

AN EXPLORATION OF HOW TECHNOLOGY USE INFLUENCES RELATIONAL ETHIC
SCORES OF EMERGING ADULT ROMANTIC RELATIONSHIPS

by

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Technology is virtually used within all facets of life such as in employment locations, educational institutions, and in interpersonal relationships and has become a necessary tool of contemporary living. Technology is useful for connecting and accomplishing tasks and much research has concentrated on the benefits of technology for fulfilling these functions. It is also known that technology use is highest among emerging adults, ages 18-25. Little research has been done to determine the influence of technology use on romantic relationships, especially among the emerging adult population. Knowing the impact of technology use on romantic relationships is crucial for mental health clinicians since technology is now integrated into everyday living. The research questions addressed in this study were aimed at shedding light on the impact of technology use on romantic relationships in the emerging adult population. These research questions were grounded in contextual family therapy used by mental health clinicians to assess and treat clients who present for therapy. The research questions explored in this study were: 1) Does a participant's perception of the impact of technology use (i.e. very positive, somewhat positive, somewhat negative, very negative) on their relationship influence relational ethics trust scores and intimacy scores in committed relationships? 2) Is there a difference in these relational ethics scores based on Facebook use between cohabiting couples versus non-

cohabiting couples? 3) How does a participant's perception of the impact of technology use on their relationship impact relationship satisfaction and relational ethics scores? Data came from a collegiate sample in the Southeastern United States consisting of 248 respondents involved in any type of romantic relationship. Results indicated that a negative perception of the impact of technology use on a respondent's relationship was associated with lower relational outcomes for relational ethics, trust, intimacy, and relationship satisfaction. Results also indicated that there was no difference in relational ethic scores based on Facebook use between cohabiting versus non-cohabiting couples; however, Facebook use alone did impact relational ethics scores. Therefore, technology use can be described as negatively impacting various relational outcomes. Implications and future directions for mental health clinicians and researchers are discussed.

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CHAPTER 1: INTRODUCTION

Communication technologies have become an essential component of daily living penetrating many spheres such as employment settings, education, and interpersonal relationships (Murray & Campbell, 2015; Helsper & Whitty, 2010). People use many forms of technology and internet access as a way of connecting and communicating with others around the world. According to Pew Internet and American Life Project (2010) about 78% of Americans use the internet on a daily basis, and 88% of young adults (ages 18-24) use the internet daily. These numbers have likely increased since 2010 as communication technologies have become more accessible and affordable due to saturation effects of most households in America owning a computer (Rappleyea, Taylor, & Fang, 2014). As the inevitability of increased accessibility to communication technologies in daily living rises, the impact on human relationships, both positive and negative, will be profound.

Need for the Study

Since frequency of use is highest among young adults (Pew Internet and American Life Project, 2010) it is likely that they will be the population most influenced in their daily relationships with others. Seventy-two percent of young adults (ages 18-29) reported that they use social networking sites (Lenhart, Purcell, Smith, & Zickuhr, 2010), and recent research has indicated that young adults frequently utilize technology, predominately to connect with other people, especially potential romantic partners (Rappleyea et al., 2014; Schade Sandberg, Bean, Busby, & Coyne, 2013; Subrahmanyam & Greenfield, 2008; Van den Einjden & Meerkerk, 2008; Willoughby, 2008). Technology and social networking sites are important to facilitate communication among friends, dating partners, and in committed romantic relationships in

young adulthood (Wilson, Fornasier, & White, 2010). With use being high among this population, relationships are likely to be influenced on multiple levels (Hertlein, 2012).

Recent research has indicated that communication technologies have already begun to influence romantic relationship formation. More recently, the process of forming a romantic relationship may not follow a traditional (i.e. face to face) path as in previous generations (Taylor, Rappleyea, Fang, & Cannon, 2013; Banker et al. 2010; Cere, 2001). This process has become multifaceted largely because communication technologies have made it possible to get to know someone before going on the first “date.” In previous generations, individuals went on “dates” and interacted face-to-face to explore potential romantic relationships (Cherlin, 2004). Today, both men and women view the use of technology as an appropriate mechanism to explore a potential romantic relationship (Taylor et al., 2013), rather than relying on face-to-face communication to “get to know” a potential partner. Since men and women today no longer place the same importance on face-to-face communication it is essential that the effects of this behavior be expounded upon.

While the formation of romantic relationships is largely facilitated by technology use, relationships are also influenced by technology use after a relationship has been formed. Technology use in already-formed romantic relationships has the potential to enhance the relationship or to harm the relationship (Schade et al., 2014). Research has demonstrated that use of social networking sites, texting, and internet all have impacts that could potentially influence romantic relationships (Wilson et al., 2010; Schade et al., 2013; Murray & Campbell, 2015). Overuse of social networking can lead to addictive behavior for young people influencing their relationships with others (Blaszczynski, 2006; Wilson et al., 2010). Texting differences between men and women also show that women are more likely to use texting to

increase connection with their partner whereas men often utilize texting as a safer way to disconnect from the relationship (Schade et al., 2013). Internet use also allows people to find alternative partners more quickly if trouble arises in their relationship (Murray & Campbell, 2015). As technology use continues to increase it becomes imperative that researchers dig deeper into how romantic relationships are impacted.

It is particularly important for mental health clinicians to understand the varying impacts of technology use on intimate relationships. Recent research has demonstrated that relational functioning has been linked to health outcomes. In distressed relationships relationship satisfaction is decreased, individuals are more susceptible to health problems, and depression is higher (Grames, Miller, Robinson, Higgins, & Hinton, 2008; Kiecolt-Glaser & Newton, 2001). In the literature, different theoretical orientations to therapeutic treatment have identified components that contribute to poor health outcomes. Researchers studying emotionally focused therapy have demonstrated that learning to interact in a more positive way through expressing primary emotions decreases couple distress (Stavrianopoulos, 2015). Cognitive behavioral therapists have indicated that focusing on cognitions and behavior is an effective treatment for improving communication and decreasing distress in couples (Gurman, Lebow, & Snyder, 2015). Additionally, contextual family therapists have also demonstrated that poor relational ethics scores are associated with negative outcomes on relationship satisfaction, depression, and illness (Grames, et al., 2008). Relational ethics can be understood as a balance of give and take in relationships which establishes trust and loyalty (Hargrave & Pfitzer, 2003; Goldenthal, 1996). Give and take means that individuals can expect to receive and to offer certain things in a balanced relationship (Gangamma et al., 2012), and when a balance of give and take is not established dysfunction can occur (Gangamma et al., 2012; Hargrave, Jennings, & Anderson,

1991). It becomes increasingly important to identify the components that contribute to unhealthy relationships as research continues to demonstrate a link between poor health outcomes and unhealthy relationships. It is likely that technology use plays a role in impacting the functioning of human romantic relationships.

Purpose of the Study

The purpose of this study is to explore the impact of technology use on romantic relationships with a contextual family therapy lens as it relates to relational ethics. Research questions in this study include: 1) Does a participant's perception of the impact of technology use (i.e. very positive, somewhat positive, somewhat negative, very negative) on their relationship influence relational ethics trust scores and intimacy scores in committed relationships? 2) Is there a difference in these relational ethics scores based on Facebook use between cohabiting couples versus non-cohabiting couples? 3) How does a participant's perception of the impact of technology use on his or her relationship impact relationship satisfaction and relational ethics scores? Hypotheses for each research question include:

H1: In relationships where technology use is viewed as "very negative" or "somewhat negative" scores on the relational ethics scale for trust and intimacy scores will be lower than in relationships where technology use is viewed as "very positive" or "somewhat positive."

H2: In non-cohabiting couples relational ethics scores will be poorer when compared to cohabiting couples.

H3: Negative perceptions of the impact of technology use on the relationship will be negatively associated with relationship satisfaction and relational ethics scores.

Research questions and hypotheses were based upon findings from previous research. Research has already indicated that trust may be disrupted because of technology use (Papp, Danielewicz, & Cayemberg, 2012; Campbell & Murray, 2015), and thus it is likely that a negative perception of technology use also contributes to this disruption in trust. Additionally, researchers have cited challenges of technology use on relationships including distraction, access to pornography, and access to alternative partners (Murray & Campbell, 2015) which may be connected to lower levels of intimacy in the primary relationship. Researchers have also begun to explore different factors influencing commitment or obligation to remain in romantic relationships among different constellations of couples (Pope & Cashwell, 2013); and with technology becoming more prevalent it seems that technology use may be one of these factors influencing relational ethics scores among romantic relationships with different commitments or obligations such as between cohabiting and non-cohabiting couples. Recent research has also found that lower levels of relationship satisfaction have been associated with distraction of technology use from the primary relationship and higher levels of depression (Roberts & David, 2016; Murray & Campbell, 2015; McDaniel & Coyne, 2016; Coyne, Busby, Bushman, Gentile, Ridge, & Stockdale, 2012; Grames et al., 2008), and it is likely that relational ethics scores may also be negatively influenced due to this distraction disrupting the sense of safety and love in the relationship.

Conclusion

The remaining chapters will include a literature review on technology use and relationship (Chapter 2), methodology for the current study (Chapter 3), a condensed scholarly article including the results of the study (Chapter 4), and a discussion about the research findings including therapeutic implications and limitations (Chapter 5).

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CHAPTER 2: LITERATURE REVIEW

With technology becoming ever prevalent and intertwined into our daily lives, researchers have begun focus on how technology use influences different aspects of life. For example, researchers have examined how technology use influences work-life balance (Nam, 2014), relationship satisfaction (Schade, Sandberg, Bean, Busby, & Coyne, 2013), affect regulation (Barth, 2015), education (Pittman & Gaines, 2015), and intimate relationship development (Rappleyea, Taylor, & Fang, 2014). While these studies indicate that frequent use (i.e. regular, daily use) or inappropriate use (i.e. accessing pornography, monitoring ones partner, seeking partners outside of a relationship) of technology can possibly negatively impact each of these domains there has been little research in the mental health field exploring the impact of technology use on mental health (Murray & Campbell, 2015; Hertlein, 2012). Managing technology use will become important for maintaining health in each of these domains and others, and thus it is important that mental health clinicians have information on the influences of technology use. Recent literature has also recommended that mental health clinicians evaluate technology use in their clients (Barth, 2015). It is important for mental health clinicians to know how technology use is intertwined into their clients' lives and how they are affected by it so they can treat and understand their clients effectively (Murray & Campbell, 2015).

