POTENTIAL ASSOCIATIONS BETWEEN RELATIONSHIP QUALITY AMONG EMERGING ADULTS AND OFFLINE VIDEO GAME PLAY

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By

Christopher S. Gray

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Thesis written by

Christopher S. Gray

B.A., Kent State University, 2012

M.A., Kent State University, 2020

	Approved by
Kelly E. Cichy	, Director, Master's Thesis Committee
Aryn C. Karpinski	, Member, Master's Thesis Committee
Scott A. Tobias	, Member, Master's Thesis Committee
	Accepted by
Mary M. Dellmann-Jenkins	, Director, School of Lifespan Development and Educational Sciences
James C. Hannon	, Dean, College of Education, Health and Human Services

GRAY, CHRISTOPHER S., M.A., May 2020

POTENTIAL ASSOCIATIONS BETWEEN RELATIONSHIP QUALITY AMONG EMERGING ADULTS AND OFFLINE VIDEO GAME PLAY (49 pp.)

Director of Thesis: Kelly E. Cichy, Ph.D.

The ease of online video game functionality has made online video game play the norm in research studies, but offline video game settings are still exercised today among friends. Video game play has grown exponentially as a favorable leisure activity not just among adolescents, but adults as well. This study sought to assess how relationship quality among emerging adults varies with offline video game play with friends. At Kent State University, 222 undergraduate students across multiple disciplines were recruited to complete an online survey on perceived friendship quality and video game play. Of those, 123 reported video game play and their responses were used to analyze support and strain received from friends based on the MIDUS II Support and Strain Scales. In addition, game genre and frequency of play answers were recorded as potential moderators between support and strain received from friends and video game play. Linear regressions revealed no significant association between support and strain receive from friends and offline video game play. Four linear regressions were used to analyze game genre and frequency of play respectively between support and strain received from friends and video game play. Although results showed no significance within these moderator regressions, time with friends was associated with support received from friends.

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CHAPTER I

INTRODUCTION

Video games have advanced beyond the limitations of arcades and are present in households across the globe (Williams, 2006). These activities are commonly associated with adolescents, but they continue to be played by individuals across the lifespan (Hendel & Harrold, 2004; Padilla-Walker, Nelson, Carroll, & Jensen, 2010; Quandt, Grueninger, & Wimmer, 2009). This allows multiple age groups to participate in a single interest together and encourages intergenerational play in video game consoles such as the Nintendo Wii, Microsoft Xbox, and Sony PlayStation (Chambers, 2012; Khoo, Merritt, & Cheok, 2009). Games labeled as family centered focus on improving family functioning and family time with co-play and paraplay (Buswell, Zabriskie, Lundberg, & Hawkins, 2012; Coyne, Padilla-Walker, Stockdale, & Day, 2011; Downs, Vetere, & Howard, 2013). The improvements of multiple facets of video games toward a wider audience has fostered their use as meaningful time spent with others.

Online Versus Offline Multiplayer

Video games have integrated online functionality for over a decade, but video games were widespread before Internet access was prevalent. People who play video games regularly, also known as "gamers," are familiar with playing videogames online with others (multiplayer) via the use of an online gaming service. Offline gaming is a branch of video game play where gamers play together either on one console through a split-screen or through multiple consoles via a local area network (LAN) connection. These events provide the opportunity for interpersonal interactions with friends and family outside the game world while providing the opportunity for everyone to play the video game. Although there are limitations to offline video game play, participants remain involved by sharing and narrating with other players who are present (Downs et al., 2013).

Game consoles and video games have adapted to online accessibility with online interactions through discussions and/or gameplay. Studies have explored this adaptation by addressing all video game interactions as online (Anand, 2007; Coyne et al., 2012). Furthermore, studies that include offline interactions refer to personal interactions without virtual media (Williams, 2007). This broad categorization excludes interactions during offline video game play, which was and still is a fundamental characteristic of video games. Players tend to play with people they know well, and there are situations where these players will play together without the need of the Internet. This study focuses on the impact of offline video game play on social relationships to address the gap in research in this field.

Consequences of Video Game Play

Early studies on video game play focused primarily on the negative aspects of use. Excessive video game play has been associated with addiction (Billieux, Thorens, Khazaal, Zullino, & Linden, 2015; Lemmens, Valkenburg, & Gentile, 2015), desensitization to violence (Fraser, Padilla-Walker, Coyne, Nelson, & Stockdale, 2012), exposure to adult-content (Kutner, Olson, Warner, & Hertzog, 2008), aggressive behaviors (Anderson et al., 2010; Gentile, Li, Khoo, Prot, & Anderson, 2014; Schmierbach, 2010), and relationship conflict (Coyne et al., 2012; Tobias, Halter, & Newbauer, 2015). There is also an unfavorable perspective toward video games by parents and friends when play becomes excessive (Appel, Stiglbauer, Batinic, & Holtz, 2014; Billieux et al., 2015; Chua, Jung, Lwin, & Theng, 2013; Jeong & Kim, 2011; Kutner et al., 2008). Research suggests that online use is associated with isolation from interpersonal settings (Landers & Lounsbury, 2006) and lower social capital offline (E. Collins & Freeman, 2013; Kowert, Domahidi, Festl, & Quandt, 2014).

