0.17	.58**	.73**	.64**
5. Channel Use Texting					.36*	.68**	.46**	.40*	.37*
6. Richness F2F						-0.00	.68**	.85**	.78**
7. Richness Texting							0.21	0.13	0.08
8. Satisfaction								.90**	.91**
9. Closeness									.95**
10. Intimacy									

*. Correlation is significant at the 0.05 level (2-tailed).

** . Correlation is significant at the 0.01 level (2-tailed).

Table 18. Correlations for Individuals without ADHD for Time 3

	2	3	4	5	6	7	8	9	10
1. ADHD Symptoms	-0.04	0.04	-0.02	0.20	-.24*	0.22	-0.10	-0.05	-0.13
2. Maintenance F2F		.75**	.70**	.37**	.49**	0.15	.67**	.81**	.76**
3. Maintenance Texting			.47**	.59**	.25*	.30*	.36**	.56**	.51**
4. Channel Use F2F				.45**	.73**	0.10	.59**	.77**	.76**
5. Channel Use Texting					0.21	.71**	0.19	.32**	.34**
6. Richness F2F						-0.09	.36**	.58**	.63**
7. Richness Texting							0.03	0.10	0.08
8. Satisfaction								.85**	.84**
9. Closeness									.94**
10. Intimacy									

*. Correlation is significant at the 0.05 level (2-tailed).

** . Correlation is significant at the 0.01 level (2-tailed).

Table 19. Means and standard deviations for study variables

	All Participants			With ADHD			Without ADHD		
	<i>M(SD)</i> T1	<i>M(SD)</i> T2	<i>M(SD)</i> T3	<i>M(SD)</i> T1	<i>M(SD)</i> T2	<i>M(SD)</i> T3	<i>M(SD)</i> T1	<i>M(SD)</i> T2	<i>M(SD)</i> T3
1. ADHD Symptoms	2.99(.96)	--	--	3.74(.59)	--	--	2.52(.83)	--	--
2. Maintenance F2F	5.76(.79)	5.62(.97)	5.62(1.07)	5.73(.89)	5.59(1.02)	5.40(1.8)	5.78(.75)	5.63(.96)	5.72(1.01)
3. Maintenance Texting	5.11(1.03)	5.05(.99)	5.10(1.00)	5.09(1.01)	4.98(.96)	4.80(1.09)	5.12(1.05)	5.07(1.00)	5.24(.93)
4. Channel Use F2F	4.59(.53)	5.00(.48)	5.40(.61)	4.43(.63)	4.94(.97)	5.26(.78)	4.67(.45)	5.02(.40)	5.47(.51)
5. Channel Use Texting	3.93(.73)	4.74(.59)	4.73(.67)	3.98(.78)	4.67(.73)	4.80(.87)	3.90(.72)	4.76(.55)	4.70(.54)
6. Richness F2F	6.81(.83)	6.21(.72)	6.44(.73)	5.61(1.00)	6.04(.91)	6.23(.82)	5.90(.72)	6.26(.64)	6.54(.66)
7. Richness Texting	4.32(1.03)	4.01(1.02)	4.18(1.01)	4.42(1.14)	4.14(1.00)	4.45(1.09)	4.23(.98)	3.98(1.02)	4.05(.96)
8. Satisfaction	6.21(.93)	6.22(.88)	6.16(1.14)	6.08(1.00)	6.04(.93)	5.82(1.35)	6.28(.89)	6.27(.86)	6.33(.99)
9. Closeness	6.22(.81)	6.26(.76)	6.17(.95)	6.18(.86)	6.18(.71)	6.12(.97)	6.24(.79)	6.29(.78)	6.20(.95)
10. Intimacy	6.23(.78)	6.19(.85)	6.13(.92)	6.23(.72)	6.10(.95)	5.98(1.01)	6.23(.81)	6.21(.83)	6.20(.87)

Intraclass Correlation Coefficients

The intraclass correlation coefficients determined the amount of agreement between timepoints and how consistent they are relative to one another. The 95% confidence intervals (CI) and each ICC are in Table 20. The high ICCs (above .70) indicate that there is a lot of agreement for most variables (e.g., maintenance F2F, maintenance texting, richness F2F, richness texting, satisfaction, closeness, and intimacy). Thus, the data violate the independence assumption, and further multilevel modeling is needed since the similarities are greater than what would be expected by random chance (Arroyo et al., 2014; Peugh, 2010).

Table 20. Intraclass correlation coefficients

	ICC	95% CI
Maintenance F2F	.91	.85–.94
Maintenance Texting	.92	.88–.94
Channel Use F2F	.58	.03–.81
Channel Use Texting	.58	.08–.79
Richness F2F	.87	.57–.94
Richness Texting	.79	.69–.86
Satisfaction	.86	.79–.90
Closeness	.89	.84–.93
Intimacy	.93	.89–.95

Note: All ICCs were significant, $p < .05$.

Unconditional Growth Curve Analysis

Unconditional growth curve models were then used to examine how each variable changed over time. The results revealed that time was positively related to F2F and texting channel use, which suggests that these variables increase over time. The results showed that time was unrelated to F2F maintenance, texting maintenance, F2F richness, texting richness, or satisfaction, which suggests that these variables do not consistently change over time. The fixed effects are reported in Table 21.

Table 21. Fixed effects for unconditional growth curve analysis

	Fixed Effects		
	<i>b</i>	<i>SE</i>	<i>p</i>
Maintenance F2F	-.07	.06	.25
Maintenance Texting	-.02	.07	.81
Channel Use F2F	.41	.03	.00
Channel Use Texting	.42	.04	.00
Richness F2F	.20	.08	.02
Richness Texting	.05	.08	.58
Satisfaction	-.02	.06	.78

Multilevel Mediations

Four parallel multilevel mediations were conducted, the first using ADHD symptoms as the independent variable (*X*), F2F channel use, F2F richness, and F2F maintenance as mediators (*M*), and satisfaction as the dependent variable (*Y*). The second model used ADHD symptoms as the independent variable (*X*), texting channel use, texting richness, and texting maintenance as mediators (*M*), and satisfaction as the dependent variable (*Y*). In all four analyses, between and within-person direct and indirect effects were estimated using a 95% confidence interval, 10,000 Monte Carlo samples, and a diagonal covariance matrix. The SPSS syntax used is in Appendix C. The results from each model are depicted in Tables 22, 23, 24, and 25, respectively. Significant effects represent an increase or decrease in satisfaction.

In the ADHD symptoms and texting model, the between-person effects for the direct effect were significant, which indicates that over the course of the study, individuals who reported more ADHD symptoms than average also reported less satisfaction. There were also significant within and between effects for the *b* path between maintenance and satisfaction. The between effects indicate that people who engaged in more maintenance than the average person were more satisfied, and the within effects indicate that when a person engaged in more maintenance than they usually did, they were more satisfied than they typically were.

The model using ADHD symptoms and F2F had significant between-person effects for the *a* path between ADHD symptoms and channel use, which indicates that when individuals reported more ADHD symptoms than average, they reported less F2F channel use over the course of the study. Significant between-person effects existed between ADHD symptoms and F2F maintenance, which indicates that when, over the course of the study, individuals who reported more ADHD symptoms than average reported more F2F maintenance. In the F2F model, significant within-person effects were present for maintenance, indicating that individuals who reported more ADHD symptoms reported more F2F maintenance. The F2F model also had significant within and between effects for the *b* path between maintenance and satisfaction. The between effects indicate that people who engaged in more maintenance than the average person were more satisfied, and the within effects indicate that when a person engaged in more maintenance than they usually did, they were more satisfied than they typically were. The F2F model had significant between effects between channel use and satisfaction, indicating that individuals with more F2F channel use had more satisfaction. Finally, the indirect effects in the *ab* path showed significant between effects in the F2F model for channel use and maintenance. The indirect effects showed that ADHD symptoms were significantly associated

Table 22. Multilevel mediation results predicting satisfaction from ADHD symptoms and F2F communication

Path	F2F Channel Use				F2F Richness			F2F Maintenance		
	$X \rightarrow Y$ c'	$X \rightarrow M$ a_1	$M \rightarrow Y$ b_1	$X \rightarrow M \rightarrow Y$ ab_1	$X \rightarrow M$ a_1	$M \rightarrow Y$ b_1	$X \rightarrow M \rightarrow Y$ ab_1	$X \rightarrow M$ a_1	$M \rightarrow Y$ b_1	$X \rightarrow M \rightarrow Y$ ab_1
Within effects	-.22(.20)	-.09(.23)	.11(.07)	--	.07(.54)	-.01(.02)	--	.02(.39)	.74*(.08)	--
Between effects	-.06(.05)	-.14*(.04)	.34*(.11)	-.05*(.02)	-.04(.07)	-.03(.08)	.00(.01)	-.15*(.05)	.64*(.06)	-.10*(.04)

Table 23. Multilevel mediation results predicting satisfaction from ADHD symptoms and texting communication