The purpose of this study is to explore the impact of technology use on romantic relationships with a contextual family therapy lens. Specifically, the study will investigate a participant's perception of the impact technology use is having on their current romantic relationship. Contextual family therapy is an appropriate theoretical foundation for this study due to the focus on a balance of give and take in relationships which is likely disrupted by technology use. The remainder of this literature review will focus on: 1) technology use among

emerging adults, 2) looking at technology use in relationships, and 3) discussing the theoretical orientation of this research which is based on contextual family therapy.

Technology Use among Emerging Adults

Today technology is an important mode of communication among emerging adults. According to Rappleyea et al. (2014), nearly all of emerging adults have access and use technology in their relationships on a daily basis. Emerging adults use technology to engage in a number of relational behaviors including: expressing emotions, talking with others, and maintaining relationships. Emerging adults also use technology to find and connect with potential romantic partners (Taylor et al., 2013; Schade et al., 2013). This section will briefly discuss how current technology is used in the United States, define emerging adults, and discuss current technology use of emerging adults in the U.S.

Technology Use in Contemporary U.S. Society. In contemporary U.S. society people frequently use technology to connect and communicate. The term “communication technologies” commonly refers to technology that facilitates non face-to-face communication such as email and cell phones (Ruppel, 2015). Social media is another form of communication technology that is commonly used that includes websites such as: Facebook, Instagram, Snapchat, and Pinterest (Ruppel, 2015). Access to the internet largely facilitates the use of communication technologies and social media but also supports a number of different other modes of communication such as: video gaming, chatrooms, and more (Hertlein, 2012).

A research study found that 89% of U.S. households have more than one cell phone (Kennedy, Smith, Well, & Wellman, 2008). This number has likely increased since 2008 due to greater accessibility and affordability. Additionally, Facebook is perhaps the most widely used social media website to connect with others having over 500 million users (Taylor et al., 2013:

Bowe, 2010). Access to the internet has also greatly increased due to many households in the U.S. owning a computer (Hertlein, 2012). People are also learning how to use the internet at young ages, with 72% of U.S. Americans over the age of 3 using the internet in 2010 (Hertlein, 2012). Since technology has become such a large part of how people communicate in their various relationships it is important to study how relationships are affected by technology use.

Emerging Adulthood. In recent research young adulthood is commonly referred to as “emerging adulthood.” Emerging adulthood has been defined in the literature as encompassing young adults ages 18-25 (Arnett, 2000). Arnett (2000) defines emerging adulthood as “having left the dependency of childhood and adolescence, and having not yet entered the enduring responsibilities that are normative in adulthood” (p. 469). In other words, emerging adulthood is a time of great exploration for the possibilities of the individual’s future while not yet taking on the full responsibilities of adulthood (i.e. financial independence, family responsibilities). Erik Erickson’s developmental stages describe adolescence as a time of identity exploration and early adulthood as a time of exploring intimacy (Erickson, 1994). This period of identity exploration and intimacy exploration are extended in modern U.S. culture and constitute a clarifying term of emerging adulthood which encompasses both developmental states. Emerging adulthood is a time of identity exploration and many young adults in this age demographic think that many different relationships should be explored before forming a committed relationship (Arnett, 2000; Rappleyea et al., 2014).

The need for this age group to be defined in contemporary literature as “emerging adulthood” is because there are several distinct differences in this age group than in previous generations (Arnett, 2000; Carroll et al., 2007). For example, today many adults marry later in life when their counterparts in past generations were typically married during their younger

twenties (Arnett, 2000; Carroll et al., 2007; McLanahan, 2004). Some emerging adults today may also cohabitate with their partner before marriage (Arnett, 2000; Carroll et al., 2007; McLanahan, 2004). Additionally, individuals in this emerging adulthood group follow a similar pattern of having the birth of their first child later in life than in previous generations (Arnett, 2000; Carroll et al., 2007; McLanahan, 2004). This group is also distinct in the fact that the percentage of individuals today who obtain higher education has drastically increased (Arnett, 2000; Carroll et al., 2007; McLanahan, 2004). Since many young adults today experience these significant events later in life there is no longer a precedence that early teen or even early twenties relationships signify moving into adult roles (Arnett, 2000). There is more time for these young adults to explore various relationships, roles, and responsibilities before entering fully into adulthood. With the increase in available technology today it is likely that trends in emerging adulthood have largely been influenced by technology use.

Emerging Adults and Technology Use. Emerging adults use technology to communicate with people on a regular basis (Taylor et al., 2013). As stated earlier, technological advances have permeated and altered the dating world by increasing the pool of potential partners (Murray & Campbell, 2015). Emerging adults virtually have access to any potential partner around the world and the ability to maintain a romantic relationship long-distance (Murray & Campbell, 2015). These changes in the dating world for emerging adults have influenced the traditional path towards marriage by opening up alternatives to marriage while still having access to a romantic partner (Murray & Campbell, 2015).

Additionally, emerging adults today engage in a number of new dating behaviors that were not present in previous generations. For example, today emerging adults engage in a behavior referred to as "talking" in the recent literature (Taylor et al., 2013). "Talking" can be a

time of getting to know one partner or multiple partners (Taylor et al., 2013), and "talking" is typically done through the medium of texting, social media, and other forms of technological communication (Taylor et al., 2013). Emerging adults also use technology to engage in other behaviors such as: "hanging out" "sexting," and "hook-ups" (Taylor et al., 2013). Each of these behaviors mentioned is largely facilitated through the medium of technology and has emerged as a result of available technology to meet potential partners.

Technology Use in Relationships

Technology use can have numerous positive or negative influences on relationships. Murray and Campbell (2015) reviewed the literature on potential benefits or challenges of technology use in intimate relationships. Potential benefits of technology use on intimate relationships include: relationship formation, facilitating long-distance relationships, sharing information and interests, expressing sexuality and affection, and providing communication channels (Murray & Campbell, 2015). Potential challenges of technology use on intimate relationships include: miscommunication as a result of lacking nonverbal communication, more uninhibited behaviors, access to opportunities for infidelity, access to pornography, monitoring one another, relationship abuse perpetration, overuse, and distraction (Murray & Campbell, 2015). Identifying the potential benefits and challenges of technology use on intimate relationships is important for mental health clinicians in order for these professionals to best help their clients build and maintain healthy relationships.

Relationship Formation. In recent years, the formation of romantic relationships has changed largely due to the influence technological advances (Taylor et al., 2013). Emerging adults commonly engage in various novel behaviors, typically through a technology medium, such as "hanging out" before going on a traditional date, "sexting," and "talking" to one or

multiple partners to determine compatibility (Taylor et al., 2013; Banker et al, 2010). Many emerging adults today utilize these behaviors get to know potential partners before moving into a committed romantic relationship, whereas in the past getting to know someone usually occurred on a date (Taylor et al., 2013; Banker et al., 2010; Cherlin, 2004). These behaviors may also contribute to confusion of when the relationship changes into a romantic relationship (Taylor et al., 2013).

In a recent study, Banker, Kaestle, and Allen (2010) described four relationship types: romantic, sexual, combination of romantic and sexual, and not yet romantic or sexual. Participants reported that in the not yet romantic or sexual stage people hang out, talk, flirt, become friends, and engage in casual dating (Banker et al., 2010). This stage is particularly important when looking at the evolution of relationship formation because this is how people get to know each other today before entering into a romantic relationship. As stated previously, many of these dating behaviors are facilitated through the mechanism of communication technology and social media usage. While men and women both agree that utilizing technology in the formation of a relationship is appropriate (Taylor et al., 2013), many individuals also report that more face-to-face communication is expected once the relationship has been established (Ruppel, 2015).

Technology Use in Established Relationships. Research has indicated that self-disclosure is an important component for developing and maintaining a romantic relationship (Ruppel, 2015). As a relationship develops, people expect that breadth of information shared (i.e. number of content domains revealed), and the depth of information shared (i.e. intimacy of information in each content domain) will increase (Ruppel, 2015). According to Ruppel (2015), breadth and depth in romantic relationships have been associated with certainty, intimacy,

feeling safe in the relationship, closeness, and relational quality. Additionally, Arriga (2001) argued that relationship stability is increased when the quality of certainty is present. Ongoing self-disclosure likely contributes to relationship stability and is often enhanced through the use of technology.

While technology can facilitate the continued development of a romantic relationship, it can also cause harm to a developing relationship. Arriga (2001) outlines several factors that can contribute to relationship break up, these include: low levels of satisfaction and closeness, high rates of negative interactions or negative communication styles, and availability of attractive and accessible partner alternatives. Technology use has the potential to increase availability of partner alternatives because of online services connecting people (Murray & Campbell, 2015), increase negative interactions because of miscommunication with lack of nonverbal cues or safety in complaining/attacking one's partner through technology (Ruppel, 2015), and decrease closeness and satisfaction by spending too much time using technology rather than communicating with one's partner (Murray & Campbell, 2015). Given that technology use has been associated with the above, it is probable that it is also importantly linked with relationship stability or break up.

It is essential for couples to adopt appropriate boundaries around their technology use so that the relationship is not put in jeopardy (Arriga, 2001). By following boundaries established by the couple (i.e. time restrictions, access to partner's devices), positive influences of technology might be increased rather than letting potential negative influences threaten the relationship. It would be important for mental health clinicians to assess for technology use in their clients so that appropriate boundaries might be established during treatment.

Theoretical Foundation: Contextual Family Therapy

In the present study, contextual family therapy is utilized as the theoretical foundation for answering the research questions. Contextual family therapy is an appropriate model to explore how technology use impacts relational outcomes due to the focus on a balance of give and take in relationships which is essential for functional relationships (Boszormenyi-Nagy & Krasner, 1986). Contextual family therapy is a transgenerational model of therapy that was developed largely by Ivan Boszormenyi-Nagy (Hargrave & Pfitzer, 2003). This theory stemmed from intergenerational and psychoanalytic models of therapy such as Bowen family therapy, object-relations, and family of origin therapy (Gehart, 2014). Contextual family therapy includes four dimensions of reality that influence relational interactions: facts of life, individual psychology, systemic patterns of interaction, and relational ethics (Hargrave & Pfitzer, 2003). Relational ethics is the cornerstone of this theory because it is the foundation for how health is defined, how change occurs, and how relationships are maintained.

Relational Ethics. Relational ethics can be understood as a balance of give and take in relationships which establishes trust and loyalty (Hargrave & Pfitzer, 2003; Goldenthal, 1996). Relational ethics is where change and healing typically occur and this pattern of relational transactions is perpetuated throughout generations (Gangamma, Bartle-Haring, & Glebova, 2012; Grames, Miller, Robinson, Higgings, & Hinton, 2008; Hargrave & Pfitzer, 2003; Goldenthal, 1996; Hargrave, Jennings, & Anderson, 1991). Relational ethics is a broad concept that includes ideas such as: “give and take” in relationships, trust, loyalty, entitlement, and accountability for one’s actions. In relationships people are entitled to receive certain things and are also expected to give certain things, such as love. When this giving and taking does not

happen in a balanced manner, dysfunction in the relationship usually results (Gangamma et al., 2012; Hargrave, Jennings, & Anderson, 1991).