Despite these findings on negative outcomes with video game play, research also exists on the benefits of regulated play. Video games offer opportunities for intergenerational play, promoting relationship coherence and prosocial behavior (Chua et al., 2013; Coyne et al., 2011; Jeong & Kim, 2011; Voida & Greenberg, 2012). Players can choose to work cooperatively with others in a virtual world, which is associated with an increase in cooperative behaviors (Greitemever & Cox, 2013) and empathic concern (Greitemeyer, 2013). In addition, massively multiplayer online role playing games (referred to as "MMORPGs" or "MMOs") have allowed for a more personal experience between players. These games offer a source of social capital through online interactions that become more durable with time and commitment (Collins & Freeman, 2013; Reer & Krämer, 2014; Shen, Monge, & Williams, 2014). Video games also offer younger populations opportunities to learn about various subjects and provide teachers with a method to teach them (Ahmad & Jaafar, 2012; Barab, Gresalfi, & Arici, 2009). For example, college students have shown higher executive functioning from previous video game play experience (Buelow, Okdie, & Cooper, 2015). As technology continues to

advance, the potential of video game play has grown in various ways, including as a means of building and strengthening relationships.

Video Game Play and Relationship Quality

Video game play may influence relationships in multiple ways. Video games offer participants several methods of interactions from competitive to cooperative teamwork (Greitemeyer, 2013), intergenerational bonding (Chua et al., 2013; Coyne et al., 2011; Jeong & Kim, 2011; Voida & Greenberg, 2012), and accessible activities for everyone to spend time together regardless of location (E. Collins & Freeman, 2013; Kowert et al., 2014; Williams, 2006, 2007).

Video game play is also a potential source of relationship conflict, such as parental concern related to children's exposure to inappropriate video game content (Chua et al., 2013; Kutner et al., 2008). In addition, research has also shown isolation from one's family (Tobias et al., 2015), disagreements between romantic partners related to video game play (Coyne et al., 2012), and declines in social capital (E. Collins & Freeman, 2013; Jeong & Kim, 2011) relating to excessive video game use.

The culmination of these findings suggest that video game play may be associated with aspects of relationship experiences. Prior research, however, has generally focused on online video games and excluded offline video game interactions from research. This study addresses this gap in the literature by specifically examining associations between offline video game play and relationship quality between friends.

Emerging Adulthood

With a constant connection to the Internet, the effect of online video games on younger populations has been a primary concern among researchers. Studies on children emphasize learning through games and intergenerational play (Barab et al., 2009; Khoo et al., 2009; Voida & Greenberg, 2012), whereas adolescent studies primarily focus on developmental problems such as aggressive behaviors and addiction (Appel et al., 2014; Jeong & Kim, 2011; Kowert et al., 2014). However, there is some research extending to emerging adults on this topic. Introduced by Arnett (2000), emerging adulthood (usually between the ages of 18 to 25) is a hypothetical stage between adolescence and adulthood when enrolling in college and exploring future career options is common. These individuals may construct their own schedules and decide how to spend their time on work-related tasks and leisure, including video game play. This freedom with time-management allows emerging adults to engage in leisure activities without restrictions. Indeed, emerging adults are the largest group of consumers of video game leisure and Internet use (Fraser et al., 2012; Padilla-Walker et al., 2010). In addition, emerging adults continue to build independence from their family and spend considerably more time with their friends (Arnett, 2000; A. W. Collins & Madsen, 2006). Previous studies have also shown associations between video game play and lower relationship quality and empathic concern among friends (Fraser et al., 2012; Padilla-Walker et al., 2010) and family (Tobias et al., 2015). These findings suggest video game play may be one way leisure activities contribute to friendship quality among emerging adults.

Therefore, it is important to further explore how video game play influences relationships among emerging adults, focusing specifically on local offline video game play.