Path	Texting Channel Use				Texting Richness			Texting Maintenance		
	$X \rightarrow Y$ c'	$X \rightarrow M$ a_1	$M \rightarrow Y$ b_1	$X \rightarrow M \rightarrow Y$ ab_1	$X \rightarrow M$ a_1	$M \rightarrow Y$ b_1	$X \rightarrow M \rightarrow Y$ ab_1	$X \rightarrow M$ a_1	$M \rightarrow Y$ b_1	$X \rightarrow M \rightarrow Y$ ab_1
Within effects	-.38(.20)	-.18(.33)	-.02(.07)	--	-.25(.54)	.01(.03)	--	.42(.43)	.38*(.08)	--
Between effects	-.16*(.06)	-.01(.05)	-.09(.13)	-.00(.01)	-.02(.08)	.13(.10)	-.00(.01)	-.07(.06)	.54*(.08)	-.04(.03)

Table 24. Multilevel mediation results predicting satisfaction from ADHD diagnosis and F2F communication

Path	F2F Channel Use				F2F Richness			F2F Maintenance		
	$X \rightarrow Y$ c'	$X \rightarrow M$ a_1	$M \rightarrow Y$ b_1	$X \rightarrow M \rightarrow Y$ ab_1	$X \rightarrow M$ a_1	$M \rightarrow Y$ b_1	$X \rightarrow M \rightarrow Y$ ab_1	$X \rightarrow M$ a_1	$M \rightarrow Y$ b_1	$X \rightarrow M \rightarrow Y$ ab_1
Within effects	.21(.41)	.48(.47)	.11(.07)	--	-1.00(1.12)	-.01(.02)	--	-.46(.81)	.74*(.08)	--
Between effects	-.13(.10)	-.26*(.08)	.32*(.11)	-.08*(.01)	.02(.15)	-.03(.08)	.00(.01)	-.15*(.11)	.66*(.06)	-.10(.07)

Table 25. Multilevel mediation results predicting satisfaction from ADHD diagnosis and texting communication

Path	Texting Channel Use				Texting Richness			Texting Maintenance		
	$X \rightarrow Y$ c'	$X \rightarrow M$ a_1	$M \rightarrow Y$ b_1	$X \rightarrow M \rightarrow Y$ ab_1	$X \rightarrow M$ a_1	$M \rightarrow Y$ b_1	$X \rightarrow M \rightarrow Y$ ab_1	$X \rightarrow M$ a_1	$M \rightarrow Y$ b_1	$X \rightarrow M \rightarrow Y$ ab_1
Within effects	.13(.41)	.69(.58)	-.01(.07)	--	.48(1.12)	.00(.03)	--	-.55(.88)	.35*(.08)	--
Between effects	-.22(.13)	-.03(.11)	-.05(.03)	.00(.02)	-.06(.15)	.13(.10)	-.01(.03)	-.19(.12)	.52*(.08)	-.10(.06)

with satisfaction through channel use and maintenance. This indicates that individuals with more ADHD symptoms experienced less satisfaction because they used F2F channels less and had less F2F maintenance.

In the ADHD diagnosis and texting model, there were significant within and between effects for the b path between maintenance and satisfaction. The between effects indicate that people who engaged in more maintenance than the average person were more satisfied, and the within effects indicate that when a person engaged in more maintenance than they usually did, they were more satisfied than they typically were.

The ADHD diagnosis and F2F model had significant between-person effects for the a path between ADHD diagnosis and channel use, which indicates that when individuals reported more ADHD diagnosis than average, they reported less F2F channel use over the course of the study. Significant between-person effects existed between ADHD diagnosis and F2F maintenance, which indicates that when, over the course of the study, individuals who reported more ADHD symptoms than average also reported more F2F maintenance. This model had significant within and between effects for the b path between maintenance and satisfaction. The between effects indicate that people who engaged in more maintenance than the average person were more satisfied, and the within effects indicate that when a person engaged in more maintenance than they usually did, they were more satisfied than they typically were. The model also had significant between effects between channel use and satisfaction, indicating that individuals with more F2F channel use had more satisfaction. Finally, the indirect effects in the ab path showed significant between effects in the F2F model for channel use. The indirect effects showed that ADHD diagnosis was significantly associated with satisfaction through channel use.

This indicates that individuals with ADHD experienced less satisfaction when they used F2F channels less.

The following section interprets these findings and discusses them in terms of their theoretical, practical, and methodological implications.

V. Discussion

The purpose of this study was to examine and compare the maintenance strategies and communication technologies used by individuals with and without ADHD. A better understanding of these relationships provides insight into how individuals with ADHD may improve their relationships and have satisfying relationships. The existing literature on neurodiversity, in general, situates neurodiversity as problematic for relationships and discusses relational challenges that individuals with ADHD face (Bruner et al., 2015; Canu et al., 2014; Eakin et al., 2004; Knies et al., 2021; Rokeach & Wiener, 2018). This study uses a combination of MST and CET to understand how individuals with ADHD use different channels for maintenance to essentially make up for the lower relational quality associated with having ADHD. A longitudinal design examined maintenance channels, channel use, and channel richness in F2F and texting contexts. Participants also reported whether they had ADHD, ADHD symptoms, and measures of relational satisfaction. Participants completed three surveys over six weeks. This dissertation identifies a complimentary use of CET and MST to understand how using multiple channels to maintain relationships improves relational satisfaction. The next section summarizes and interprets the findings from the study.

Interpretation of Findings

Relational Maintenance and Quality

The first hypothesis, using the Time 1 data, predicted a positive association between maintenance and quality. Hypothesis 1 was supported since maintenance was associated with all quality measures for the entire sample as well as for individuals with and without ADHD. The similarity in quality outcomes among all participants is important to note because this association is commonly accepted and almost universal in neurotypical samples, and the association appears

to also hold in neurodiverse ADHD samples. This lack of significant difference in terms of quality (i.e., satisfaction, closeness, or intimacy) compared to individuals without ADHD is consistent with some prior research that compared these differences (e.g., Geiger, 2019; Knies et al., 2021; Rokeach & Wiener, 2018).

The second hypothesis, using the Time 1 data, predicted that individuals with ADHD would engage in more maintenance behaviors than people without ADHD, and this hypothesis did not receive direct support. Individuals with ADHD do not engage in more maintenance than individuals without ADHD. Even though individuals with ADHD experience differences that can make communication more difficult (Baird & Stevenson, 2000), this difference in communicative ability does not appear to transfer to relational maintenance.

The third hypothesis, also using the Time 1 data, predicted that ADHD symptoms would mediate relational quality. The findings showed that F2F maintenance (but not texting maintenance) mediated the relationship between ADHD symptoms (but not ADHD diagnosis) and relational quality. Interestingly, the same mediation was not present when texting maintenance was used as a mediator, which suggests that F2F maintenance is more helpful for the overall quality of relationships compared to mediated maintenance strategies. This finding is consistent with Bruner et al.'s (2015) finding that emotion regulation and hostile relationship conflict (which may refer to maintenance strategies or lack thereof) between ADHD symptoms and relationship quality.

Channel Use and Richness

The fourth hypothesis, which used the Time 1 data, predicted that individuals with ADHD would use CTs more often than people without ADHD. The findings revealed a couple of differences in CT preferences between individuals with and without ADHD, which suggests that

individuals with ADHD adapt to and prefer different types of affordances (e.g., Walther, 2011). These differences also support the idea that individual characteristics influence channel use preferences (Ruppel et al., 2018b). The first difference was that individuals with ADHD use F2F significantly more than individuals without ADHD. Therefore, while text-based communication is more controllable than F2F communication (Ruppel et al., 2018b), individuals with ADHD did not appear to be more comfortable in a text-based environment. Thus, individuals with ADHD did not use more CTs than those without ADHD. Individuals with ADHD might not use more CTs because the lack of non-verbal cues in text-based communication leaves them more open to interpretation, which may make some individuals with ADHD or other neurodiverse qualities uncomfortable. This aligns with Kim's (2018) argument that F2F interactions are important for individuals with ADHD since it best fulfills their desire to be connected to others.

The second difference was that individuals without ADHD use video chat significantly more than individuals with ADHD. This finding is somewhat paradoxical, given that individuals with ADHD prefer F2F interactions, video chat mirrors F2F interactions, and that this study occurred during a time when video chat was very normalized and F2F interactions were scarce. It could be the case that while video calls are richer than text-based communication, they still lack some of the contextual and nonverbal cues that exist in F2F communication. The cues that are present in F2F communication are particularly salient to individuals with ADHD, and this also aligns with Kim's (2018) finding that F2F interactions may be more important for individuals with ADHD.

The fifth hypothesis predicted an association between channel use and perceived richness. F2F channel use is positively and significantly correlated with F2F richness for individuals with ADHD and without ADHD. Texting channel use is positively and significantly

correlated with texting richness for individuals with ADHD and without ADHD. These findings highlight that richer messages are associated with a richer meaning for a specific partner (Carlson & Zmud, 1999).

The last hypothesis predicted that richness would be positively associated with maintenance. F2F richness is positively and significantly correlated with F2F maintenance for individuals with ADHD and without ADHD. Texting richness is positively and significantly correlated with both F2F and texting maintenance for individuals with ADHD and without ADHD. These findings indicate that maintenance simultaneously occurs F2F and via text, which makes sense provided that individuals spend so much time on CTs on relational maintenance (Valkenburg et al., 2016).