“Give and take” is also referred to as fairness or balance which means that individuals can expect to receive and to give certain things in a balanced relationship (Gangamma et al., 2012). Trust is how individuals learn to interact with others and helps to promote positive relationships (Gangamma et al., 2012). This can be described as a cycle; Trust is increased as individuals continually experience a balance of “give and take” and when individuals have trust they are able to give more in the relationship (Hargrave, Jennings, & Anderson, 1991). Loyalty describes the bond between individuals, especially parent and child (Gangamma et al., 2012). Entitlement has been described as an ethical “guarantee” of being cared for in a relationship (Gangamma et al., 2012; Boszormenyi-Nagy & Krasner, 1986). When individuals do not receive this entitlement from the relationship for care, nurturing, love, and warmth they seek out these things in a destructive manner; this is referred to destructive entitlement (Hargrave, Jennings, & Anderson, 1991; Boszormenyi-Nagy & Krasner, 1986). Accountability for one’s actions means taking responsibility or owning the choices made and the consequences that influence and individual and his or her relationships (Hargrave, Jennings, & Anderson, 1991).

Relational ethics is at play both with vertical and horizontal relationships. A vertical relationship is one that is not considered equal, such as the relationship between parent and child (Schmidt, Green, Sibley, & Prouty, 2015). Parents are expected to give more in this relationship than children. When the vertical relationship has experienced a continual imbalance in relational ethics, destructive and untrustworthy relationships are produced (Hargrave, Jennings, & Anderson, 1991; Van Heudsen & Van Den Eerenbeemet, 1987). Healthy or unhealthy relationships are passed down from generation to generation. A horizontal relationship is an

equal relationship, such as the relationship between husband and wife (Grames et al., 2008). This means that each partner is entitled to receive things like: respect, care, love, intimacy, nurture, financial responsibility, and fidelity (Hargrave & Pfitzer, 2003). Relational ethics are balanced when each person is able to focus on giving these things rather than worrying about what they are entitled to receive but are not receiving (Grames et al., 2008).

An important component of relational ethics is that individuals learn to experience emotion and thought through relationships with other people (Hargrave, Jennings, & Anderson, 1991; Buber, 1958). When an individual does not receive what her or she is entitled to receive in a relationship, destructive entitlement results and might be manifest as paranoid attitudes, hostility, emotional cutoff, or destructive behavior (Hargrave, Jennings, & Anderson, 1991; Boszormenyi-Nagy, & Krasner, 1986). Research has also indicated that health is related to relational functioning. In unhealthy relationships relationship satisfaction is decreased, individuals are more susceptible to health problems, and depression is higher (Grames et al., 2008). Relational ethics places a central role in the health of relationships which later translates to physical and mental health.

Integrating Relational Ethics to Technology Use among Emerging Adults. As stated above relational ethics relies on concepts such as trust, loyalty, and entitlement (Gangamma et al., 2015; Schmidt et al., 2015; Hargrave & Pfitzer, 2003; Goldenthal, 1996). Research has indicated that in relationships with too much technology use trust may be disrupted (Papp, Danielewicz, & Cayemberg, 2012; Campbell & Murray, 2015). Trust is an important component of relational ethics because it is the mechanism by which individuals learn to interact with their partner (Gangamma et al., 2015). If high use of technology influences trust negatively in relationships, this negative impact likely spills over into other relational ethics components. It

seems that the prolonged use of technology may also disrupt the balance of give and take in a relationship because this balance or fairness should be evolving throughout the span of the relationship (Gangamma et al., 2015). Additionally, it seems that technology use may also introduce loyalty conflicts within the partnership to either communicating with family of origin, friends on Facebook, work-spill over, or potential alternative relationships. Since emerging adults tend to be the most frequent users of technology it would be important to look at how this behavior influences their intimate relationships. Linking relational ethics to technology use in emerging adulthood would be important for mental health clinicians so that they might have a more complete picture of how technology use is impacting the relationship.

Conclusion

After reviewing the literature, it is clear that technology use influences romantic relationships in a number of ways. It is also evident that relational ethics in contextual family therapy is a potential conceptualization tool for mental health clinicians to address technology related concerns in relationships. Additionally, it is clear that there is a dearth in the mental health literature of how clinicians may best be able to intervene with clients and their technology use. This study aims to connect the influence of technology use with a construct (relational ethics) mental health clinicians may use to conceptualize, assess, and treat their clients. This connection will provide a bridge to the gap mental health clinicians face when approaching treatment of technology use with their clients.

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CHAPTER 3: METHODOLOGY

According to the literature review, the effects of technology use on romantic relationships may influence components of relational ethics. It seems that technology use would influence the trust and intimacy in a committed relationship due to previous research already indicating that technology use may disrupt trust (Papp, Danielewicz, & Cayemberg, 2012; Campbell & Murray, 2015), and that intimacy may be disrupted by the negative impacts of technology such as access to alternative partners (Murray & Campbell, 2015). The literature also seems to indicate that technology use may influence total relational ethics scores among cohabiting and non-cohabiting couples due to different forces influencing commitment or obligation to remain in a relationship (Pope & Cashwell, 2013). Research also seems to suggest that one's perception of the impact technology use has on a relationship would impact relationship satisfaction and relational ethics scores due to potential distraction from the primary relationship (Roberts & David, 2016; Murray & Campbell, 2015; McDaniel & Coyne, 2016; Coyne, Busby, Bushman, Gentile, Ridge, & Stockdale, 2012; Grames et al., 2008), and disruption in the sense of safety and love in the relationship (Hargrave, Anderson, & Jennings, 1991).

In this study researchers utilized an online survey to isolate and gather data on these three research questions. This study focuses on technology use and relational ethics because it is important for mental health clinicians to know the influence of technology use on romantic relationships in an era that relies on daily engagement with technology. A simple ex post facto research design was utilized to compare the experience of individuals in relationships where technology use is perceived as negatively impacting the relationship to individuals in relationships where technology use is perceived as positively impacting the relationship.

Purpose of the Study

The purpose of this study is to explore the impact of technology use on romantic relationships with a contextual family therapy lens as it relates to relational ethics. Research questions in this study include: 1) Is a participant's perception of the impact of technology use (i.e. very positive, somewhat positive, somewhat negative, very negative) on their relationship associated with relational ethics trust scores and intimacy scores in committed relationships? 2) Is there a difference in these relational ethics scores based on Facebook use between cohabiting couples versus non-cohabiting couples? 3) How is a participant's perception of the impact of technology use on his or her relationship associated with relationship satisfaction and relational ethics scores? Hypotheses for each research question include:

H1: Relationships where technology use is viewed as "very negative" or "somewhat negative" will be associated with lower scores on the relational ethics scale for trust and intimacy than in relationships where technology use is viewed as "very positive" or "somewhat positive."

H2: Poorer relational ethics scores will be associated with non-cohabiting couples when compared to cohabiting couples.

H3: Negative perceptions of the impact of technology use on the relationship will be negatively associated with relationship satisfaction and relational ethics scores.

Research questions and hypotheses were based upon findings from previous research. Research has already indicated that trust may be disrupted because of technology use (Papp, Danielewicz, & Cayemberg, 2012; Campbell & Murray, 2015), and thus it is likely that a negative perception of technology use also contributes to this disruption in trust. Additionally, researchers have cited challenges of technology use on relationships including distraction, access

to pornography, and access to alternative partners (Murray & Campbell, 2015) which may be connected to lower levels of intimacy in the primary relationship. Researchers have also begun to explore different factors influencing commitment or obligation to remain in romantic relationships among different constellations of couples (Pope & Cashwell, 2013); and with technology becoming more prevalent it seems that technology use may be one of these factors influencing relational ethics scores among romantic relationships with different commitments or obligations such as between cohabiting and non-cohabiting couples. Recent research has also found that lower levels of relationship satisfaction have been associated with distraction of technology use from the primary relationship and higher levels of depression (Roberts & David, 2016; Murray & Campbell, 2015; McDaniel & Coyne, 2016; Coyne, Busby, Bushman, Gentile, Ridge, & Stockdale, 2012; Grames et al., 2008), and it is likely that relational ethics scores may also be negatively influenced due to this distraction disrupting the sense of safety and love in the relationship.

Participants

The study sample consisted of 248 participants, primarily from East Carolina University (See Table 1). Participants were recruited mainly from entry level Psychology courses at the University. Participants were offered extra credit as compensation for their participation in the study. Collecting data from college students ensures that participants likely fit the description of emerging adults as outlined above by Arnett (2000). For the purposes of this study, only individuals between the ages of 18-25 were included in the analyses because this age group is classified as emerging adults. Looking at this demographic age group makes certain that the data represents the relationship trends and technology use of this unique group. Additionally, only individuals who indicated involvement in some type of romantic relationship (i.e. married,

engaged, dating one partner, dating multiple partners) were included in the analyses. If an individual indicated that they were dating multiple partners her or she was asked to consider the partner they felt emotionally closest to when answering the remaining questions in the survey.

Participants were included from various diverse backgrounds, and none were excluded based upon any demographic information. Demographic information indicated that 73.8% of participants were female, and 26.2% were male. The average age of participants was 19.90 years, and 88.2% were from the southeast region of the United States. The races indicated by the sample included 63.7% White, 23.4% African American, 2.4% Asian, 4.8% Hispanic/Latino, 1.2% Pacific Islander, 2% American Indian or Alaskan Native, and 2.4% other. Most participants identified as heterosexual (93.5%). Participants also indicated which devices they own or frequently use with results of: 40.3% cell phone, 85.9% smart phone, 34.3% iPad/tablet, and 85.1% laptop.

Summary of Inclusion and Exclusion Criteria. Participants included in the sample fit the description of emerging adulthood by being between the ages of 18-25. Participants who were younger or older than this age group were excluded from the study. Participants who indicated being involved in any type of romantic relationship were included in the study, while those who did not were excluded. Participants from any culture, race, religion, socioeconomic status, sexual orientation or other background were all included in the sample.

Procedures

This study utilized convenience sampling and random sampling to obtain a sample fitting the inclusion criteria. To obtain this sample, participants were recruited mainly from East Carolina University in required general education undergraduate entry level Psychology classes. Participants were invited to take part in an online survey. The survey included an informed

consent document in which participants had to agree to before beginning the survey. This document explained the purpose of the study, and potential risks and benefits of participating. Extra credit was offered as incentive to individuals who completed the survey. Additional participants from different universities or who are not currently students were recruited through Facebook invitations and mass emails. These Facebook links and mass email links detailed the purpose of the study, qualifications to participate, and directed the participant to the online link to sign the informed consent document and complete the survey. The sampling process was ongoing until at least 100 participants completed the survey. The sampling process was offered during a Fall and Spring semester and ended after about two weeks of being open each semester.