Game Genre

Studies have also overlooked how video game play may vary based on characteristics of the game such as genre. Video game genre is described as the base gameplay mechanics or tasks a player must attend to in order to progress within a game (Dobrowolski, Hanusz, Sobczyk, Skorko, & Wiatrow, 2015). When identifying video game genre, researchers often use the broad term "action video game" in studies (Dobrowolski et al., 2015; Elliott, Golub, Ream, & Dunlap, 2012; Elliott, Ream, McGinsky, & Dunlap, 2012). As games have become more elaborate in their mechanics and tasks, genres of games have become more unique and diverse. One research study examined enhancements in different cognitive abilities between first-person shooters (FPS) and real-time strategy (RTS) game genres. The results showed RTS players had greater cognitive abilities in regard to keeping track of multiple objects on screen at once. (Dobrowolski et al., 2015). Other studies have primarily focused on negative implications between the most popular game genres: MMORPGs and FPS (Elliott, Golub, et al., 2012; Elliott, Ream, et al., 2012). Other genres of video games such as multiplayer online battle arenas (MOBA) and digital collectible card games have been overlooked to date, yet they are also commonly played and commercialized in tournaments and live events. As game genre is often categorized broadly, the current study distinguishes specific genres into the following categories: strategy (e.g.,

StarCraft), role-playing (e.g., *Final Fantasy*), action (e.g., *Call of Duty*), and simulation (e.g., *The Sims*).

Statement of the Problem

The purpose of this study is to examine the association between offline video game play and the quality of social relationships among college-aged emerging adults. Emerging adults spend progressively more time with friends than family when developing a routine schedule (Arnett, 2000; A. W. Collins & Madsen, 2006). Spending offline game time with friends can be a casual experience for relationships to prosper, perhaps akin to prior intergenerational studies (Chua et al., 2013; Khoo et al., 2009; Voida & Greenberg, 2012). In contrast, multiple studies on MMORPGs have shown influences for relationship conflict (Coyne et al., 2012; Kowert et al., 2014), which could suggest a similar outcome in offline play among peers. Additionally violence in video games is associated with increased aggressive behaviors (Anderson et al., 2010; Carnagey, Anderson, & Bartholow, 2007) and lower relationship quality with friends and parents (Padilla-Walker et al., 2010).

These associations may also be influenced by characteristics of the video game play, including game genre, frequency of play, and quantity of play. Game genres have grown in number and complexity, potentially influencing the association between support from friends and offline video game use. Furthermore, frequency and quantity of play may also influence support and conflict with offline relationships. Excessive play time may interfere with friendship support, leading to conflict if the behavior is seen as an addiction (Elliott, Golub, et al., 2012; Elliott, Ream, et al., 2012). Therefore, three major objectives guide this study:

- To examine the association between offline video game play and support received from friends.
- 2. To examine the association between offline video game play and conflict with friends.
- To explore whether specific aspects of a game moderate these associations between offline video game play, support received from friends, and conflict with friends.
 - a. Game genre (i.e., strategy, role-playing, action, simulation)
 - b. Frequency of play sessions (i.e., once a week, every day, etc.)
 - c. Average amount of play time per session

CHAPTER II

LITERATURE REVIEW

Interactive video games have grown in impact and popularity. Initially restricted to arcades, video games have increased in popularity and developed communities of players (Williams, 2006). Video games have grown in complexity and accessibility, and further research must consider these changing variables in games. First, this chapter reviews the online adaptation of video games as online capabilities of video games have affected interest in game development and research. Next, the chapter describes research on the potential outcomes of video game play. Specifically, this review of the literature examines both the harms and benefits of video game play across the lifespan. Third, these effects are further examined with regard to relationships and emerging adulthood. Aspects of video game play may have varying effects on individuals and their relationships. Finally, the review identifies and discusses specific characteristics of video game play. The type of games played are considered given the existing literature on game genre with frequency and quantity of play.

Online Versus Offline Game Play

Gamers are familiar with offline and online settings for video game play. Offline or co-located play refers to play between participants not necessarily connected to the Internet. These settings usually involve players playing on the same game device or on multiple consoles via a local area network (LAN) connection. These interactions provide opportunities for friends and family to connect on an emotional level similarly to other related activities (Barab et al., 2009; Chua et al., 2013). Kowert and colleagues (2014) examined online social circles among adolescents with offline game play. Results showed no significant relationship of offline game play with the size of one's social circle (Kowert et al., 2014). As the number of participants increase, the difficulty of arranging offline game play increases. Multiple players on one console is sufficient until there are more players than there are available slots for concurrent play. For example, many games have multiplayer modes for more than one player, but four active players is the common threshold for a single game. Given this condition friends will need to share time for play if there are more than four participants involved, which may cause friction between multiple participants.