Theoretical Implications

Maintenance and Minority Stress

The findings offer several implications for MST, which acknowledges that marginalized individuals in relationships experience stressors that adversely affect relationships (LeBlanc et al., 2015). Ogolsky et al. (2017) added that certain maintenance strategies are needed to offset the added stress of marginalization; however, the findings show that maintenance itself is almost equally important to relational quality for all relationships. That said, it is worth acknowledging that most relationships take place in more than one channel (Parks, 2017). In other words, it is not often the case that couples communicate through just one channel. To this end, the findings highlighted the importance of using more than one channel for maintenance, which provides support for Ogolsky et al.'s assertion that marginalized couples need more maintenance strategies to offset the effects of marginalization. Thus, MST can also be applied to ADHD relationships, and maintenance plays an important role in improving relational quality in these relationships.

Relational maintenance—and the channels used for relational maintenance—have an important role in overcoming the adverse effects of minority stress on relational quality outcomes.

Therefore, measuring maintenance and richness through different channels may be important since the findings differed for F2F and texting.

Finally, based on previous literature that overwhelmingly situates neurodiversity as inherently bad for relationships, this research contributes to a growing body of literature that attempts to explain why people in neurodiverse relationships experience reduced relational quality. Specifically, this study builds on the currently limited understanding of the communication patterns and behaviors that influence relationship quality in neurodiverse relationships. For instance, prior studies examining communication-related behaviors have identified attachment styles (Knies et al., 2021), emotion regulation (Bruner et al., 2015), relationship conflict (Bruner et al., 2015), self-image (Doyle & Molix, 2014), and intimacy (Ben-Naim et al., 2017) mediate the association between ADHD and relationship satisfaction. This study adds at least two important findings to this area of research. First, while maintenance was similar between individuals with and without ADHD, the channels used for maintenance among individuals with ADHD matter and can improve relationship quality. The second finding that adds to this area is that channels and perhaps the affordances of those channels make a difference in the quality of relationships. Thus, it appears as though individuals with and without ADHD still use the same communication patterns and behaviors, but that the difference is how much of them are needed to achieve similar quality levels in neurodiverse and neurotypical relationships. From these findings on attachment, maintenance, and channels, it is likely that other communication patterns and behaviors will also influence relational quality among individuals with ADHD.

Technology Use and Channel Expansion

These findings also offer several implications for CET, which considers individuals' use of channels to enhance communication and relational quality (Carlson & Zmud, 1999; Rains, 2008). According to CET, channel use, richness, and maintenance should mediate relational quality over time, but the findings only showed that ADHD diagnosis affects relational satisfaction indirectly through F2F channel use, richness, and maintenance. The same tests using ADHD symptoms and F2F or texting channel use, richness, and maintenance were not significant, and ADHD diagnosis also did not affect satisfaction through texting channel use, richness, and maintenance. Thus, these findings provide some support for CET in F2F contexts; however, the findings also indicate that CET may not be as applicable to individuals with ADHD. In addition, F2F communication is a channel, but CET does not address or test it as one, so these findings extend CET to F2F communication. This extension is useful because it implies that richness can help understand how people communicate in F2F contexts as well.

The findings show that maintenance through texting and F2F are needed to benefit relational quality in ADHD relationships positively. This finding supports the idea that individuals with ADHD manage their ADHD in a variety of ways, including through various maintenance channels. As expected, this is important since individuals with ADHD process information differently, and using more than one channel for maintenance allows them to adjust their channels for maintenance in such a way that allows them to improve their relational quality.

Finally, this study contributes to the understanding of technology use, specifically in neurodiverse relationships. It is not necessarily the channel or the technology itself that impacts relational outcomes; instead, technology appears to be a mechanism through which individuals can enhance or improve their relationship. This idea is consistent with several other researchers

who discuss the impact of studying affordances and media use. Evans et al. (2017) referred to affordances broadly as a relational structure between the technology and a user that allow for certain behavioral outcomes. In this study, this also appeared to be the case. In this case, the channels provided a mechanism for relational maintenance that positively impacted satisfaction. Thus, the richness of the channel (and the affordances of it) may not be as important since they do not directly impact the relational outcomes. Therefore, researchers should consider the relational outcomes that different channels allow (i.e., maintenance), rather than just the channel itself. This idea is related to and builds on Rabby's (2007) assertion that instead of treating media use as a strategy for maintenance, the role media has in relationship maintenance should also be considered. For instance, this study found that channel, richness perceptions, and F2F and texting maintenance all contributed to relational satisfaction in individuals with ADHD. Thus, F2F as a channel and F2F richness perceptions were important, but in terms of maintenance, both texting and F2F channels work together to improve quality. These differences in the relational outcomes that occur through the specific channels may matter more than just the specific channel used. These particular uses and outcomes of such use are important for understanding their varying effects on neurodiverse relationship quality.

CET and MST as Complimentary Theories in Neurodiverse Relationships

The final research question posited whether these relationships would change over time. According to the intraclass correlations, the study variables were more similar over time than would be expected by chance; F2F and texting channel use were the only variables to significantly change over time. Moreover, the results of the multilevel mediations provided several additional insights. The direct effect revealed that over the course of the study, individuals with more ADHD symptoms reported less satisfaction in the texting model. The

results showed that when individuals reported more ADHD symptoms than average, they reported less F2F channel use and more F2F maintenance over the course of the study. The effects of maintenance were also significant in that individuals with more F2F and texting maintenance had more satisfaction over the course of the study. The indirect effect showed that individuals with more ADHD symptoms experienced less satisfaction when they used F2F channels less and had less F2F maintenance. These findings coincide with CET and MST to the extent that both CET and MST often become more pronounced over time (e.g., problems related to minority stress tend to not merely go away, and individuals get better at communicating over different channels as they gain experience with them).

The findings indicate individuals with more F2F and texting maintenance had more satisfaction over the course of the study. Therefore, individuals with ADHD may be able to alleviate some of these challenges to relationships by using different channels for relationship maintenance. The proposed mediation model integrates MST and CET by situating individuals' desire to maintain their marginalized or stigmatized relationships and manage their ADHD as an antecedent of richness, channel use, and maintenance. However, the results showed that individuals with ADHD, or with more ADHD symptoms, can enhance their relationships by using multiple channels for relational maintenance. This finding is important because most prior research on the topic situates ADHD as being bad for relationships (i.e., associated with low relational quality, less effective communication, and insecure attachment orientations; Bruner et al., 2015; Canu et al., 2014; Eakin et al., 2004; Knies et al., 2021; Rokeach & Wiener, 2018), and the findings show that this does not need to be the case.

Thus, the findings provide support for an integrated view of MST and CET in ADHD relationships. Because marginalized couples—or in the case of this study, couples where one of

the partners has ADHD—experience stressors that affect their relationship (LeBlanc et al., 2015), they require more maintenance on more than one channel (i.e., F2F and texting maintenance). This finding is consistent with Lehmiller and Agnew’s (2006) assertion that people in marginalized relationships make up, or compensate for, lower quality measures in some way. It is also consistent with Ogolsky et al.’s (2017) claim that more relational maintenance is needed and clarifies that more relational maintenance helps offset what might otherwise be lower relational quality in these relationships.

Provided that individuals with ADHD in relationships have a need for increased maintenance (Ogolsky et al., 2017) and that individuals use more than one channel to satisfy relational needs (Dutta-Bergman, 2004), individuals will expand their use of channels (Carlson & Zmud, 1999, Rains, 2008), which in turn, leads to more relational quality. Thus, as individuals with ADHD get better by using multiple channels for maintenance, their relational quality improves. Moreover, given the symptoms that individuals with ADHD experience, it makes sense that using forms of maintenance that help them pay attention to and remember conversations would improve their relationship satisfaction. While MST and CET are not competing theories, they are complementary theories for maintenance in neurodiverse relationships. More specifically, this extends MST and CET by looking at the channels for relational maintenance and how both are needed (at least when an individual has ADHD or its symptoms).

Practical Implications

The findings offer valuable insights for individuals navigating ADHD relationships. The findings provide a more optimistic outlook for relationship quality in these relationships. Further, the findings indicate that people navigating ADHD relationships should use multiple channels for

relationship maintenance. Specifically, the findings indicate that relationship quality is better among individuals with more ADHD symptoms and an ADHD diagnosis when individuals perceive less F2F richness, use F2F communication more, and maintain their relationships through both texting and F2F channels. In other words, when individuals with ADHD have low relational quality, they use F2F communication less, perceive it as less rich, and use fewer maintenance strategies. This implies that if individuals with ADHD used F2F communication more, they might be more satisfied with their relationships.

Methodological Implications

Prior studies have examined the effect of ADHD using the ADHD symptoms measure and through those who indicated an ADHD diagnosis. This study went beyond just that to also examine ADHD symptoms and ADHD diagnosis. Aside from Hypothesis 3, most of the other findings that used ADHD symptoms and ADHD diagnosis were comparable. Prior research often focuses solely on individuals with symptoms of a condition, rather than a diagnosis, which may not accurately measure the range of differences (i.e., a group of individuals without ADHD will have less variance than a group of individuals with and without ADHD). While recruiting individuals with the diagnosis may be more difficult, it is helpful for the overall reliability of the scale. For the ADHD symptoms measure to work, there needs to be enough variance in participants who report high and low symptom levels, so for this reason, it is still helpful to recruit individuals who have ADHD to help ensure enough variance in that scale exists. Therefore, recruiting participants who have ADHD—or even those who think they have ADHD without an official diagnosis—can be beneficial.