The consent form stated the purpose of the study and the methods that were used to collect and analyze data, which will be explained in detail below. The form also included details regarding confidentiality of participant's interactions and identities, and contact information of the principal investigator if participants were in need of further information. Participant's identities and interactions were kept confidential by using online secure Qualtrics software with the identity of participants not being associated with their survey responses. Additionally, data was securely stored on East Carolina University premises and was only able to be accessed by approved researchers. The consent form also mentioned that the study obtained IRB approval, and detailed the possible benefits and risks associated in the study. Possible benefits included: extra credit after completion of the study, and a feeling of helpfulness in developing more knowledge about the influences of technology on romantic relationships. Possible risks were no different than would be expected in everyday living. Participation was voluntary and participants were informed that they could discontinue the study at any time. The study involved one survey that took approximately 30 minutes to complete. The survey was offered in a Fall

and Spring semester for a period of about two weeks, and could be completed at any time during the response period that was convenient for the participant.

Measures

As stated earlier, the purpose of this study was to research how technology use influences relational ethics scores in romantic relationships by exploring three research questions. These research questions were: 1) Is a participant's perception of the impact of technology use (i.e. very positive, somewhat positive, somewhat negative, very negative) on their relationship associated with relational ethics trust scores and intimacy scores in committed relationships? 2) Is there a difference in these relational ethics scores based on Facebook use between cohabiting couples versus non-cohabiting couples? 3) How is a participant's perception of the impact of technology use on his or her relationship associated with relationship satisfaction and relational ethics scores?

A participant's perception of the impact technology use has on his or her relationship was explored through the survey question: "Select the answer that best describes the impact of technology use on your relationship." Answer options included: very positive, somewhat positive, somewhat negative, and very negative. A participant's Facebook use was assessed by another survey question: "Please indicate how often you use Facebook in a typical day." Answer options included: never, rarely, sometimes, regularly, and very frequently. Cohabitation status was assessed with a simple "yes/no" response if the participant indicated they were involved in any type of romantic relationship. Relational ethics score, relational ethics trust scores, intimacy scores, and relationship satisfaction scores were assessed by the following measures.

Relational Ethics Scale (RES). The Relational Ethics Scale measures the balance in participants' relationships. The Relational Ethics Scale is a 24-item scale rated on a 5-point

Likert scale. Higher scores indicate a greater perception of fairness and balance in the relationship. The first 12 items of this scale look at aspects of relational ethics in vertical relationships (participant's relationships with people in their family of origin), and the last 12 items look at the same aspects of relational ethics but in horizontal relationships (participant's relationships with their partner). The aspects of relational ethics that are measured in this scale include trust, justice, loyalty, and entitlement (See Figure 1, p. 46).

Participants only completed the horizontal scale in this study since the focus of the research questions was about relationships with romantic partners. To measure trust, researchers utilized a subset of the total horizontal scale which included six items that focus on aspects of trust. Examples of items in the horizontal relationships subscale include: "There is unequal contribution to the relationship between me and this individual (Horizontal Trust and Justice)," "When I feel hurt, I say or do hurtful things to this individual (Horizontal Entitlement)," and "Before I make important decisions, I ask for the opinions of this person (Horizontal Loyalty)." Higher scores on the total scale and subscales indicate that there is greater perception of balance or fairness in the evaluated relationships. According to Hargrave et al. (1991), the Relational Ethics Scale has good internal consistency, with a Cronbach's alpha coefficient reported for the total scale of .96 and between .93 and .96 for the subscales. In the current study, the Cronbach's alpha coefficient was .861 for the horizontal subscale, and .808 for the trust items.

Miller Social Intimacy Scale (MSIS). The Miller Social Intimacy Scale assesses intimacy in romantic relationships. The Miller Social Intimacy Scale is a 17-item scale rated on a 5-point Likert scale ranging from "very rarely" to "almost always." Higher scores indicate greater levels of intimacy. Examples of items include: "When you have leisure time how often do you choose to spend it with him/her alone?" "How much do you feel like being encouraging and supportive

to him/her when he/she is unhappy?” and “How much damage is caused by a typical disagreement in your relationship with him/her?” According to Miller and Lefcourt (1982), the Miller Social Intimacy Scale has good internal consistency, with a Cronbach’s alpha coefficient reported of .91. In the current study, the Cronbach’s alpha coefficient was .914.

Relationship Assessment Scale (RAS). The Relationship Assessment Scale measures general relationship satisfaction. The Relationship Assessment Scale is a 7-item scale rated on a 5-point Likert scale with “1” indicating low satisfaction, and “5” indicating high satisfaction (Hendrick, 1988). The higher the total score, the more satisfied an individual is with his or her relationship. Examples of items include: “In general, how satisfied are you with your relationship?” “How often do you wish you hadn’t gotten into this relationship?” and “To what extent has your relationship met your original expectations?” According to Hendrick (1988), the Relationship Assessment Scale has good internal consistency, with a Cronbach’s alpha coefficient reported of .86. In the current study, the Cronbach’s alpha coefficient was .842.

Analysis

Researchers completed a quantitative analysis of the data collected. The researchers then analyzed the data using SPSS software. Tables and figures are provided to summarize the findings of the study.

Researchers utilized a multivariate analysis of variance (MANOVA) to analyze the first research question. Perception of the impact technology use has on the relationship was the independent categorical variable, and relational ethics trust scores and intimacy scores were the continuous dependent variables. A MANOVA is an appropriate statistical analysis for this research question because the purpose of this analysis is to compare the impact of the independent variable on a variety of outcome measures (Pallant, 2013). Researchers also utilized

a MANOVA to analyze the third research. Perception of the impact technology use has on the relationship was the independent categorical variable, and relational ethics total scores and relationship satisfaction scores were the continuous dependent variables.

Researchers utilized a one-way between-groups analysis of variance (ANOVA) to analyze the second research question. Relationship status (cohabiting, or non-cohabiting) was the independent categorical variable, and relational ethics scores were the continuous dependent variables. This analysis is appropriate for this research question because the purpose of this question is to determine if there are significant differences in the mean scores of the dependent variable between the groups (Pallant, 2013).

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CHAPTER 4: MANUSCRIPT

Communication technologies have become an essential component of daily living. These technologies are utilized in many spheres such as employment settings, education, and interpersonal relationships (Murray & Campbell, 2015; Helsper & Whitty, 2010) to help people connect and communicate. Research indicates that among those who use communication technologies, emerging adults (ages 18-25) tend to use these technologies most frequently (Lenhart, Purcell, Smith, & Zickuhr, 2010; Pew Internet and American Life Project, 2010). Additionally, many researchers have indicated that technology use impacts diverse domains of life such as relationships (Schade, Sandberg, Bean, Busby, & Coyne, 2014; Taylor, Rappleyea, Fang, & Cannon, 2013; Wilson, Fornasier, & White, 2010). As technology continues to develop and become even more intertwined into emerging adults' daily living it is essential for researchers to more fully explore the impact this use has on relationships. The purpose of this study is to investigate the impact technology use has on emerging adults romantic relationships from a contextual lens. Contextual family therapy is an appropriate theoretical foundation for this study due to the focus on a balance of give and take in relationships which is likely disrupted by technology use. More specifically, the authors investigate how technology use influences romantic relationship satisfaction, intimacy satisfaction, and relational ethics scores.

Literature Review

With technology becoming ever prevalent and intertwined into our daily lives, researchers have begun focus on how technology use influences different aspects of life. For example, researchers have examined how technology use influences work-life balance (Nam, 2014), relationship satisfaction (Schade et al., 2013), affect regulation (Barth, 2015), education (Pittman & Gaines, 2015), and intimate relationship development (Rappleyea, Taylor, & Fang,

2014). While these studies indicate that frequent use (i.e. regular, daily use) or inappropriate use (i.e. accessing pornography, monitoring ones partner, seeking partners outside of a relationship) of technology can possibly negatively impact each of these domains there has been little research in the mental health field exploring the impact of technology use on mental health (Murray & Campbell, 2015; Hertlein, 2012). Managing technology use will become important for maintaining health in each of these domains and others, and thus it is important that mental health clinicians have information on the influences of technology use. Recent literature has also recommended that mental health clinicians evaluate technology use in their clients (Barth, 2015). It is important for mental health clinicians to know how technology use is intertwined into their clients' lives and how they are affected by it so they can treat and understand their clients effectively (Murray & Campbell, 2015).

Technology Use among Emerging Adults

Today technology is an important mode of communication among emerging adults. According to Rappleyea et al. (2014), nearly all of emerging adults have access and use technology in their relationships on a daily basis. Emerging adults use technology to engage in a number of relational behaviors including: expressing emotions, talking with others, and maintaining relationships. Emerging adults also use technology to find and connect with potential romantic partners (Taylor et al., 2013; Schade et al., 2013). According to Pew Internet and American Life Project (2010) about 78% of Americans use the internet on a daily basis, and 88% of young adults (ages 18-24) use the internet daily. Additionally, research indicates that 72% of young adults (ages 18-29) reported that they use social networking sites (Lenhart, Purcell, Smith, & Zickuhr, 2010), and that they are predominately utilizing technology to connect with other people, especially potential romantic partners (Rappleyea et al., 2014; Schade

et al., 2013; Subrahmanyam & Greenfield, 2008; Van den Einjden & Meerkerk, 2008; Willoughby, 2008). Research has made it clear that technology and social networking sites are important to facilitate communication and friendships, dating relationships, and committed romantic relationships in young adulthood (Wilson et al., 2010). Since frequency of use is highest among emerging adults, they will likely experience the greatest impact in multiple domains including relationships (Hertlein, 2012).

Technology's Impact on Relationships

Recent research has indicated that communication technologies have already begun to influence romantic relationship formation. More recently, the process of forming a romantic relationship may not follow a traditional (i.e. face to face) path as in previous generations (Taylor et al., 2013; Banker, Kaestle, & Allen, 2010; Cere, 2001). This process has become multifaceted largely because communication technologies have made it possible to get to know someone before going on the first "date." Emerging adults commonly engage in various novel behaviors, typically through a technology medium, such as "hanging out" before going on a traditional date, "sexting," and "talking" to one or multiple partners to determine compatibility (Taylor et al., 2013; Banker et al, 2010). In previous generations, individuals went on "dates" and interacted face-to-face to explore potential romantic relationships (Cherlin, 2004). Today, both men and women view the use of technology as an appropriate mechanism to explore a potential romantic relationship (Taylor et al., 2013), rather than relying on face-to-face communication to "get to know" a potential partner.