Online game play is commonplace in modern video games, where play occurs between participants connected to the Internet. Current game devices incorporate online capabilities, allowing players to communicate and interact with others from around the world (Kowert et al., 2014). This allows gamers to interact with friends and family anytime, anywhere. These interactions can be established with a single setup of hardware and software without having to continuously set up as in LAN play. Although the participants are playing together, the emotional connection between participants can vary. Acquiring social capital online is appropriate for maintaining healthy social relations, but the connection is remote and shallower than an offline physical relationship (Williams, 2007). The complexity of online interactions along with the inability to pause encourage extended hours of game play, increasing concern of these activities being addictive and disruptive (Anand, 2007; Coyne et al., 2012). The ease of online gameplay has been accepted as the norm in current research although collocated play is still exercised (Kowert et al., 2014; Voida, Carpendale, & Greenberg, 2010). Intergenerational research has shown significant associations in video game play and relationship quality, which predicts a similar association can occur among peer participants (Chua et al., 2013; Downs et al., 2013; Voida & Greenberg, 2012). Therefore, given the gaps in research focused on offline play, this study will focus on offline play and the associations between offline video game play and support and conflict between friends.

Outcomes of Video Game Play

Video games have become one avenue of storytelling, allowing individuals to interact, experience, and even create a story firsthand. These activities offer immersive experiences that are similar, or in some cases more immersive than other entertainment media, such as movies and television series. As games continue to become a popular pastime, their direct and indirect effects become more apparent. The effects of video game play are categorized under negative consequences and positive consequences.

Negative Outcomes

Video game play is a popular form of consumable entertainment. Excessive use, however, has been associated with pathological behaviors (Elliott, Golub, et al., 2012; Elliott, Ream, et al., 2012; Lemmens et al., 2015). Common effects of excessive video game play include addiction, desensitization to violence, exposure to adult content, aggressive behaviors, and relationship conflict (Anderson et al., 2010; Buswell et al., 2012; Coyne et al., 2012; Fraser et al., 2012; Padilla-Walker et al., 2010). Addiction. Video game addiction has become a significant concern for friends and family with the integration of the Internet and online multiplayer games. Online games encourage communication through and outside the game, fostering a continuous involvement in a virtual world. As commonly seen in massive multiplayer online role-playing games (MMORPG), this temptation to keep contributing can lead to addiction. Billieux et al. (2015) identified a relationship between these addictions and online gambling. The *Diagnostic and Statistical Manual of Mental Disorders (DSM-5)* has even considered this behavior as a psychological disorder (Lemmens et al., 2015).

Desensitization to violence and exposure to adult content. Some video games offer content and quality gamers easily become immersed in, leading to conflicts with reality. One topic on the effects of video games includes exposure to inappropriate content. A study by Fraser et al. (2012) examined empathetic concern in emerging adults related to violent video game play. Players were less responsive to empathetic concern and prosocial behaviors toward others compared to non-players, supporting desensitization theory. This theory describes an individual's repeated exposure to violence as reducing their reactions to real-life violence (Carnagey et al., 2007; Fraser et al., 2012). Furthermore, a study by Kutner et al. (2008) discussed the concerns of parents on their children's exposure to sexual and violent content in video games.

Aggressive behaviors. Video games have been linked as contributors to violent crimes and aggressive behaviors among players. As players continuously engage with others in video games, many of the circumstances may involve a level of violence. Desensitization and exposure, as previously explored, is common after repeated

experiences in these virtual worlds. The requirement to behave violently to be successful and the constant application of these cognitions may alter one's behavior to be more aggressive (Anderson et al., 2010; Carnagey et al., 2007; Schmeirbach, 2010). The unfiltered nature of the Internet and online communities have shown increased levels of verbal aggression among adolescents (Appel et al., 2014). Adolescents and children are significantly affected by aggressive behaviors online, but children are more susceptible to aggressive cognition formation (Gentile et al., 2014). Still, research suggests these aggressions are inhibited based on the type of game being played. Players playing cooperatively or alone are significantly less likely to have aggressive ambitions in comparison to competitive multiplayer game modes (Schmierbach, 2010).

Relationship conflict. Furthermore, this behavior may have multiple effects on one's family and friends. Tobias et al. (2015) examined family relationships among female college students and video game play. The results were contradictory to previous research: Video game play was negatively associated with family relationship quality and positively related to family conflict, contrary to the findings from other studies with adolescents (Tobias et al., 2015). As previously mentioned, the concern of conduct in games is concerning for parents because of the need to constantly monitor their children's exposure (Chua et al., 2013; Kutner et al., 2008). As described by Coyne and colleagues (2012), romantic relationships can suffer from excessive media use such as video game play. Offline social capital (relationships established and maintained in the real-world) decreases among extreme gamers, whereas their online social capital (relationships established and maintained over the Internet) increases (E. Collins & Freeman, 2013;

Jeong & Kim, 2011). The distinction between offline and online is set as real-world and Internet gaming, overlooking offline multiplayer gaming. Offline games can offer a cooperative experiences for players within physical proximity, but can also isolate individuals due to single-player game play and disagreement of game type (Coyne et al., 2012). As online gaming is positively associated with relationship conflict (Coyne et al., 2012), the associations between offline gaming and relationship conflict should be explored.