Limitations

While this study provided a greater understanding of maintenance in neurodiverse relationships, some limitations to this study exist. First, this study focused primarily on individuals who had ADHD. While this is a significant and large subset of neurodiversity, there are other neurodiverse conditions that have symptoms that are much different from the symptoms of ADHD. For example, individuals with Tourette Syndrome have very different symptoms that can be more noticeable physically compared to ADHD, but many symptoms of Autism and even generalized anxiety disorders overlap with those of ADHD. Therefore, while all forms of neurodiversity currently experience some sort of stigma, the actual conditions and specific symptoms will likely also impact communication patterns in relationships. The difference between symptoms and diagnosis is particularly salient to note, given that neurodiversity and mental health conditions are becoming more normalized in society. However, even though the stigma may become more normalized, the symptoms of the conditions and how those influence relationships will still be meaningful for researchers to understand communication effects in the future.

Second, recruitment and retention of both individuals with and without ADHD was a challenge in this study. Recruitment began toward the end of the fall semester and continued over the holidays through mid-January. For recruitment, this is not ideal since this timeframe reflects when individuals are usually either very busy with work or away from their computers on break. Relatedly, this study did not provide an incentive to those who took the survey over social media, which could have helped retain more of those participants. While recruitment and retention may be common issues, particularly in a pandemic, future studies should consider other ways

researchers may more effectively recruit and retain participants from understudied, marginalized populations.

Moreover, retention and recruitment of individuals with ADHD were particularly difficult. Only about 30% of the individuals with ADHD completed all three surveys, whereas about 68% of individuals without ADHD completed all three surveys. This points to the difficulty in accessing underrepresented populations, and recruitment problems will likely be a continued issue that researchers face; however, as neurodiversity research becomes more common and as the stigma of associating as being neurodiverse lessens, recruitment may become less complicated.

Additionally, this study focused on two of the most prominent communication channels: F2F and texting. While it was unexpected that recruitment would take place in a pandemic, this may have increased the maintenance couples were doing via texting if they were separated to quarantine. Couple separations also may have resulted in more couples using other channels for maintenance; given the prevalence of video chat during the pandemic, it could have been particularly insightful to examine video chat richness perceptions and use for relational maintenance on that channel as well.

A final limitation of this study was the lack of variance over time. While some correlations between study variables changed over time, the ICCs indicated that there was not a significant amount of variability between timepoints. These similarities between time points could be for a variety of reasons, including the relatively small sample, not having enough time between the time points, and relationship duration. For instance, the small sample limits the analysis, and studies with a larger sample may have more significant findings over time.

Moreover, the current study conducted three surveys over four weeks, and it is likely that six

weeks is not long enough to see a significant change, specifically given that, on average, participants reported having been in their relationships for six years. It is possible that six weeks would be a more significant time frame if the relationship length were shorter, so future studies may benefit from focusing their analysis on new relationships or on couples who have been together for less than one year. This may be worthwhile since new relationships may be more likely to change their behaviors and adapt their maintenance strategies compared to people who are already in well-established relationships.

Future Research

Based on the findings and limitations of this dissertation, there are several areas for future researchers to explore. First, due to the problems with recruitment and retention in this study, future studies may consider the practicality of recruiting participants on other platforms that may be better suited for reaching neurodiverse individuals. In addition to MTurk, Prolific and Qualtrics also offer audience targeting, but it is unclear how well those would work in a longitudinal setting. Another option may be to recruit via social media and use the many audience and demographic targeting variables available there. Related to this, future studies should include samples that focus on newer relationships or extend the length of time between the surveys. These changes will likely lead to more differences between the time points and allow for multilevel analysis.

One interesting finding from this study was that individuals with ADHD do not necessarily feel discriminated against. Participants with ADHD reported relatively low perceived discrimination ($M = 2.40, SD = .90$), which is good, but it also means that this scale might not be measuring the difference that individuals with ADHD experience. While Geiger and Brewster (2018) successfully used this scale in individuals with learning differences, this low score (on a

7-point scale) calls into question the relevance of MST. Even though individuals with ADHD experience relational challenges, they appear to be unrelated to perceived discrimination.

Therefore, it could be the case that having ADHD or being neurodiverse is simply another type of individual difference that is not necessarily related to MST. Future research should continue to explore mechanisms and theories that explain these differences among individuals with ADHD.

Additionally, future studies should explore maintenance on other channels, such as video chat and phone calls. Using additional channels may have been particularly insightful to examine video chat richness perceptions and use for relational maintenance on that channel as well. This study provided evidence that using multiple channels for maintenance is essential. Future research should continue to explore how multiple maintenance channels impact neurodiverse relationships, understudied relationships, and other close relationships since all of these experience unique challenges to communication and relationships.

Because this study focused on just one form of neurodiversity—ADHD—future research should explore other subsets of neurodiversity (i.e., autism spectrum conditions, Tourette syndrome, acquired neurodiversity, anxiety disorders). Given that neurodiversity has generally been associated with low relational quality, it would be necessary for future research to focus on specific forms of neurodiversity to clarify the differences between neurotypical and neurodiverse relationships in terms of communication patterns, maintenance, and quality. In sum, future research should continue to examine differences people in neurodiverse relationships experience with a focus on the factors that change, mediate, or moderate their likelihood for quality relationships.

Additionally, this research advances the understanding of ADHD and relationships. The findings showed that while individuals with ADHD experience lower relational quality, they can

potentially improve it by using F2F communication more. Future researchers can use this information to continue researching ways that communication can help improve neurodiverse relationships. The findings from this study may be researched and applied to other relational contexts, such as in the workplace and in friendships. Together, better understanding the relational and communicative components of ADHD in these other contexts will help improve the quality of life of individuals with ADHD. It will also provide valuable information about how to cope with differences and challenges associated with having ADHD.

Finally, future research should continue investigating and testing F2F communication as a channel. The findings from this study provide some support for the idea of F2F communication as a channel, but existing research does not consider F2F as one, especially in mediated contexts. Since almost all relationships take place both F2F and through at least one form of mediated communication, it is also important for researchers to consider all of the possible channels used, including F2F. F2F communication is a channel, but CET does not address it as one; future research should continue this extension of CET to F2F communication. Better understanding this will allow future research to understand how people communicate in F2F contexts and advance CET. Research often situates F2F communication as a comparison group for various forms of mediated communication, but future research could go beyond this by understanding how richness and other factors impact or are impacted by F2F communication.

Conclusion

The current literature situates ADHD specifically, and neurodiversity generally, as negatively affecting relationship quality. Drawing from channel expansion theory (CET) and minority stress theory (MST), this dissertation explains how using multiple channels for maintenance can improve ADHD and neurodiverse relationships. Using multiple channels for

maintenance makes sense given that CET argues that individuals get better at communicating as they gain familiarity with a channel and that MST argues that stigmatized relationships need more maintenance strategies. This dissertation compared adults with and without ADHD diagnoses, as well as general symptoms of ADHD, to understand how channels, richness, and maintenance (in face-to-face and texting contexts) influence relational satisfaction. In addition, the study explored how these change over time.

The study found support for the idea that MST and CET are complementary theories for understanding satisfaction in neurodiverse relationships by highlighting the need for more than one channel for relational maintenance. For individuals with ADHD specifically, it is important to maintain relationships through more than one channel (i.e., via F2F and through texting) because individuals with ADHD can improve their relationship quality by using multiple channels—or different combinations of channels, including F2F—for relational maintenance. On the one hand, the results from this study echo prior findings by demonstrating that individuals with ADHD often experience lower relational quality; on the other hand, the findings also illustrate a mechanism where individuals with ADHD who have low relational quality use F2F communication less and therefore, perceive it as less rich and use fewer maintenance behaviors. Thus, these findings imply that if individuals with ADHD used F2F communication more, they might be more satisfied with their relationships.

These findings provide a much more optimistic outlook for ADHD and neurodiverse relationships. While prior research indicates that individuals with ADHD or other forms of neurodiversity experience relationships differently, this dissertation adds one specific strategy (i.e., using multiple channels for relational maintenance) these individuals can use to offset satisfaction as a negative relational outcome. This dissertation provides hope to those struggling

with ADHD, neurodiversity, and relationships by indicating that individuals with and without ADHD can have comparable relational satisfaction when they use both F2F and texting to maintain their relationships. Future research should continue to examine how CET and MST complement one another by investigating additional maintenance channels and types of neurodiversity.

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APPENDIX A: IRB APPROVAL LETTER



Melody Harries
IRB Administrator
Institutional Review Board
Engelmann 270
P. O. Box 413
Milwaukee, WI 53201-0413
414-662-3544

New Study - Notice of IRB Expedited Approval

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Date: December 10, 2020

To: Erin Ruppel
Dept: Communication

CC: Jessica Kahlow

IRB #: 21.133

Title: Improving Neurodiverse Relationships: Differences in Relational Maintenance, Channel Use, and Richness among Individuals with ADHD

After review of your research protocol by the University of Wisconsin – Milwaukee Institutional Review Board, your protocol has been approved as minimal risk Expedited under **Category 7** as governed by 45 CFR 46.110.