Research has also indicated that self-disclosure is an important component for developing and maintaining a romantic relationship (Ruppel, 2015). As a relationship develops, people expect that breadth of information shared (i.e. number of content domains revealed), and the

depth of information shared (i.e. intimacy of information in each content domain) will increase (Ruppel, 2015). According to Ruppel (2015), breadth and depth in romantic relationships have been associated with certainty, intimacy, feeling safe in the relationship, closeness, and relational quality. Additionally, Arriga (2001) argued that relationship stability is increased when the quality of certainty is present. Ongoing self-disclosure likely contributes to relationship stability and is often enhanced through the use of technology.

While the formation of romantic relationships is largely facilitated by technology use, relationships are also influenced by technology use after a relationship has been formed. Technology use in already-formed romantic relationships has the potential to enhance the relationship or to harm the relationship (Schade et al., 2014). Murray and Campbell (2015) reviewed the literature on potential benefits of technology use in intimate relationships. Potential benefits of technology use on intimate relationships include: relationship formation, facilitating long-distance relationships, sharing information and interests, expressing sexuality and affection, and providing communication channels (Murray & Campbell, 2015). These are all examples of how technology use can potentially enhance a romantic relationship. However, just as technology can support relational goals it has tremendous capacity to harm as well. Overuse of social networking can lead to addictive behavior for young people influencing their relationships with others (Blaszczynski, 2006; Wilson et al., 2010). Texting differences between men and women also show that women are more likely to use texting to increase connection with their partner, whereas men often utilize texting as a safer way to disconnect from the relationship (Schade et al., 2013). Internet use may allow people an avenue to locate alternative partners more quickly if trouble arises in their relationship (Murray & Campbell, 2015). As technology use becomes a more central facet of relating to others it becomes imperative that researchers

understand the dimensions by which this communication medium impacts romantic relationships.

Relational functioning has been linked to a myriad of health outcomes (Grames, Miller, Robinson, Higgins, & Hinton, 2008; Kiecolt-Glaser & Newton, 2001). In distressed relationships, satisfaction is decreased, individuals are more susceptible to health problems, and depression is higher (Grames et al., 2008; Kiecolt-Glaser & Newton, 2001). In the literature, different theoretical orientations to therapeutic treatment have identified components that contribute to poor health outcomes. Researchers studying emotionally focused therapy have demonstrated that learning to interact in a more positive way through expressing primary emotions decreases couple distress (Stavrianopoulos, 2015). Cognitive behavioral therapists have indicated that focusing on cognitions and behavior is an effective treatment for improving communication and decreasing distress in couples (Gurman, Lebow, & Snyder, 2015). Additionally, contextual family therapists have also demonstrated that poor relational ethics scores are associated with negative outcomes on relationship satisfaction, depression, and illness (Grames et al., 2008). Relational ethics can be understood as a balance of give and take in relationships which establishes trust and loyalty (Hargrave & Pfitzer, 2003; Goldenthal, 1996). Give and take means that individuals can expect to receive and to offer certain things in a balanced relationship (Gangamma et al., 2012), and when a balance of give and take is not established dysfunction can occur (Gangamma et al., 2012; Hargrave, Jennings, & Anderson, 1991). It becomes increasingly important to identify the components that contribute to unhealthy relationships as research continues to demonstrate a link between poor health outcomes and unhealthy relationships. It is likely that technology use plays a role in impacting the functioning of human romantic relationships.

Theoretical Orientation: Contextual Family Therapy Lens

The authors use contextual family therapy as the theoretical foundation for answering the research questions. Contextual family therapy is an appropriate model to explore how technology use impacts relational outcomes due to the focus on a balance of give and take in relationships which is essential for functional relationships (Boszormenyi-Nagy & Krasner, 1986). While therapists utilize contextual family therapy to guide their case conceptualization, this model can also be applied to non-clinical samples to explore relational functioning (Grames et al., 2008). Thus, this study applies a contextual family therapy framework to investigate the relational functioning of a non-clinical sample in regards to technology use.

The cornerstone of contextual theory is relational ethics because it is the foundation for how health is defined, how change occurs, and how relationships are maintained. Relational ethics is a broad concept that includes ideas such as: “give and take” in relationships, trust, loyalty, entitlement, and accountability for one’s actions. Relational ethics can be understood as a balance of give and take in relationships which establishes trust and loyalty (Hargrave & Pfitzer, 2003; Goldenthal, 1996). In relationships people are entitled to receive certain things and are also expected to give certain things, such as love. When this giving and taking does not happen in a balanced manner, dysfunction in the relationship usually results (Gangamma et al., 2012; Hargrave, Jennings, & Anderson, 1991). Trust is how individuals learn to interact with others and helps to promote positive relationships (Gangamma et al., 2012). Loyalty describes the bond between individuals, especially parent and child (Gangamma et al., 2012). Entitlement has been described as an ethical “guarantee” of being cared for in a relationship (Gangamma et al., 2012; Boszormenyi-Nagy & Krasner, 1986). When individuals do not receive this entitlement from the relationship for care, nurturing, love, and warmth they seek out these things

in a destructive manner; this is referred to as destructive entitlement (Hargrave et al., 1991; Boszormenyi-Nagy & Krasner, 1986). Accountability for one's actions means taking responsibility or owning the choices made and the consequences that influence and individual and his or her relationships (Hargrave et al., 1991).

An important component of relational ethics is that individuals learn to experience emotion and thought through relationships with other people (Hargrave et al., 1991; Buber, 1958). When an individual does not receive what her or she is entitled to receive in a relationship, destructive entitlement results and might be manifest as paranoid attitudes, hostility, emotional cutoff, or destructive behavior (Hargrave et al., 1991; Boszormenyi-Nagy, & Krasner, 1986). Research has also indicated that health is related to relational functioning. In unhealthy relationships; relationship satisfaction is decreased, individuals are more susceptible to health problems, and depression is higher (Grames et al., 2008). Relational ethics places a central role in the health of relationships which later translates to physical and mental health.

Integrating Relational Ethics to Technology Use among Emerging Adults

Research has indicated that in relationships with too much technology use trust may be disrupted (Papp, Danielewicz, & Cayemberg, 2012; Campbell & Murray, 2015). Trust is an important component of relational ethics because it is the mechanism by which individuals learn to interact with their partner (Gangamma et al., 2015). If high use of technology influences trust negatively in relationships, this negative impact likely spills over into other relational ethics components. It seems that the prolonged use of technology may also disrupt the balance of give and take in a relationship because this balance or fairness should be evolving throughout the span of the relationship (Gangamma et al., 2015). Additionally, it seems that technology use may also introduce loyalty conflicts within the partnership to either communicating with family of origin,

friends on Facebook, work-spill over, or potential alternative relationships (Murray & Campbell, 2015). Since emerging adults tend to be the most frequent users of technology it would be important to look at how this behavior influences their intimate relationships. Linking relational ethics to technology use in emerging adulthood would be important for mental health clinicians so that they might have a more complete picture of how technology use is impacting the relationship.

Purpose of the Study

The purpose of this study is to explore the impact of technology use on romantic relationships with a contextual family therapy lens as it relates to relational ethics. Research questions in this study include: 1) Is a participant's perception of the impact of technology use (i.e. very positive, somewhat positive, somewhat negative, very negative) on their relationship associated with relational ethics trust scores and intimacy scores in committed relationships? 2) Is there a difference in these relational ethics scores based on Facebook use between cohabiting couples versus non-cohabiting couples? 3) How is a participant's perception of the impact of technology use on his or her relationship associated with relationship satisfaction and relational ethics scores? Hypotheses for each research question include:

H1: Relationships where technology use is viewed as "very negative" or "somewhat negative" will be associated with lower scores on the relational ethics scale for trust and intimacy than in relationships where technology use is viewed as "very positive" or "somewhat positive."

H2: Poorer relational ethics scores will be associated with non-cohabiting couples when compared to cohabiting couples.

H3: Negative perceptions of the impact of technology use on the relationship will be negatively associated with relationship satisfaction and relational ethics scores.

Research questions and hypotheses were based upon findings from previous research. Research has already indicated that trust may be disrupted because of technology use (Papp, Danielewicz, & Cayemberg, 2012; Campbell & Murray, 2015), and thus it is likely that a negative perception of technology use also contributes to this disruption in trust. Additionally, researchers have cited challenges of technology use on relationships including distraction, access to pornography, and access to alternative partners (Murray & Campbell, 2015) which may be connected to lower levels of intimacy in the primary relationship. Researchers have also begun to explore different factors influencing commitment or obligation to remain in romantic relationships among different constellations of couples (Pope & Cashwell, 2013); and with technology becoming more prevalent it seems that technology use may be one of these factors influencing relational ethics scores among romantic relationships with different commitments or obligations such as between cohabiting and non-cohabiting couples. Recent research has also found that lower levels of relationship satisfaction have been associated with distraction of technology use from the primary relationship and higher levels of depression (Roberts & David, 2016; Murray & Campbell, 2015; McDaniel & Coyne, 2016; Coyne, Busby, Bushman, Gentile, Ridge, & Stockdale, 2012; Grames et al., 2008), and it is likely that relational ethics scores may also be negatively influenced due to this distraction disrupting the sense of safety and love in the relationship.

Methods

Procedures

Researchers utilized Qualtrics online survey software to collect data by distributing a survey to undergraduate general education Psychology classes at a university in the southeast United States for extra credit. Researchers collected a convenience sample of emerging adults ages 18-25. The survey included an informed consent document that outlined the purposes of the study and indicated approval from the institution's review board to conduct the study in which participants had to agree to before beginning the survey. Participants first completed demographic questions, followed by questions indicating use of technology and relationship status, perception of the impact technology has on their relationship (i.e. very positive, somewhat positive, somewhat negative, very negative) after which three measures were completed: the relationship assessment scale, the miller social intimacy scale, and the relational ethics scale.

Relationship Assessment Scale (RAS). The Relationship Assessment Scale measures general relationship satisfaction. The Relationship Assessment Scale is a 7-item scale rated on a 5-point Likert scale with "1" indicating low satisfaction, and "5" indicating high satisfaction (Hendrick, 1988). The higher the total score, the more satisfied an individual is with his or her relationship. Examples of items include: "In general, how satisfied are you with your relationship?" "How often do you wish you hadn't gotten into this relationship?" and "To what extent has your relationship met your original expectations?" According to Hendrick (1988), the Relationship Assessment Scale has good internal consistency, with a Cronbach's alpha coefficient reported of .86. In the current study, the Cronbach's alpha coefficient was .842.