Positive Outcomes

The impact of video games in everyday life may lead to benefits for players. Increasingly, games allow players of all ages to be able to participate simultaneously in video game play (Chambers, 2012; Voida & Greenberg, 2012). These interactive behaviors promote intergenerational play between children, parents, and grandparents (Chambers, 2012; Chua et al., 2013; Khoo et al., 2009; Voida & Greenberg, 2012). In addition, video games may enhance developmental growth with interactive experiences (Barab et al., 2009; Dobrowolski et al., 2015). Together these aspects promote relationship building and preservation.

Building relationships. Video games may influence the construction and maintenance of relationships. Games offer a range of opportunities for a relationship to prosper. Many offer simple, leisure activities for anyone to be able to enjoy. Some offer competitive gameplay for players looking to challenge each other, while others promote cooperative success, inspiring players to work together on a single task (Greitemeyer, 2013). These interests may be seen among families engaged in intergenerational play and

offline settings such as on a local area network (LAN). These interactions can also be observed with the online adaptation of video games. Players now can engage in these activities with everyone around the world, providing another avenue for relationship building and maintaining relationships (E. Collins & Freeman, 2013; Kowert et al., 2014; Williams, 2006, 2007).

Intergenerational play. Intergenerational play, known as any form of play between two participants of different age groups, has been a recent focus of game development such as party games (e.g., *Mario Party*). Traditional methods of intergenerational play incorporate spending time doing a daily activity with a partner such as playing catch. Video games offer equal opportunities for players to achieve a common goal together, relatively easier than traditional means (Chua et al., 2013). Both age groups encourage playing together as a bonding experience, adopting differing roles based upon the interaction (Voida & Greenberg, 2012). Game consoles such as the Nintendo Wii offer multiple family games for multiple players to play at a time or simultaneously together. Players waiting or observing as an audience can still interact with the players in a form of play known as paraplay (Downs et al., 2013). Paraplay refers to play outside the periphery of the game being played but remains in context to the overall theme (Downs et al., 2013). This play allows participants to be actively involved while enhancing the game experience for those currently playing the game.

Interactive development. As players continue to interact in these virtual worlds, they become immersed in their stories. A key feature in video games is the narrative driving the player to complete the story. Throughout the game, the player interacts with

the game and/or other players to progress towards a goal. The player encounters new scenarios and puzzles, which stimulate problem-solving skills, moral decision-making, and experience with relative situations (Barab et al., 2009; Hofferth, 2010). The continuous interactions between the player and game may foster cognitive improvements. Dobrowolski and colleagues (2015) examined cognitive functioning between players who prefer first person shooter (FPS) games, players who prefer real-time strategy (RTS), and non-gamers. The results showed heightened cognitive abilities in RTS players due to enhanced task switching and multiple object tracking compared to FPS players and non-gamers (Dobrowolski et al., 2015). These mental practices may stimulate future growth and assist in higher levels of thought-processing beyond the scope of the video game world.

Emerging Adulthood and Video Game Play

Video games have targeted the young populations as an alternative form of entertainment. As technology continues to advance, video games have evolved with more realistic graphics, more complex gameplay, and immersive storytelling. Game developers have used these improvements to enhance experiences for youth and construct mature stories, aiming for a wider audience. The integration of controversial content in games has been well-documented in the media, leading to the current Entertainment Software Rating Board (ESRB) rating system. The ESRB reviews the content in video games and applies a rating appropriate to the age of the potential player. Ratings range from "E for Everyone" involving simple content up to "AO for Adults Only" involving highly mature material (violence, drugs, sexual content; www.esrb.org). Higher ratings are meant to limit access from younger players to prevent exposure to mature content. Ages 18 and older fulfill every requirement set by this system, allowing full access and playability of video games. In fact, the largest consumer of video game play are emerging adults (Anand, 2007).