This protocol has been approved on **December 10, 2020** for one year. IRB approval will expire on **December 9, 2021**. Before the expiration date, you will receive an email explaining how to either keep the study open or close it.

This study may be selected for a post-approval review by the IRB. The review will include an in-person meeting with members of the IRB to verify that study activities are consistent with the approved protocol and to review signed consent forms and other study-related records.

Any proposed changes to the protocol must be reviewed by the IRB before implementation, unless the change is specifically necessary to eliminate apparent immediate hazards to the subjects. It is the principal investigator's responsibility to adhere to the policies and guidelines set forth by the UWM IRB, maintain proper documentation of study records and promptly report to the IRB any adverse events which require reporting. The principal investigator is also responsible for ensuring that all study staff receive appropriate training in the ethical guidelines of conducting human subjects research.

As Principal Investigator, it is your responsibility to adhere to UWM and UW System Policies, and any applicable state and federal laws governing activities which are independent of IRB review/approval (e.g., [FERPA](#), [Radiation Safety](#), [UWM Data Security](#), [UW System policy on Prizes, Awards and Gifts](#), state gambling laws, etc.). When conducting research at institutions outside of UWM, be sure to obtain permission and/or approval as required by their policies.

Contact the IRB office if you have any further questions. Thank you for your cooperation and best wishes for a successful project.

Respectfully,

Melody Harries
IRB Administrator

APPENDIX B: SURVEY

*item is reverse coded

¹Included on survey 1

²Included on surveys 2 and 3

+ ADHD survey only

* NT survey only

DIRECTIONS (ADHD)

To be eligible for the survey, you need to 1) be at least 18 years old, 2) in a romantic relationship, and 3) identify as having ADHD (this includes individuals who have official diagnoses and individuals who believe they have it but who have not sought a medical diagnosis).

DIRECTIONS (Neurotypical/without ADHD)

To be eligible for the survey, you need to identify as being neurotypical (this includes individuals who do not have official diagnoses or otherwise believe they are neurodiverse).

ADHD Initial Questions¹⁺

1. Have you ever been diagnosed with ADD or ADHD? [Yes, No but I still identify as having it, No]
2. Do you currently take medication for your ADD or ADHD? [yes, no, sometimes]
3. I consider ADD/ADHD to be a big part of who I am. (Response options ranged from 1 = strongly disagree to 5 = strongly agree)
4. When did you begin identifying as having ADHD? For example, enter the year you were diagnosed or if you are not diagnosed, enter the year you began to suspect you might have it.
5. How long after being diagnosed, did you publicly disclose your ADHD? [Years/months/days]
6. Are you currently in a relationship? [yes/no; if no, disqualified]
7. How long have you been with your current romantic partner? [Days/months/years]
8. Is your relationship exclusive? [yes/no]
9. What is your gender identity? [Text entry]
10. What is your partner's gender identity? [Text entry]

NT Initial Question*

1. Do you have any of the following diagnoses?
 - a. ADD/ADHD
 - b. Tourette Syndrome
 - c. Acquired Neurodiversity
 - d. Mental Illness
 - e. Autism Spectrum Conditions
 - f. Other [Text Entry]
 - g. No

ADHD Symptoms¹ (Kessler et al., 2005)

Please answer the questions below, rating yourself on each of the criteria shown using the scale on the right side of the page. Select the option that best describes how you have felt and conducted yourself over the past six months.

(Response options range from never [1] to very often [5])

1. How often do you have trouble wrapping up the final details of a project once the challenging parts have been done?
2. How often do you have difficulty getting things in order when you have to do a task that requires organization?
3. How often do you have problems remembering appointments or obligations?
4. When you have a task that requires a lot of thought, how often do you avoid or delay getting started?
5. How often do you fidget or squirm with your hands or feet when you have to sit down for a long time?
6. How often do you feel overly active and compelled to do things, like you were driven by a motor?

Channel Use (Carlson & Zmud, 1999)¹²

1. Of the following five channels, please rank how often you use each channel to communicate with your romantic partner (so that the channel you use most frequently is first and the channel you use least is last).
(Ranked 1–6)
↓ face-to-face
↓ phone calls
↓ texting (including private DMs)
↓ email
↓ social networking sites
2. In the past two weeks, how much time do you spend communicating with your partner on each of the following channels each day?
 - a. face-to-face
 - b. video calls (Zoom, Skype, Facetime)
 - c. phone calls
 - d. texting (including private DMs)
 - e. email
 - f. social networking sites

(Response options range from zero [indicating that zero messages were sent through that media that day] to seven [indicating that more than 30 messages were sent through that media that day].)

Perceived richness

(Response options range from strongly disagree [1] to strongly agree [7])

3. [F2F communication/texting] allows us to give and receive timely feedback.
4. The channel [F2F communication/texting] allows us to tailor our messages to our own personal requirements.

5. The channel [F2F communication/texting] allows us to communicate a variety of different cues (such as emotional tone, attitude, or formality) in our messages.
6. [F2F communication/texting] allows us to use rich and varied language in our messages.
7. I could easily explain things via [F2F communication/texting].
8. [F2F communication/texting] helped us communicate quickly.
9. [F2F communication/texting] helped us to better understand each other.
10. How experienced are you with [F2F communication/texting]
 - a. I am very experienced.
 - b. I feel it is easy to use.
 - c. I feel competent using it.
 - d. I understand how to use all of the features.
 - e. I feel comfortable using it.
 - f. I feel that I am a novice using it.*

Please indicate your experience in communicating with your partner.
(Response options range from strongly disagree [1] to strongly agree [7])

11. Overall, I feel that I know my communication partner well.
12. I feel comfortable communicating emotional issues with my partner.
13. I do not trust my partner.*
14. I feel comfortable discussing personal or private issues with my partner.
15. I feel close to my partner.
16. I feel comfortable using informal communication (such as slang or abbreviations) with my partner.
17. I feel that I am not familiar with my partner.*
18. I feel comfortable communicating with my partner.
19. I feel involved with my partner.
20. I feel more comfortable communicating in a formal manner with my partner rather than in an informal manner.*

Richness (Ferry et al., 2001) ¹²

(Completed once for face-to-face and once for texting)

Please indicate the extent to which you agree with each of the following statements.

(Response options range from strongly disagree [1] to strongly agree [7])

Multiple Channels

1. I can send/receive information through spoken word.
2. I can understand my partner through voice inflection and intonations.
3. I can communicate (send/receive) through body language.
4. I can understand my partner by noticing their facial expressions or other nonverbal expressions.

Immediacy of Feedback

5. I know immediately what my partner thinks about my ideas.

(Response options include more than three hours [1], three hours [2], one hour [3], thirty minutes [4], fifteen minutes [5], a few minutes [6], and a few seconds [7])

6. When you are able to express your reactions to your partner immediately, how long (on average) do you think it takes for them to receive your reactions?
7. On average, how long does it seem to take for you to learn what your partner thinks of your ideas?
8. On average, how long do you feel you have to wait to express your reactions to your partner?

Personalness

When using this channel, to what extent do you sense the presence of your partner?

9. To what extent is this channel sociable or unsociable?
(Response options range from unsociable [1] to very sociable [7])
10. To what extent is this channel warm or cold?
(Response options range from cold [1] to warm [7])
11. To what extent is this channel personal or impersonal?
(Response options range from impersonal [1] to personal [7])
12. To what extent is this channel sensitive or insensitive?
(Response options range from insensitive [1] to sensitive [7])

Relational Maintenance (RMBM) (Stafford, 2011) ¹²

The following items concern things that people might do to maintain their relationships. Please indicate the extent to which you believe each of the following statements describes your current (over the past two weeks, for example) methods of maintaining your relationship **in person (face-to-face only)**.

(Response options range from strongly disagree [1] to strongly agree [7])

Positivity

1. Acts positively with me.
2. Is upbeat when we are together.
3. Acts cheerfully with me.
4. Acts optimistically when they are with me.

Understanding

5. Is understanding.
6. Is forgiving of me.
7. Apologizes when they are wrong.
8. Does not judge me.

Self-Disclosure

9. Talks about their fears.
10. Is open about their feelings.
11. Encourages me to share my feelings with them.

Relationship Talks

12. Discusses the quality of our relationship.
13. Tells me how they feel about the relationship.
14. Has talks about our relationship.

Assurances

15. Talks about future events (e.g., having children, anniversaries, or retirement, etc.).
16. Performs their household responsibilities.
17. Helps with the tasks that need to be done.
18. Does not shirk their duties.

Networks

19. Includes our friends in our activities.
20. Does things with our friends.
21. Spends time with our families.
22. Asks a family member for help.
23. Turns to a family member for advice.

The following items concern things that people might do to maintain their relationships. Please indicate the extent to which you believe each of the following statements describes your current (over the past two weeks, for example) methods of maintaining your relationship **via text**. (Response options range from strongly disagree [1] to strongly agree [7])

Positivity

1. Acts positively with me.
2. Is upbeat when we are together.
3. Acts cheerfully with me.
4. Acts optimistically when they are with me.