Miller Social Intimacy Scale (MSIS). The Miller Social Intimacy Scale assesses intimacy in romantic relationships. The Miller Social Intimacy Scale is a 17-item scale rated on a 5-point

Likert scale ranging from “very rarely” to “almost always.” Higher scores indicate greater levels of intimacy. Examples of items include: “When you have leisure time how often do you choose to spend it with him/her alone?” “How much do you feel like being encouraging and supportive to him/her when he/she is unhappy?” and “How much damage is caused by a typical disagreement in your relationship with him/her?” According to Miller and Lefcourt (1982), the Miller Social Intimacy Scale has good internal consistency, with a Cronbach’s alpha coefficient reported of .91. In the current study, the Cronbach’s alpha coefficient was .914.

Relational Ethics Scale (RES). The Relational Ethics Scale measures the balance in participants’ relationships. The Relational Ethics Scale is a 24-item scale rated on a 5-point Likert scale. Higher scores indicate a greater perception of fairness and balance in the relationship. The first 12 items of this scale look at aspects of relational ethics in vertical relationships (participant's relationships with people in their family of origin), and the last 12 items look at the same aspects of relational ethics but in horizontal relationships (participant's relationships with their partner). The aspects of relational ethics that are measured in this scale include trust, justice, loyalty, and entitlement (See Figure 1).

Participants only completed the horizontal scale in this study since the focus of the research questions was about relationships with romantic partners. To measure trust, researchers utilized a subset of the total horizontal scale which included six items that focus on aspects of trust. Examples of items in the horizontal relationships subscale include: "There is unequal contribution to the relationship between me and this individual (Horizontal Trust and Justice)," "When I feel hurt, I say or do hurtful things to this individual (Horizontal Entitlement)," and "Before I make important decisions, I ask for the opinions of this person (Horizontal Loyalty)." Higher scores on the total scale and subscales indicate that there is greater perception of balance

or fairness in the evaluated relationships. According to Hargrave et al. (1991), the Relational Ethics Scale has good internal consistency, with a Cronbach’s alpha coefficient reported for the total scale of .96 and between .93 and .96 for the subscales. In the current study, the Cronbach’s alpha coefficient was .861 for the horizontal subscale, and .808 for the trust items.

Figure 1

Relational Ethics Horizontal Subscales

Statement	Construct
	<i>Horizontal Trust and Justice</i>
2. I do not trust this individual to look out for my best interests.	
4. This person stands beside me in times of trouble or joy.	
6. There is unequal contribution to the relationship between me and this individual.	
8. We are equal partners in this relationship.	
11. I am taken for granted or used unfairly in this relationship.	
12. This person listens to me and values my thoughts.	
	<i>Horizontal Loyalty</i>
1. I try to meet the emotional needs of this person.	
5. Before I make important decisions, I ask for the opinions of this person.	
9. We give of ourselves to benefit on another.	
	<i>Horizontal Entitlement</i>
3. When I feel hurt, I say or do hurtful things to this person.	
7. When I feel angry, I tend to take it out on this person.	
10. I take advantage of this individual.	

Participants

The total sample collected included 614 participants. For the purposes of this study, the sample only included participants who were between the ages of 18-25 and those who indicated they were involved in a romantic relationship of any type. The final sample for analyses included 248 participants (See Table 1). Demographic information indicated that 73.8% of participants were female, and 26.2% were male. The average age of our participants was 19.90 years, and 88.2% were from the southeast region. The race indicated by our sample included 63.7% White, 23.4% African American, 2.4% Asian, 4.8% Hispanic/Latino, 1.2% Pacific

Islander, 2% American Indian or Alaskan Native, and 2.4% other. Most participants identified as heterosexual (93.5%). Participants also indicated which devices they own or frequently use with results of 40.3% cell phone, 85.9% smart phone, 34.3% iPad/tablet, and 85.1% laptop.

Table 1

Participant Demographics

	Frequency	Percent
Gender		
<i>Female</i>	183	73.8
<i>Male</i>	65	26.2
Sexual Orientation		
<i>Heterosexual</i>	232	93.5
<i>Bisexual</i>	8	3.2
<i>Homosexual</i>	4	1.6
<i>Asexual</i>	4	1.6
Region		
<i>Southeastern</i>	219	88.2
<i>Other</i>	29	11.8
Race		
<i>White/Caucasian</i>	158	63.7
<i>Black/African American</i>	58	23.4
<i>Hispanic/Latino</i>	12	4.8
<i>Asian</i>	6	2.4
<i>American Indian/Alaskan Native</i>	5	2.0
<i>Pacific Islander</i>	3	1.2
<i>Other</i>	6	2.4
Devices Owned or Frequently Used		
<i>Cell Phone</i>	100	40.3
<i>Smart Phone</i>	213	85.9
<i>Tablet/iPad</i>	85	34.3
<i>Laptop</i>	211	85.1

Data Analysis

Researchers utilized a multivariate analysis of variance (MANOVA) to analyze the first and third research questions. A MANOVA was an appropriate analysis because this statistical analysis compares groups to determine if they differ on various dependent variables (Pallant, 2013). The main purpose of the first and third research questions was to explore the impact of

perception of technology use on different measures of romantic relationships. Researchers utilized a two-way between-groups analysis of variance (ANOVA) to explore research question two. An ANOVA was an appropriate analysis for this research question because the purpose of this test is to determine if there are significant differences in the mean scores of a dependent variable while simultaneously looking at the effects of two independent variables (Pallant, 2013). The main purpose of research question two was to explore how relational ethic scores were impacted by both Facebook use and cohabitation status.

Results

Preliminary Analyses

According to Pallant (2013), preliminary analyses need to be conducted to ensure that interpretation of the statistical findings is appropriate. Researchers observed no serious violations due to large sample sizes after running preliminary analyses on multivariate normality, linearity, univariate and multivariate outliers, homogeneity of variance-covariance matrices, and multicollinearity for hypotheses one and three. Researchers also observed no violations of homogeneity of variance after assessing preliminary analyses for hypothesis two.

Hypothesis 1

The researchers utilized a one-way between-groups multivariate analysis of variance (MANOVA) to explore a participant's perception of the impact of technology use in his or her committed relationship. The two dependent variables explored were relational ethics trust scores and intimacy scores, while the independent variable was a participant's perception of the impact of technology on his or her relationship.

Results revealed a statistically significant difference between those who viewed technology as positively impacting their relationship, and those who viewed technology as

negatively impacting their relationship $F(6,486) = 3.64, p=.002$; Wilks' Lambda = .92; partial eta squared = .04. This means that a participant's perception of technology use on his or her relationship influences relational outcomes. Since these results indicated that there was a difference between positive and negative impact groups at the $p<.05$ level, this allowed the researchers to consider each dependent variable separately to explore which outcomes measures were influenced by a participant's perception. Both relational ethics trust scores and intimacy scores were statistically significant when using a Bonferroni adjusted alpha level of .025. Relational ethics trust was $F(3, 244) = 6.34, p=.000$, partial eta squared = .07. Intimacy was $F(3, 244) = 4.15, p=.007$, partial eta squared = .05. This means that both relational ethics trust scores and intimacy scores were lower in the negative perception group when compared with the positive perception group at the $p<.025$ level.

Follow up analyses revealed statistically significant differences between impact of technology groups for both relational ethics trust scores and intimacy scores (See Table 2). An inspection of the mean scores for the relational ethics trust scale indicated that the "very positive" impact group reported higher levels of trust ($M = 25.47, SD = 4.41$) than the "very negative" impact group ($M = 19.64, SD = 5.41$). Mean scores for the intimacy scale indicated that the "very positive" impact group also reported higher levels of intimacy ($M = 75.16, SD = 9.75$) than the "very negative" impact group ($M = 67.18, SD = 9.85$). While mean scores revealed statistically significant differences for each group ($p<.025$) these results should be interpreted with caution since the number of participants in the "very negative" impact group is low.

Table 2

Follow-up Analyses for Hypotheses One and Three

	Very Negative		Somewhat Neg.		Somewhat Pos.		Very Positive	
	M (n=11)	SD	M (n=35)	SD	M (n=113)	SD	M (n=89)	SD
RETS	19.64**	5.41	23.29	4.88	24.58	4.50	25.47**	4.41
MSIS	67.18*	9.85	70.60	8.47	74.69	9.24	75.16*	9.75
RES	41.91*	9.10	46.97	8.05	48.72	7.49	50.36*	8.14
RAS	21.82**	6.27	27.14*	5.69	29.66**	4.72	30.58*	4.33

Note: RETS = Relational Ethics Trust Scale, MSIS = Miller Social Intimacy Scale, RES = Relational Ethics Scale, RAS = Relationship Assessment Scale

* $p < .025$, and ** $p < .001$

Hypothesis 2

Researchers performed a two-way between-groups analysis of variance (ANOVA) to examine the impact of cohabitation status (“currently living with partner”: yes or no) and frequency of Facebook use (“how often do you use Facebook in a typical day”: never, rarely, sometimes, regularly, very frequently) on relational ethics scores. The two categorical variables in this study were cohabitation status, and frequency of Facebook use, while the dependent variable was relational ethics scores.

Participants were divided into five groups according to self-reported Facebook use (Group 1: Never; Groups 2: Rarely; Group 3: Sometimes; Group 4: Regularly; Group 5: Very Frequently). The interaction effect between cohabitation status and Facebook use was not statistically significant $F(4, 238) = 2.17, p = .07$, which indicates that there is no significant difference in the effect of Facebook use on relational ethics scores for those cohabiting versus not cohabiting. However, there was a statistically significant main effect for Facebook use $F(4, 238) = 2.80, p = .03$ with a medium effect size (partial eta squared = .05), indicating that relational ethics scores were influenced by Facebook use (See Table 3). These results indicate

that the variable of Facebook use is more important to determine relational ethics scores than cohabitation status at the $p < .05$ level. Post hoc comparisons using the Tukey HSD test revealed that none of the Facebook use groups were statistically significant from one another.

Table 3

Two-Way Between-Groups Analysis of Variance of RES by Facebook Use & Cohabitation Status

Source	SS	df	MS	F	p-value
Cohabitation Status	65.706	1	65.706	1.036	.310
Facebook Use	712.451	4	178.113	2.808	.026*
Cohabitation & Facebook	551.498	137.875	2.174	.073	.073
Error	15094.452	238	63.422		
Total	605570.000	248			
Corrected Total	15987.484	247			

Note: * $p < .05$

Hypothesis 3

Researchers completed a one-way between-groups multivariate analysis of variance (MANOVA) to explore a participant's perception of the impact of technology use in his or her relationship. The two dependent variables explored were relational ethics scores and relationship satisfaction scores, while the independent variable was a participant's perception of the impact of technology on his or her relationship.