Arnett (2000) introduced the idea of a transitional stage between adolescence and adulthood referred to as "emerging adulthood." This stage, usually between the ages of 18 to 25, is considered different from either life stage by combining several similar characteristics from both. From adolescence, an emerging adult pursues establishing a permanent adult identity. During early adulthood, the individual has accepted personal responsibilities and growing independence from their family of origin (Arnett, 2000; A. W. Collins & Madsen, 2006). These young adults may consider themselves lacking in adult responsibilities, but admit to progressing from adolescence in certain aspects. During this stage, many emerging adults have control over their personal schedules. These individuals can construct their agenda with minimal limitations, allowing ample time to engage in leisure activities such as video game play (Arnett, 2000). Hendel and Harrold (2004) observed leisure activities of undergraduates over three decades, and Internet use had the most significant increase in participation among other leisure activities. With the integration of online connectivity in every video game device, video games rival television in the leading media entertainment. Padilla-Walker and colleagues (2010) examined the effects of Internet use including video game play among emerging adults. Their results revealed positive associations between video game play and risk behaviors, identity formation, and relationship quality (Padilla-Walker et al., 2010).

These findings support the current study's aim to examine how video game play is associated with relationship quality among friends in emerging adulthood.

Potential Moderators

As an interactive experience, video games have many facets that define the video game play experience. As explored previously, the effect of video game play varies based on not just the activity itself but what the activity involves and time spent engaging in the activity. This section will focus on these potential moderators of video game play for this study.

Game genre. The complexity in games has evolved significantly since their inception. For example, one game in a modern war situation allows players to be a soldier fighting against an opposing army, whereas another game in a natural setting promotes basic survival needs. Although the premise is identical (the game provides an antagonism to overcome), the setting and methods to achieve victory are vastly different. These mechanics help to categorize a game under a specific game genre, or a common theme and mechanics found in other similar games. This categorization is often used in a very general sense and often disregards the multiple categories a game may qualify for. For example, games such as Call of Duty and Rainbow Six are both categorized as first person shooters (FPS), but Call of Duty is more action oriented whereas Rainbow Six is more strategy oriented. These various dimensions of video games may have differing effects on players, especially in online MMORPGs (Elliott, Ream, et al., 2012). Elliott, Golub, et al. (2012) found MMORPG play as the most addictive genre of play among adult problem video game players when related to measures of gambling addictions. In comparison, cognitive enhancements can be seen in multitasking among adult players of real-time strategy (RTS) games (Dobrowolski et al., 2015).

These differing effects of different game genres emphasize this study's purpose to analyze them in relation to relationship quality. The four genres in the study are distinguished as action, strategy, role-playing, and simulation. Action games in this study refer to games involving direct interaction between the player's avatar and the virtual world. This categorization includes adventure and first-person shooter (FPS) games, which are the most common games studied due to their use of violence (Elliott, Ream, et al., 2012; Fraser et al., 2012; Padilla-Walker et al., 2010). Strategy games in this study involve preparation and employing a plan within the game in order to succeed. These games promote strategic thinking and planning while sometimes offering the same fast-paced nature of action titles (Dobrowolski et al., 2015). Role-playing games involve story-telling where the player can directly contribute to their character's and the story's progression. MMORPGs are the most widely studied in this category due to the feeling of being immersed in a live, virtual community (Anand, 2007; Elliott, Ream, et al., 2012). Simulation games provide brief roles to players to act out in a single or multiple mini-games often without a narrative. These often encourage quick play among participants and are preferable for intergenerational play due to their relative lack of violence (Barab et al., 2009; Voida & Greenberg, 2012). Multiple games may overlap into two or more categories as suggested previously, but these distinctions help identify potential differences in the associations between offline video game play and relationship quality among friends.

Quantity and frequency of play. Along with game genre, frequency and quantity of play are also considered. The quantity of video game play is measured in multiple studies (Dobrowolski et al., 2015; Elliott, Ream, et al., 2012; Voida & Greenberg, 2012), yet frequency of play is scarce in the literature (Anand, 2007; Padilla-Walker et al., 2010). These characteristics are considered moderators along with game genre between offline video game play and relationship support.

Current Research Objectives

Studies on video games have primarily focused on adolescent and family relationships (Barab et al., 2009; Coyne et al., 2011; Kowert et al., 2014), and a limited body of work has examined emerging adults' video game behaviors (Elliott, Golub, et al., 2012; Elliott, Ream, et al., 2012; Fraser et al., 2012; Padilla-Walker et al., 2010; Tobias et al., 2015). Research on emerging adults has shown an inverse relationship between video game play and relationship quality, where increased video game play was associated with lower relationship quality (Coyne et al., 2012; Padilla-Walker et al., 2010). Emerging adults prefer to spend more time alone or with friends than with their families (A. W. Collins & Madsen, 2006). Conflict in romantic relationships among adults was also associated with video game play, yet there is minimal data on video game play maintaining relationships (Coyne et al., 2012). As with other leisure activities, video game play offers simple interactions with and between participants often without the concern of completing the assigned task. As video games may influence conflict in relationships, there is reason to believe they may also contribute to relationship quality. As seen in MMORPGs, players can help each other achieve a common goal through

interactions in the game (Elliott, Golub, et al., 2012; Jeong & Kim, 2011). Fraser and colleagues (2012) also examined empathetic concern among friends and video game play. These studies each revealed similar inverse association between video game play and relationship quality, but focused on one broad genre ("violent") of video games.