Understanding

5. Is understanding.
6. Is forgiving of me.
7. Apologizes when they are wrong.
8. Does not judge me.

Self-Disclosure

9. Talks about their fears.
10. Is open about their feelings.
11. Encourages me to share my feelings with them.

Relationship Talks

12. Discusses the quality of our relationship.
13. Tells me how they feel about the relationship.
14. Has talks about our relationship.

Assurances

15. Talks about future events (e.g., having children, anniversaries, or retirement, etc.).
16. Performs their household responsibilities.
17. Helps with the tasks that need to be done.
18. Does not shirk their duties.

Networks

19. Includes our friends in our activities.
20. Does things with our friends.
21. Spends time with our families.
22. Asks a family member for help.
23. Turns to a family member for advice.

Relational Satisfaction – Quality of Marriage Index (Norton, 1983) ¹²

Please indicate the extent to which you agree or disagree with each of the following statements.

(Response options range from strongly disagree [1] to strongly agree [7])

1. We have a good relationship.
2. My relationship with my partner is very stable.
3. Our relationship is strong.
4. My relationship with my partner makes me happy.
5. I really feel like part of a team with my partner.
6. Please indicate the degree of happiness you have in your relationship, everything considered. (1 = not all happy–10 Extremely happy)

Relational Closeness (Dibble et al., 2012) ¹²

Please indicate the extent to which you agree or disagree with each of the following statements.

(Response options range from strongly disagree [1] to strongly agree [7])

1. I have a strong relationship with this person.
2. When we are apart, I miss them a great deal.
3. We disclose important personal things to each other.
4. I have a strong connection with this person.
5. We want to spend a lot of time together.
6. I'm sure of my relationship with this person.
7. This person is a priority in my life.
8. We do a lot of things together.
9. When I have free time, I choose to spend it alone with this person.
10. I think about this person a lot.
11. My relationship with this person is important in my life.
12. I consider this person when making important decisions.

Intimacy (Sternberg, 1997) ¹²

Please indicate the extent to which you agree or disagree with each of the following statements.

(Response options range from strongly disagree [1] to strongly agree [7])

1. I have a warm relationship with my partner.
2. I communicate well with my partner.
3. I share deeply personal information about myself with my partner.
4. I feel that I really understand my partner.
5. I feel that my partner really understands me.
6. I feel that I can really trust my partner.
7. I have received considerable emotional support from my partner.
8. I am able to count on my partner in times of need.
9. My partner is able to count on me in times of need.
10. I value my partner greatly in my life.
11. I am willing to share myself and my possessions with my partner.
12. I experience great happiness with my partner.
13. I feel emotionally close to my partner.
14. I give considerable emotional support to my partner.

Perceived Discrimination Scale¹⁺ (Geiger, 2019; Geiger & Brewster, 2018)

Please rate how often the experience reflected in each of the following items has happened to you personally.

(Response options range from this has never happened to me [1] to this happens to me almost all of the time [more than 70% of the time] [7])

1. People have talked down to me because I have ADHD.
2. People have acted like I will never be as smart as someone without ADHD.
3. People have treated me like I am unable to learn because of my ADHD.
4. Others have expected me to fail because I have ADHD.
5. I have been made to feel stupid because of my ADHD.
6. Others have teased me about being slow because of my ADHD.
7. I have been treated like I am inferior because of my ADHD.
8. People have questioned my intelligence because of my ADHD.
9. I have been told that I will never be able to keep up academically because of my ADHD.
10. I have been socially ostracized by others because of my ADHD.
11. I have been undervalued because of my ADHD.
12. People have treated the help (i.e., accommodations, assistance) I receive for my ADHD as an unfair advantage.
13. Others have made me feel bad for the help (i.e., accommodations, assistance) I request for my ADHD.
14. My rights to reasonable accommodations have not been taken seriously by others.
15. People have assumed that I use ADHD as an excuse to get out of work.
16. People have told me that if I worked hard enough I would not need help (i.e., accommodations, assistance) for my ADHD.
17. People have not believed that I have ADHD even when I tell them I do.

In addition, please rate how stressful the experience reflected in each item was for you. We are interested in your personal experiences as an individual diagnosed with a learning disability and realize that each experience may or may not have happened to you. To tell us about your experiences, please rate each item using the scales below:

(Response options range from not at all stressful [1] to extremely stressful [7])

1. People have talked down to me because I have ADHD.
2. People have acted like I will never be as smart as someone without ADHD.
3. People have treated me like I am unable to learn because of my ADHD.
4. Others have expected me to fail because I have ADHD.
5. I have been made to feel stupid because of my ADHD.
6. Others have teased me about being slow because of my ADHD.
7. I have been treated like I am inferior because of my ADHD.
8. People have questioned my intelligence because of my ADHD.
9. I have been told that I will never be able to keep up academically because of my ADHD.
10. I have been socially ostracized by others because of my ADHD.
11. I have been undervalued because of my ADHD.
12. People have treated the help (i.e., accommodations, assistance) I receive for my ADHD as an unfair advantage.

13. Others have made me feel bad for the help (i.e., accommodations, assistance) I request for my ADHD.
14. My rights to reasonable accommodations have not been taken seriously by others.
15. People have assumed that I use ADHD as an excuse to get out of work.
16. People have told me that if I worked hard enough I would not need help (i.e., accommodations, assistance) for my ADHD.
17. People have not believed that I have ADHD even when I tell them I do.

Demographic Questions ¹

1. How old are you? Please answer in years.
2. What is your ethnicity?
 - a. White
 - b. Black or African American
 - c. American Indian or Alaska Native
 - d. Asian
 - e. Native Hawaiian or Pacific Islander
 - f. Other [text entry]
3. What is your current gender identity?
 - a. I identify as a man
 - b. I identify as a woman
 - c. I am a person with a non-binary gender identity
 - d. I have a different identity, please indicate [text entry]
4. What best describes your highest education level?
 - a. Some high school
 - b. High School Graduate / GED
 - c. Some college
 - d. Graduate with an Associates
 - e. Graduate with a Bachelors
 - f. Current graduate student
 - g. Graduate with a Masters
 - h. Graduate with a Doctoral/terminal degree

APPENDIX C: SPSS SYNTAX

Mediation (PROCESS)

PROCESS

```
y=Satis  
/x=ADHDSym  
/m= ChnUsFtf RichFtf MxFtF  
/cov=RelLength Age Ethnicity Gend  
/model=6.
```

Unconditional Growth Curve Analysis

MIXED Satis with Time

```
/PRINT = SOLUTION TESTCOV  
/FIXED = Time.  
/RANDOM = intercept | SUBJECT(Unique_ID).
```

Multilevel Mediation (MLMED)

```
mlmed data = T123  
  /x = ADHDsym  
  /xB = 1  
  /xW = 1  
  /m1 = MxTxt  
  /m2 = ChUsTxt  
  /m3 = RchTxt  
  /y =Satis  
  /cluster = Unique_ID  
  /cov1 =  
  /cov1B = 0  
  /cov2 =  
  /cov2B = 0  
  /cov3 =  
  /cov3B = 0  
  /l2cov1 =  
  /l2cov2 =  
  /l2cov3 =  
  /modS1 =  
  /modS1c = 0  
  /modS1B = 0  
  /modS2 =  
  /modS2c = 0  
  /modS2B = 0  
  /modD =  
  /modDc = 0
```

```
/modDB = 0
/covmat = DIAG
/rescovmat = DIAG
/est= REML
/samples = 10000
/conf = 95
/randx1 = 0
/randx2 = 0
/randx3 = 0
/randx4 = 0
/randm1 = 0
/randm2 = 0
/randm3 = 0
/m1int = 0
/m2int = 0
/m3int = 0
/mB1 = 1
/mB2 = 1
/mB3 = 1
/rc11 = 0
/rc12 = 0
/rc13 = 0
/rc14 = 0
/rc21 = 0
/rc22 = 0
/rc23 = 0
/rc24 = 0
/rc31 = 0
/rc32 = 0
/rc33 = 0

/rc34 = 0
/folder = FolderLocation.
```

CURRICULUM VITAE

JESSICA A. KAHLOW

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EDUCATION

DOCTOR OF PHILOSOPHY, COMMUNICATION

University of Wisconsin–Milwaukee, Spring 2021

Advisor: Dr. Erin Ruppel

Areas of study: Interpersonal, Technology, Group, Organizational, Research Methods

Dissertation: “Improving Neurodiverse Relationships: Comparing Relational Quality and Maintenance Channels in Individuals with and without ADHD”

MASTER OF ARTS, PUBLIC ADMINISTRATION

University of Wisconsin Oshkosh, Fall 2016

Thesis: “Emotional Labor in Writing Centers: The Influence of Confidence and Experience”

BACHELOR OF SCIENCE, POLITICAL SCIENCE, EMPHASIS: LEGAL STUDIES

University of Wisconsin Oshkosh, Spring 2014

Honors Capstone: “Multilateral International Environmental Agreements on Biodiversity: Making Future Agreements Effective”