Results revealed a statistically significant difference between those who viewed technology as positively impacting their relationship, and those who viewed technology as negatively impacting their relationship $F(6,486) = 6.69, p = .000$; Wilks' Lambda = .85; partial eta squared = .08. This means that a participant's perception of technology use on his or her relationship influences relational outcomes. Since these results indicated that there was a difference between positive and negative impact groups at the $p < .05$ level, this allowed the researchers to consider each dependent variable separately to explore which outcomes measures

were influenced by a participant's perception. Both relational ethics scores and relationship satisfaction scores were statistically significant when using a Bonferroni adjusted alpha level of .025. Relational ethics was $F(3, 244) = 4.60, p=.004$, partial eta squared = .05. Relationship satisfaction was $F(3, 244) = 13.56, p=.000$, partial eta squared = .14. This means that both relational ethics scores and relationship satisfaction scores were lower in the negative perception group when compared with the positive perception group at the $p<.025$ level.

Follow up analyses revealed statistically significant differences between impact of relationship groups for both relational ethics scores and relationship satisfaction scores (See Table 2). An inspection of the mean scores for the relational ethics scale indicated that the "very positive" impact group ($M = 50.36, SD = 8.14$) reported statistically significant higher scores than the "very negative" impact group ($M = 41.91, SD = 9.10$). Mean scores for the relationship satisfaction scale indicated that the "very positive" impact group also reported higher levels of satisfaction ($M = 30.58, SD = 4.33$) than the "very negative" impact group ($M = 21.82, SD = 6.27$) and the "somewhat negative" impact group ($M = 27.14, SD = 5.70$). The "somewhat positive" impact group ($M = 29.66, SD = 4.72$) also reported statistically significant higher levels of satisfaction than the "very negative" impact group ($M = 41.91, SD = 9.10$). The "somewhat negative" impact group ($M = 27.14, SD = 5.70$) also reported statistically significant higher relationship satisfaction scores than the "very negative" impact group ($M = 41.91, SD = 9.10$). While mean scores revealed statistically significant differences for each group ($p<.025$) these results should be interpreted with caution since the number of participants in the "very negative" impact group is low.

Summary of Findings

The data demonstrated results confirming hypotheses one and three, but not hypothesis two. There were consistent statistically significant differences on indicators of the health of a committed relationship (i.e. relational ethics trust scores, intimacy scores, relational ethics scores, and relationship satisfaction scores) for those who indicated the impact of technology on their relationship was positive as opposed to those who indicated a negative impact. No differences were found when comparing those who cohabit and those who do not.

Discussion

Recent research demonstrated that technology use is impacting individuals on social, psychological, and physical domains (Wilson et al., 2010; Schade et al., 2013; Murray & Campbell, 2015; Blaszczynski, 2006), but few researchers have explored the impacts of technology use specifically on romantic relationship outcomes. Researchers also acknowledge that technology use in relationships can have numerous positive impacts as well as numerous negative impacts (Schade et al., 2013; Murray & Campbell, 2015). Additionally, research has demonstrated that total relational ethics scores are lower among distressed romantic relationships (Grames et al., 2008), and distressed romantic relationships may be more susceptible to the negative impacts of technology use. Since technology use is becoming an essential component of daily living it is crucial that researchers and mental health clinicians have some knowledge about the impacts technology use can have on romantic relationship outcomes. This study attempted to increase understanding of the impacts technology use has on romantic relationships.

Impact of Technology Use on Relational Outcomes

This study was centered on the impact technology use has on several relational outcomes: relational ethics scores, relational ethics trust scores, intimacy scores, and relationship

satisfaction scores. Statistically significant results were observed indicating that individuals who perceived technology as negatively impacting their relationship scored lower on all four relationship outcome measures. Therefore, hypotheses one and three were confirmed; a negative perception of the impact of technology use on a participant's relationship (i.e. very negative, somewhat negative) was related to lower total relational ethics scores, relational ethics trust scores, intimacy scores, and relationship satisfaction scores. These results confirm previous research demonstrating that technology use can have a negative impact on romantic relationships (Schade et al., 2013; Murray & Campbell, 2015), and previous research findings that trust may be disrupted in relationships where technology use is high (Papp et al., 2012; Campbell & Murray, 2015).

These results also add to the literature by indicating what outcome variables romantic relationships may potentially be negatively impacted on. The study indicated that relational ethics trust scores were lower in individuals who perceived technology as negatively impacting their relationship. This finding confirms previous research connecting too much technology use to a disruption in trust (Papp et al., 2012; Campbell & Murray, 2015). Since trust informs how we interact with others and promotes positive relationships (Gangamma et al., 2012) a lower relational ethics trust score may be indicative of a relationship lacking in positive interaction between partners. The study also indicated that a negative perception of technology use impacts intimacy negatively. Recent research has indicated that some potential negative challenges of technology use include: access to opportunities for infidelity, greater access to pornography, and distraction (Murray & Campbell, 2015); all of which may be related to the lower intimacy outcomes observed in the current study. Since intimacy development has been cited as an

important developmental task during emerging adulthood (Erickson, 1994), it is possible that technology use may negatively impact this developmental task as well.

The study indicated that a negative perception of technology use has the potential to negatively impact an individual's relationship satisfaction. This finding may be a crucial component linking previous research to contemporary lifestyles that are intertwined with technology use. Previous research has indicated that relationships low in satisfaction are associated with higher levels of depression and have negative physical health outcomes (Grames, et al., 2008; Kiecolt-Glaser & Newton, 2001), and it is possible that negative impacts of technology use are associated with these outcomes. Lastly, total relational ethics scores (including trust, justice, loyalty, and entitlement) were also lower for participants who indicated a negative perception of technology use on the relationship. Taken as a whole this means that participants experienced lower levels of trust, justice, loyalty, and entitlement in their romantic relationships when they perceived technology as having a negative impact on their relationship. When relational ethic scores are low this means that a sense of safety and love in a romantic relationship is not prominent and may indicate a dysfunctional relationship (Hargrave et al., 1991). This means that technology use may be contributing to unhealthy romantic relationships.

Impact of Facebook Use on Relational Ethics Scores

An exploration of "Facebook use" influence on relational ethics scores was completed to determine if there were differences for cohabiting and non-cohabiting couples. Hypothesis two was not confirmed as there was no statistically significant difference in total relational ethics scores based on Facebook use between cohabiting and non-cohabiting couples. Since the interaction effect was not significant this allowed us to safely interpret main effects for the research question. There was no difference in relational ethics scores for cohabiting and non-

cohabiting couples, but there was a difference observed in relational ethics scores depending on an individual's Facebook use. This means that reported Facebook use was more important in determining relational ethics scores than was cohabitation status. While not statistically significant, the greatest difference observed for Facebook use was between the "never use" group and the "frequently use" group. Frequently using Facebook may lead to distraction from the relationship, or access to alternative partners (Murray & Campbell, 2015). Additionally, this finding that Facebook use is related to relational ethics scores may indicate that Facebook use could be contributing to previous research findings that have linked low relational ethics scores to dysfunctional relationships (Grames et al., 2008).

Limitations and Future Directions

Inherent in any research findings are limitations that need to be addressed. In this research study convenience sampling was utilized to obtain the participants. Generalizability of the results may be compromised due to the convenience sampling employed. Additionally, the sample was constrained by largely Caucasian, heterosexual, females from a large southeastern U.S. collegiate campus. Future research should replicate these findings with a larger more representative sample, and perhaps a clinical sample to see if this population has similar results. While the sample limits the generalizability of results to more diverse populations, the initial findings that relational outcomes are influenced by technology use is an important finding that future research should continue to investigate.

Future research should also investigate the impacts of Facebook use on relationships. While hypothesis two was not confirmed, interesting main effects indicated that Facebook use may have a powerful impact on relational ethics scores. It would be interesting to investigate more closely Facebook use impact on relational outcomes, while also looking at other social

media use impacts as well. Future research could investigate if one type of technology medium may be more harmful or beneficial to relational outcomes than another.

Future research may also consider developing a scale that is specifically for assessment for mental health professions. The benefit for mental health clinicians to have a valid and reliable assessment measure that included aspects of technology use impacts on different relational outcomes given the dramatic rise in technology use would be imperative. As technology use becomes ever more prevalent this assessment tool will likely become a necessity for many mental health clinicians. Along with creating an assessment tool, it would be helpful for researchers and mental health clinicians to further this research by creating an evidence-based treatment model. Contextual family therapy may be an appropriate model to incorporate evidence-based interventions into since research results have indicated a connection between relational ethics and technology use.

Conclusion

The current study confirmed assumptions that a participant's negative perception of technology use on their relationship would be associated with lower relational ethics scores, relational ethics trust scores, intimacy scores, and relationship satisfaction scores. This study did not confirm differences in relational ethics scores for cohabiting and non-cohabiting couples in relation to Facebook use; however, it did indicate that Facebook use was a better predictor of relational ethics scores than cohabitation status. This study contributed to the research by demonstrating a statistically significant link between technology use and romantic relationship outcomes. Future research should replicate these results with a larger, more representative sample size to increase ability to generalize research results. Future researchers and mental health clinicians should also develop a scale that is specifically for assessment of technology use

on relationship outcomes, as well as create an evidence-based treatment model based on the contextual family therapy framework. Continuing to explore the influence of technology use on relationship outcomes, as well as developing tools to help clients with the negative effects technology use may have is crucial to future generations that will likely have greater access to technology.

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CHAPTER 5: DISCUSSION

This study examined the impacts of technology use on relational functioning in romantic relationships through a contextual family therapy lens. Specifically, relational functioning was explored through total relational ethics scores, relational ethics trust scores, miller social intimacy scores, and relationship satisfaction scores. Recent research demonstrated that technology use is impacting individuals on social, psychological, and physical domains (Wilson, Fornaiser, & White, 2010; Schade, Sandberg, Bean, Busby, & Coyne, 2013; Murray & Campbell, 2015; Blaszczynski, 2006), but few researchers have explored the impacts of technology use specifically on romantic relationship outcomes. Researchers also acknowledge that technology use in relationships can have numerous positive impacts as well as numerous negative impacts (Schade et al., 2013; Murray & Campbell, 2015). Additionally, research has demonstrated that total relational ethics scores are lower among distressed romantic relationships (Grames, Miller, Robinson, Higgins, & Hinton, 2008), and distressed romantic relationships may be more susceptible to the negative impacts of technology use. Since technology use is becoming an essential component of daily living it is crucial that researchers and mental health clinicians have some knowledge about the impacts technology use can have on romantic relationship outcomes. This study attempted to increase understanding of the impacts technology use has on romantic relationships.