Associations between video game play and friendship quality may also vary depending on the characteristics of the video games being played. Research has shown game genre has a significant impact on players regarding degrees of addiction (Elliott, Golub, et al., 2012; Elliott, Ream, et al., 2012). With the exception of Kowert and colleagues (2014), studies have integrated online video game play as the main source of play. Kowert and colleagues found no change in social circles among adolescents who play video games offline, and the behavior is likely to increase as emerging adults prefer to spend more time with their friends (A. W. Collins & Madsen, 2006). The current study seeks to analyze offline video game behaviors among emerging adults and how video game play influences their relationship supports and conflicts. In addition, specific aspects of video games can have differing effects on players' levels of support and conflict from friends. Therefore, this study also examines if game genre, frequency, and quantity of play moderate the associations between video game play with relationship support and conflict.

CHAPTER III

METHODOLOGY

Participants

Two hundred twenty-two participants were recruited from undergraduate classes at Kent State University. The goal of the study targeted students between the ages of 18 to 25, as traditional students begin college at the onset of emerging adulthood (Arnett, 2000). Recruitment included students from introductory courses across multiple programs (Human Development and Family Studies, Business, Technology, Digital Sciences, etc.). The sample was expected to be predominantly male, given the common demographic of players who regularly engage in video game play (Fisher, 1994; Griffiths & Hunt, 1998; Hofferth, 2010; Nippold, Duthie, & Larsen, 2005; Padilla-Walker et al., 2010; Winn & Heeter, 2009).

Participant Recruitment

The principal investigator (PI) contacted instructors within each program to gain permission to visit each class, speak briefly about the current study, and offer a list for participants to leave their email. Participants were not required to have direct video game experience, although those who have never played video games were excluded from analyses.

Procedure

After receiving IRB approval, an online survey using the SurveyMonkey website was available through a link provided by the PI to the given email addresses. Students completed an informed consent before initiating the survey, and then anonymously completed the online survey. If an instructor granted extra credit for participation, participants emailed a screenshot of the final "Thank you" screen to the PI in order to receive the extra credit.

Measures

The survey asked participants to answer sections relating to sociodemographics, friend support and conflict, video game use, game genre, frequency of play, and quantity of play.

Sociodemographics

This section included six sociodemographic questions. Initial questions asked participants their age, gender, ethnicity, and family of origin's yearly income level. Following these questions, participants indicated how often they spend time with friends on a scale ranging from 5 (*All the time*) to 0 (*Not at all*). Participants were also asked to identify the relationship of each group of friends with a percentage (online and offline).

Support and Conflict From Friends

The questions in this section are derived from the MIDUS II Friend Support and Strain scales (Schuster, Kessler, & Aseltine, 1990; Whalen & Lachman, 2000). These scales include eight items about support and strain received from friends. The first scale contains four questions addressing perceived support from friends (e.g., How much do your friends really care about you), offering response ranges from 1 (*a lot*) to 4 (*not at all*). The second scale contains four questions addressing strain from friends (e.g., How often do they criticize you), offering response ranges from 1 (*often*) to 4 (*never*).

Video Game Use, Frequency of Play, and Quantity of Play

Respondents answered three questions pertaining to video game use, frequency of play, and quantity of play. The first question asked, "During the past 12 months, how often did you play video games?" with responses ranging on a Likert scale from 0 (*none*) to 5 (*every day or almost every day*). Participants who answered this question with a 0 bypassed the remaining questions in this section and the video game genre section. For those who play video games, participants were asked, "On average, how many minutes do you play video games in one session?" Finally, participants identified how many minutes they spend playing video games offline or without an online connection (single player, split screen, local area network).

Video Game Genre

In this section, participants who answered to playing video games were asked, "What game title(s) do you play the most frequently" giving the participant a prompt to enter one to three game titles. The titles provided were coded into the four designated categories in the study (action, strategy, role-playing, and variety) without restrictions. The genre of each game title provided in our study was identified by the game archive on Gamefaqs.com (www.gamefaqs.com).

Covariates

Covariates in this study included participant demographics, including age, gender, race, and family income. Age was examined as a dichotomous variable for even distribution, identifying participants as 18-19 years of age = 0 or 20+ years of age = 1. Gender was coded dichotomously Male = 1 and Female = 0. Ethnicity was coded

dichotomously White / Caucasian = 0 and Minority race = 1. Yearly family income was coded as 39,999 or less = 0, 40,000 to 49,999 = 1, 50,000 to 74,999 = 2, 75,000 to 100,000 = 3, and Over 100,000 = 4. In addition, I controlled for time spent with friends coded as Not at all = 0, Sometimes = 1, Often = 2, Most of the time = 3, and All the time = 4.