FELLOWSHIPS

DISTINGUISHED DISSERTATION FELLOWSHIP, GRADUATE STUDIES

University of Wisconsin–Milwaukee, 2020–2021

DISTINGUISHED GRADUATE STUDENT FELLOWSHIP, GRADUATE STUDIES

University of Wisconsin–Milwaukee, 2019–2020

AWARDS

MELVIN H. MILLER AWARD, DEPARTMENT OF COMMUNICATION

University of Wisconsin–Milwaukee, Spring 2021

RENEE A. MEYERS SCHOLARSHIP, DEPARTMENT OF COMMUNICATION

University of Wisconsin–Milwaukee, 2020–2021

PAUL D. SKALSKI TOP PAPER AWARD, GRADUATE STUDENT CAUCUS

Central States Communication Association, Cincinnati, OH, April 2021

TOP PAPER, ORGANIZATIONAL COMMUNICATION

Central States Communication Association, Cincinnati, OH, April 2021

MELVIN H. MILLER AWARD, DEPARTMENT OF COMMUNICATION

University of Wisconsin–Milwaukee, Fall 2020

DEPARTMENT OF COMMUNICATION AWARD FOR TOP GPA

University of Wisconsin–Milwaukee, 2020

TOP PAPER, GRADUATE STUDENT CAUCUS

Central States Communication Association, Chicago, IL, April 2020

DEPARTMENT OF COMMUNICATION RECOGNITION AWARD FOR RESEARCH

University of Wisconsin–Milwaukee, 2019

NATIONAL COMMUNICATION ASSOCIATION CAUCUS STUDENT TRAVEL AWARD

NCA Diversity Council, 2019

NATIONAL COMMUNICATION ASSOCIATION CAUCUS STUDENT TRAVEL AWARD

NCA Diversity Council, 2018

GRADUATE STUDIES HONORS AWARD, GRADUATE STUDIES

University of Wisconsin Oshkosh, 2017

EMPLOYMENT HISTORY

UNIVERSITY OF WISCONSIN–MILWAUKEE

Research Assistant, Communication Dept.

August 2019–Present

Writing Center Tutor

August 2017–December 2017

ECONTENTPRO INTERNATIONAL

English Language Copy Editor

July 2019–Present

UNIVERSITY OF WISCONSIN OSHKOSH

Writing Center Program Specialist

August 2014–August 2017

Graduate Assistant, English Dept.

April 2015–June 2015

Data Entry Associate, University Admissions Office

August 2015–August 2016

Writing Center Consultant

August 2013–August 2017

Intensive English Program Writing Mentor

August 2013–August 2017

Developmental English Program Writing Mentor

August 2013–August 2017

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Summer 2014–Summer 2017

Titan Advantage Program Writing Mentor

Summer 2014–Summer 2017

Project Success Writing Lab Tutor

August 2014–December 2014

TEACHING EXPERIENCE

Note: in person¹, online asynchronous², online synchronous³

UNIVERSITY OF WISCONSIN–MILWAUKEE

GRADUATE TEACHING ASSISTANT (INSTRUCTOR OF RECORD), COMMUNICATION DEPARTMENT

Communication 313 (online): Human Communication and Technology (F18², S19²)

Communication 105: Business and Professional Communication (F17¹, S18², Su18², Su19², F20², S21²)

Communication 105: Business and Professional Communication (F17¹)

AURORA UNIVERSITY

ADJUNCT FACULTY, DUNHAM SCHOOL OF BUSINESS AND PUBLIC POLICY

Communication 4020: Communication Research and Insights (F20³)

PEER-REVIEWED PUBLICATIONS (6)

JOURNAL ARTICLES

- Kahlow, J. A.** & Jenkins, E. M. (accepted, expected Spring 2021). The interactions of risk, trust, and permanence on emerging adults' motivations for sexting: A communication privacy management perspective. *The Journal of Popular Romance Studies*, special issue on Sexting, Intimacy, and Romance.
- Kahlow, J. A.** (2020). Normalizing incarceration: An examination of an incarcerated mother's letters to her daughter. *Qualitative Research Reports in Communication*, 22. doi.org/10.1080/17459435.2020.1790633
- Kahlow, J. A.**, Coker, M. C., & Richards, R. (2020). The multimodal nature of Snapchat in close relationships: Toward a social presence-based theoretical framework. *Computers in Human Behavior*, 111. doi.org/10.1016/j.chb.2020.106409
- Kahlow, J.**, Klecka, H., & Ruppel, E. (2020). What the differences in conflict between online and face-to-face work groups mean for hybrid groups: A state-of-the-art review. *Review of Communication Research*, 8, 51–77. doi:10.12840/ISSN.2255-4165.023

BOOK CHAPTERS

- Riforgiate, S. E., Gattoni, A., & **Kahlow, J. A.** (2021). "Shhhhh, I'm Working!": Working from home and struggling to manage relationships. In C. Liberman & K. Wright (Eds.), *Casing Mediated Communication*. Kendall Hunt Publishing.
- Kahlow, J. A.** (2020). The influence of technology on privacy boundary management in young adults' sexting relationships. In R. Kalish (Eds.), *Young Adult Sexuality in the Digital Age*. IGI Global. doi.org/10.4018/978-1-7998-3187-7

INVITED PUBLICATIONS (5)

- Ruppel, E. K., **Kahlow, J. A.**, & Zhixin, P. (2020). Information seeking. In *International Encyclopedia of Media Psychology*. John Wiley & Sons, Inc. https://doi.org/10.1002/9781119011071.iemp0264
- Kahlow, J.** (2019). Composing Research, Communicating Results. [Review of the book *Composing Research, Communicating Results*, by K. Lindemann]. *Central States Communication Association (Scholarship Supplement)*, 87(2), pp. 13–14.
- Kahlow, J.** (2020). Basics of APA. In E. Mueller & M. Allen *Business and Professional Communication* (Custom Edition for the University of Wisconsin-Milwaukee, pp. 139–152). McGraw-Hill Education.
- Kahlow, J.** (2018). Resume writing. In E. Mueller & M. Allen *Business and Professional Communication* (Custom Edition for the University of Wisconsin-Milwaukee, pp. 44–63). McGraw-Hill Education.
- Kahlow, J.** (2017). Collaborating with groups. *The Dangling Modifier*, 24(1). <http://sites.psu.edu/thedanglingmodifier/?p=3774>

JOURNAL ARTICLES UNDER REVIEW (6)

- Kahlow, J. A.** "Stop trying so hard!": Disclosing learning differences in the workplace [Manuscript submitted for publication]. Communication Department, University of Wisconsin-Milwaukee.
- Kahlow, J. A.** Anonymous and non-anonymous online disclosures of ADHD [Manuscript submitted for publication]. Communication Department, University of Wisconsin-Milwaukee.
- Kahlow, J.**, Casey, D., Simpson, D. The mediating roles of relational outcomes, stress, and communication apprehension on the decision to disclose ADHD in the workplace [Manuscript submitted for publication]. Communication Department, University of Wisconsin-Milwaukee.
- Kahlow, J.** Exploring the links between personality and modality preference [Manuscript submitted for publication]. Communication Department, University of Wisconsin-Milwaukee.
- Kahlow, J. A.** A review of long-distance romantic relationships [Manuscript submitted for publication]. Communication Department, University of Wisconsin-Milwaukee.
- Coker, M. & **Kahlow, J.** Extending SIT to niche networks: The effect of group commitment on sexual identity commitment among men who have sex with men [Manuscript submitted for publication]. Communication Department, University of Wisconsin-Milwaukee.

RESEARCH IN PROGRESS (5)

- Sahlstein Parcell, E., Ruppel, E., & **Kahlow, J.** *Difficult conversations for military couples: An application of the theory of motivated information management* [In data collection]. Communication Department, University of Wisconsin–Milwaukee.
- Kahlow, J.** *Improving Neurodiverse Relationships: Comparing Relational Quality and Maintenance Channels in Individuals with and without ADHD*. [Dissertation proposal defended on 10/21/20]. Communication Department, University of Wisconsin–Milwaukee.
- Kahlow, J.** *Understanding Relational Challenges in ADHD Relationships: A Communication Theory of Resilience Perspective* [Data collection postponed due to Covid-19]. Communication Department, University of Wisconsin–Milwaukee.
- Kahlow, J. A.** *Public and private disclosures of ADHD* [Project on hold]. Communication Department, University of Wisconsin–Milwaukee.
- Kahlow, J.,** Sahlstein Parcell, E., & Merolla, A. *The Influence of Communication Technologies on Relational Satisfaction and Conflict in LDRRs: A Media Multiplexity Perspective* [Manuscript in preparation]. Communication Department, University of Wisconsin–Milwaukee.