Discussion of Research Questions One and Three

An exploration of how a participant's perception of the impact of technology use on their relationship was performed to examine if this influenced different relationship outcome variables such as: total relational ethics scores, relational ethics trust scores, intimacy scores, and relationship satisfaction scores. Statistically significant results were observed indicating that

individuals who perceived technology as negatively impacting their relationship scored lower on all four relationship outcome measures. Therefore, hypotheses one and three were confirmed; a negative perception of the impact of technology use on a participant's relationship (i.e. very negative, somewhat negative) was related to lower total relational ethics scores, relational ethics trust scores, intimacy scores, and relationship satisfaction scores. These results confirm previous research demonstrating that technology use can have a negative impact on romantic relationships (Schade et al., 2013; Murray & Campbell, 2015).

These results also add to the literature by indicating what outcome variables romantic relationships may potentially be negatively impacted on. The study indicated that relational ethics trust scores were lower in individuals who perceived technology as negatively impacting their relationship. This finding confirms previous research connecting too much technology use to a disruption in trust (Papp, Danielewicz, & Cayemberg, 2012; Campbell & Murray, 2015). Since trust informs how we interact with others and promotes positive relationships (Gangamma, Bartle-Haring, & Glebova, 2012) a lower relational ethics trust score may be indicative of a relationship lacking in positive interaction between partners. The study also indicated that a negative perception of technology use impacts intimacy negatively. Recent research has indicated that some potential negative challenges of technology use include: access to opportunities for infidelity, greater access to pornography, and distraction (Murray & Campbell, 2015); all of which may be related to the lower intimacy outcomes observed in the current study. Since intimacy development has been cited as an important developmental task during emerging adulthood (Erickson, 1994), it is possible that technology use may negatively impact this developmental task as well.

The study indicated that a negative perception of technology use has the potential to negatively impact an individual's relationship satisfaction. This finding may be a crucial component linking previous research to contemporary lifestyles that are intertwined with technology use. Previous research has indicated that relationships low in satisfaction are associated with higher levels of depression and have negative physical health outcomes (Grames et al., 2008; Kiecolt-Glaser & Newton, 2001), and it is possible that negative impacts of technology use are associated with these outcomes. Lastly, total relational ethics scores (including trust, justice, loyalty, and entitlement) were also lower for participants who indicated a negative perception of technology use on the relationship. Taken as a whole this means that participants experienced lower levels of trust, justice, loyalty, and entitlement in their romantic relationships when they perceived technology as having a negative impact on their relationship. When relational ethic scores are low this means that a sense of safety and love in a romantic relationship is not prominent and may indicate a dysfunctional relationship (Hargrave, Jennings, & Anderson 1991). This means that technology use may be contributing to unhealthy romantic relationships.

Follow up analyses were then conducted on research questions one and three to determine where the differences were most significant (See Table 2, p. 50). Analyses from research question one indicated that only the "very positive" and "very negative" impact groups differed significantly in terms of relational ethics trust scores and intimacy scores. While these results indicate statistically significant differences, these results should be interpreted with caution due to the "very negative" impact group containing a low number of participants. Analyses in research question three indicated many more differences between the groups for both relational ethics scores and relationship satisfaction scores. However, differences in mean

scores for relationship satisfaction between “very positive” and “somewhat negative,” and between “somewhat positive” and “somewhat negative” were the most interesting due to larger sample sizes in each group indicating greater confidence in the validity of the interpretation of these results. Future research should replicate these results with larger sample sizes in each group to confirm their significance between groups.

Discussion of Research Question Two

An exploration of “Facebook use” influence on relational ethics scores was completed to determine if there were differences for cohabiting and non-cohabiting couples. Hypothesis two was not confirmed. There was no statistically significant difference in total relational ethics scores based on Facebook use between cohabiting and non-cohabiting couples. Since the interaction effect was not significant this allowed us to safely interpret main effects for the research question. There was no difference in relational ethics scores for cohabiting and non-cohabiting couples, but there was a difference observed in relational ethics scores depending on an individual’s Facebook use (See Table 3, p. 51). This means that reported Facebook use was more important in determining relational ethics scores than was cohabitation status. While not statistically significant, the greatest difference observed for Facebook use was between the “never use” group and the “frequently use” group. Frequently using Facebook may lead to distraction from the relationship, or access to alternative partners (Murray & Campbell, 2015). Additionally, this finding that Facebook use is related to relational ethics scores may indicate that Facebook use could be contributing to previous research findings that have linked low relational ethics scores to dysfunctional relationships (Grames et al., 2008).

Implications for Mental Health Clinicians and Future Researchers

The research findings from this study indicate that technology use does impact romantic relationship outcomes. As emerging adults age, and as new emerging adults grow up with technology it is crucial for researchers and mental health clinicians to continually explore the impacts technology use can have on romantic relationships. Mental health clinicians can utilize the research findings from this study to guide their assessment of couple relationships in the context of technology use. The scales that were utilized in this study are all measures that mental health clinicians could implement into their assessment process while also assessing for a clients technology use. The relational ethics scale may be particularly valuable in assessing relationships in the context of technology use due to relational ethics being part of a framework from which mental health clinicians can conceptualize the case. Clinicians may also utilize these scales in the context of technology use to determine where a relationship may be most impacted. For example, perhaps a relationship is low in intimacy and high in technology use, suggesting that the use of technology may need to be explored further with each partner. It is possible that one partner may be experiencing a pornography addiction via the internet and this is negatively impacting his or her intimacy with the partner. Researchers can utilize the information from this study to develop new scales that are specifically tailored to measure technology use's influence on different relational outcomes. Researchers developing new scales may want to include relational outcomes such as satisfaction, intimacy, trust, and relational ethics as technology use is impacting these domains of functioning and others.

Additionally, mental health clinicians can utilize this research to inform their understanding of diagnoses such as depression. Knowing that low relationship satisfaction is related to higher depression in couples (Grames et al., 2008; Kiecolt-Glaser & Newton, 2001)

mental health clinicians would be wise to assess and treat individuals who indicate frequent technology use. Researchers studying different diagnoses would also be wise to explore the impact technology can have on symptoms experienced by their research participants.

Researchers and mental health clinicians can also work together to create evidence-based treatment models for individuals experiencing negative relational and individual influences of technology use. Contextual family therapy may be an appropriate model to incorporate evidence-based interventions into since research results have indicated a connection between relational ethics and technology use. As technology use continues to increase, it will likely become more crucial for mental health clinicians to have evidence-based treatment models for treating the effects.

Limitations and Future Directions

Inherent in any research findings are limitations that need to be addressed. In this research study convenience sampling was utilized to obtain the participants. Generalizability of the results may be compromised due to the convenience sampling employed. Additionally, the sample was constrained by largely Caucasian, heterosexual, females from a large southeastern U.S. collegiate campus. Future research should replicate these findings with a larger more representative sample, and perhaps a clinical sample to see if this population has similar results. While the sample limits the generalizability of results to more diverse populations, the initial findings that relational outcomes are influenced by technology use is an important finding that future research should continue to investigate.

Future research should investigate the impacts of Facebook use on relationships. While hypothesis two was not confirmed, interesting main effects indicated that Facebook use may have a powerful impact on relational ethics scores. It would be interesting to investigate more

closely Facebook use impact on relational outcomes, while also looking at other social media use impacts as well. Future research could investigate if one type of technology medium may be more harmful or beneficial to relational outcomes than another.

Future research may consider developing a scale that is specifically for assessment for mental health professions. The benefit for mental health clinicians to have a valid and reliable assessment measure that included aspects of technology use impacts on different relational outcomes given the dramatic rise in technology use would be imperative. As technology use becomes ever more prevalent this assessment tool will likely become a necessity for many mental health clinicians. Along with creating an assessment tool it would be helpful for researchers and mental health clinicians to future this research by creating an evidence-based treatment model. As mentioned above, contextual family therapy may be an ideal framework to create this treatment model from since it is clear that relational ethics are impacted by technology use.

Conclusion

The current study confirmed assumptions that a participant's negative perception of technology use on their relationship would be associated with lower relational ethics scores, relational ethics trust scores, intimacy scores, and relationship satisfaction scores. This study did not confirm differences in relational ethics scores for cohabiting and non-cohabiting couples in relation to Facebook use; however, it did indicate that Facebook use was a better predictor of relational ethics scores than cohabitation status. This study contributed to the research by demonstrating a statistically significant link between technology use and romantic relationship outcomes. Future research should replicate these results with a larger, more representative sample size to increase ability to generalize research results. Future researchers and mental

health clinicians should also develop a scale that is specifically for assessment of technology use on relationship outcomes, as well as create an evidence-based treatment model based on the contextual family therapy framework. Continuing to explore the influence of technology use on relationship outcomes, as well as developing tools to help clients with the negative effects technology use may be crucial to future generations that will likely have greater access to technology.

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APPENDIX A: INSTITUTIONAL REVIEW BOARD (IRB) PERMISSION

EAST CAROLINA UNIVERSITY

University & Medical Center Institutional Review Board Office

4N-70 Brody Medical Sciences Building · Mail Stop 682

600 Moye Boulevard · Greenville, NC 27834

Office 252-744-2914 · Fax 252-744-2284 · www.ecu.edu/irb

Notification of Initial Approval: Expedited

From: Social/Behavioral IRB
To: Alan Taylor
CC: Damon Rappleyea
Courtney Epps
Date: 1/25/2016
Re: **UMCIRB 15-001392**
Relationship Attachment and Technology Use

I am pleased to inform you that your Expedited Application was approved. Approval of the study and any consent form(s) is for the period of 1/25/2016 to 1/24/2017. The research study is eligible for review under expedited category # 7. The Chairperson (or designee) deemed this study no more than minimal risk.

Changes to this approved research may not be initiated without UMCIRB review except when necessary to eliminate an apparent immediate hazard to the participant. All unanticipated problems involving risks to participants and others must be promptly reported to the UMCIRB. The investigator must submit a continuing review/closure application to the UMCIRB prior to the date of study expiration. The Investigator must adhere to all reporting requirements for this study.

Approved consent documents with the IRB approval date stamped on the document should be used to consent participants (consent documents with the IRB approval date stamp are found under the Documents tab in the study workspace).

The approval includes the following items:

Name	Description
SURVEY Sample Cover Letter 10 7 14.docx	Consent Forms
Tech and Relationships Codebook 4-2015.docx	Surveys and Questionnaires

The Chairperson (or designee) does not have a potential for conflict of interest on this study.