CONFERENCE PAPER PRESENTATIONS (21)

- Kahlow, J.,** Sahlstein Parcell, E., & Merolla, A. (2021, July). *The Influence of Communication Technologies on Relational Satisfaction and Conflict in LDRRs: A Media Multiplexity Perspective* [Poster paper presentation]. International Association for Relationship Research Conference, London, England. *submitted for presentation in 2020, but the conference was postponed due to COVID-19
- Sahlstein Parcell, E., Ruppel, E., & **Kahlow, J.** (2021, July). *Seeking and Providing Information After a Deployment: An Exploration and Application of the Theory of Motivated Information Management to Military Couples* [Paper presentation]. International Association for Relationship Research Conference, London, England. *submitted for presentation in 2020, but the conference was postponed due to COVID-19
- Kahlow, J. A. (2021, March). *A review of long-distance romantic relationships* (Top Paper) [Paper presentation]. Central States Communication Association Conference, Cincinnati, OH (Virtual).
- Kahlow, J., Casey, D., & Simpson, D. (2021, March). *The Mediating Roles of Relational Outcomes, Stress, and Communication Apprehension on the Decision to Disclose ADHD in the Workplace* (Top Paper). [Paper presentation]. Central States Communication Association Conference, Cincinnati, OH (Virtual).
- Coker, M. C. & **Kahlow, J. A.** (2020, November). *A Comprehensive Literature Review of Diverse Online Groups and Technological Affordances* [Asynchronous paper presentation]. National Communication Association Conference, Virtual Conference.
- Coker, M. & **Kahlow, J.** (2020, November). *Extending SIT to Niche Networks: The Moderating Effect of Group Commitment on Sexual Identity Commitment among Men who have Sex with Men* (Top 3 Student Papers) [Asynchronous paper presentation]. National Communication Association Conference, Virtual Conference.
- Kahlow, J.** (2020, November). *Exploring the links between personality and modality preference* [Asynchronous paper presentation]. National Communication Association Conference, Virtual Conference.
- Kahlow, J.,** Casey, D., Simpson, D. (2020, November). *Motivations for Disclosing ADHD in the Workplace* [Asynchronous paper presentation]. National Communication Association Conference, Virtual Conference.
- Kahlow, J.,** Casey, D., Simpson, D. (2020, November). *Anonymous and non-anonymous online disclosures of ADHD* [Asynchronous paper presentation]. National Communication Association Conference, Virtual Conference.
- Sahlstein Parcell, E., Ruppel, E., & **Kahlow, J.** (2020, November). *Seeking Information After Deployment: A Qualitative Exploration and Application of the Theory of Motivated Information Management to Military Spouses* [Asynchronous paper presentation]. National Communication Association Conference, Virtual Conference.
- LeFebvre, L., Rasner, R., **Kahlow, J.,** & Allen, A. (2020, May). *Media Impact on Non-Initiator Suffering* [Virtual paper presentation]. International Communication Association Conference, Gold Coast, Australia.

- Kahlow, J.** (2020, April). *There's a Bitmoji for that: The effect of Bitmojis on online student engagement* [Paper presentation]. Central States Communication Association, Chicago, IL. *paper accepted, but not presented due to COVID-19 cancellation
- Kahlow, J.** (2020, April). *"Stop trying so hard!": A Case Study of Disclosing Learning Differences in the Workplace* [Paper presentation]. Central States Communication Association, Chicago, IL. *paper accepted, but not presented due to COVID-19 cancellation
- Kahlow, J. & Jenkins, E. M.** (2019, November). *Emerging Adults' Motivations for Sexting on New Media: A communication privacy management perspective* [Paper presentation]. National Communication Association, Baltimore, MD.
- Richards, R., **Kahlow, J.**, & Coker, M.C. (2019, November). *The interpersonal process model of intimacy: The importance of reciprocity and perceived partner response in romantic relationship sexting* [Paper presentation]. National Communication Association, Baltimore, MD.
- Kahlow, J., Coker, M. C., & Richards, R.** (2019, November). *Snapchat is multimodal: A daily diary examination of closeness in interpersonal relationships* [Paper presentation]. National Communication Association, Baltimore, MD.
- Kahlow, J.** (2019, November). *Using communicative acts to move forward during incarceration: An examination of an incarcerated mother's letters to her daughter* [Paper presentation]. National Communication Association, Baltimore, MD.
- Kahlow, J.** (2019, April). *"Since U Been Gone": Relational maintenance in long-distance relationships* [Paper presentation]. Central States Communication Association, Omaha, NE.
- Kahlow, J.** (2018, November). *Aggregating public opinion on social media: A meta-analysis on election outcomes.* National Communication Association Conference, Salt Lake City, UT.
- Kahlow, J. & Klecka, H.** (2018, November). *Conflict management and social processes in online groups.* National Communication Association Conference, Salt Lake City, UT.
- Kahlow, J. & Mueller, C.** (2015, April). *Mining the data: What answers and insights can data provide?* Wisconsin Learning Assistance Network, Oshkosh, WI.

CONFERENCE PANEL DISCUSSIONS

- Finding Inspiration to Publish: Tips for Graduate Students. (2021, March). [Discussion panelist]. Central States Communication Association Conference, Cincinnati, OH (Virtual).
- Things I Wish I Had Known: Advice for New Graduate Students -- Top Panel. (2021, March). [Discussion chair]. Central States Communication Association Conference, Cincinnati, OH (Virtual).
- Technology and Community. (2021, March). [Discussion respondent]. Central States Communication Association Conference, Cincinnati, OH (Virtual).
- Hindsight 2020: Graduate Peer Advice for Publishing. (2020, November). [Asynchronous discussion panelist]. National Communication Association Conference, Indianapolis, IN.
- Discussions on Borders and Breakthroughs in Ethnicity, Gender, and Politics. (2020, April). [Discussion panelist]. Central States Communication Association Conference, Chicago, IL. *accepted, but not discussed due to COVID-19 cancellation
- What doesn't kill you makes you stronger? Discussing the mental health crisis among graduate students. (2019, April). [Discussion chair and panelist]. Central States Communication Association Conference, Omaha, NE.
- Collaboration in Graduate School: A Crucial Dialogue. (2019, April). [Discussion panelist]. Central States Communication Association Conference, Omaha, NE.

OTHER PROFESSIONAL PRESENTATIONS

- Researching and Submitting to Conferences and Journals, University of Wisconsin-Milwaukee, Virtual, 2 April 2021.
- Guest Lecture in Business and Professional Communication. Lecture titled "Who to hire? Resume Writing Activity" at the University of Wisconsin-Milwaukee, Milwaukee, WI, September 19, 2019.

GRE Preparation Workshops, The Analytical Writing Section, University of Wisconsin Oshkosh Writing Center, Oshkosh, WI, Fall 2014–Summer 2017.

Local Government Institute (LGI) Board Meeting, Local Transportation Funding Analysis, Madison, WI, June 2015.

MEDIA COVERAGE

Kahlow, J. (Kate Archer Kent). (2020, October 28). *Tips for virtual conflict resolution*. Wisconsin Public Radio Archive; The Morning Show. <https://www.wpr.org/tips-virtual-conflict-resolution>

Vickery, S. (August 2020). PCs and problems: Communication students research online group conflicts. *University of Wisconsin-Milwaukee College of Letters & Science In Focus Newsletter*, 10(8), 2–3. https://issuu.com/uw-milwaukee/docs/2020_august_in_focus/s/10826550

SERVICE

AD HOC JOURNAL REVIEWER

Computers in Human Behavior (5 reviews)

Cyberpsychology, Behavior, and Social Networking (2 reviews)

Cyberpsychology: Journal of Psychosocial Research on Cyberspace (1 review)

Internet Research (3 reviews)

Journal of Aging and Health (3 reviews)

Journal of Education (1 review)

Journal of Popular Romance Studies (1 review)

New Media and Society (2 reviews)

Social Media and Society (1 review)

EDITORIAL BOARD MEMBER

Journal of Social and Personal Relationships, Special Issue on Relationships in the Time of COVID 19

AFFILIATIONS

Central States Communication Association

International Association for Relationship Research

National Communication Association

CONFERENCE COMMITTEES

Chair, Graduate Student Caucus, Central States Communication Association, 2020–2021

Vice-Chair, Graduate Student Caucus, Central States Communication Association, 2019–2020

Secretary, Graduate Student Caucus, Central States Communication Association, 2018–2019

CONFERENCE PAPER REVIEWER

National Communication Association, Human Communication and Technology Division, 2020

National Communication Association, Interpersonal Division, 2019

International Communication Association Conference, Communication and Technology Division, 2018, 2019

Central States Communication Association Conference, Interpersonal & Family Communication Division, 2018, 2019, 2020

Central States Communication Association Conference, Graduate Student Caucus, 2018, 2019, 2020

CONFERENCE PANEL CHAIR

Other Topics from Grad Students: Politics, Leadership, and Religion. (2021, March). Central States Communication Association Conference, Cincinnati, OH (Virtual).

Smartphone use in Interpersonal Interactions. (November 2019). Interpersonal Communication Division, National Communication Association, Baltimore, MD.

Online reputation, social identity, and health communication-related research. (November 2019). Human Communication and Technology Division at the National Communication Association, Baltimore, MD.

Can we just survive? Examining the ways in which parents and children talk to each other. (November 2019). Family Communication Division at the National Communication Association, Baltimore, MD.

DEPARTMENT COMMITTEES

Treasurer, University of Wisconsin–Milwaukee Communication Graduate Student Council (CGSC), 2018–2020

Lambda Pi Eta Liaison, University of Wisconsin–Milwaukee, 2019

Undergraduate Committee Representative, Communication Dept., University of Wisconsin–Milwaukee, 2019