CHAPTER IV

RESULTS

Descriptive Results

First, I examined descriptive statistics for the covariates of my study. Of the 222 respondents who completed the survey, 55.41% (n = 123) reported that they played video games (see Table 1). On average, respondents reported spending 2 to 3 days a month playing video games (M = 3.04, SD = 1.399). Based on the given offline video game play time divided by overall video game play, 46.3% (n = 57) spent their time entirely offline (M = .7170, SD = .312). Support received from friends was high (M = 3.480, $SD \approx 0.491$) and strain received from friends was medial (M = 2.276, SD = 0.442). Game titles provided were categorized to one of the four categories of genre identified in this study (action, strategy, role-playing, and variety) based on the Gamefaqs.com game archive. Based on game titles given, game genre was primarily "Action" (47.2%) with a similar split among the other genres.

Bivariate Results

Next, correlations were examined among average offline video game play, covariates, average play, and support and strain received from friends (see Table 2). Bivariate results indicated support from friends is significantly correlated with yearly family income and daily time spent with friends. People from higher income households also spend more time with their friends and are more likely to have support from their friends. Bivariate results also indicated an inverse significant correlation between support and strain received from friends. As expected, those who receive more support Table 1

Characteristics	%	N
Age		
18 - 19	65	80
20+	35	43
Gender		
Female	55.7	68
Male	43.3	54
Ethnicity		
White / Caucasian	87.5	105
Minority race	12.5	15
Family of Origin's Yearly Income		
\$39,999 or less	20.8	25
\$40,000 to \$49,999	11.7	14
\$50,000 to \$74,999	20.0	24
\$75,000 to \$100,000	20.8	25
Over \$100,000	26.7	32
Time Spent with Friends		
Not at all	0	0
Sometimes	25.2	31
Often	31.7	39
Most of the time	33.3	41
All the time	9.8	12

Sociodemographics Descriptive (N = 123)

Table 2

Correlations E	Between Gena	er, Average	Game Play,	and Support	t and Strain	Received
From Friends						

Variables	1	2	3	4	5	6
1. Average Play Offline/Average Play		-280**	.033	069	.096	.060
2. Gender ^{α}			.169	.163	.007	.006
3. Family-of-Origin Yearly				.116	.192	.072
Income						
4. Daily Time Spent with					.345**	032
Friends						
5. Average support from						-
friends						.181*
6. Average strain from friends						
(Condow 0 - formula 1 - malor)	* < 0	5 ** < 01				

^{α}Gender: 0 = female, 1 = male; *p < .05, **p < .01.

from friends also reported lower strain from friends. In addition, gender was significantly negatively correlated with average play offline. This indicated male participants preferred less time offline than female participants did. Gender, income, and time with friends were significantly associated with support and strain received from friends and measured with the main variable associations.

Association Between Offline Video Game Play and Support Received From Friends

The first research objective seeks to examine the association between *offline video* game play (IV) and support received from friends (DV). I utilized a linear regression model to investigate this association (Table 3). Covariates in this model were gender, *income*, and *time with friends*. Overall, the model was significant between offline video game play and support received from friends (F = 6.449, df = 4, 112, p < .001) with 18.7% of the variance in the support received from friends accounted for by the collected independent variables. However, only daily time spent with friends was a significant

Table 3

						95.	0%			
	Unstand	ardized	Standardized			Confi	dence			
	Coeffi	cients	Coefficients			Interval for B		Correlations		
		Std.				Lower	Upper	Zero-		
Variables	В	Error	Beta	t	Sig.	Bound	Bound	order	Partial	Part
Gender ^α	097	.084	105	-1.155	.251	262	.069	034	109	098
Family-of-Origin	.030	.027	.095	1.100	.274	024	.084	.124	.103	.094
Yearly Income										
Daily Time Spent	.203	.042	.417	4.812	.000	.119	.287	.408	.414	.410
with Friends										
Average Play	.049	.132	.033	.370	.712	213	.311	.049	.035	.032
Offline/Average Play										

Regression Coefficients for Support Received From Friends

^{α}Gender: 0 = female, 1 = male

predictor of support received from friends (b = .203, SE = .042, p < .001). These results revealed there was no statistically significant association between video game play and support received from friends.

Associations Between Offline Video Game Play and Strain Received From Friends

The second research objective seeks to examine the association between *offline video game play* and *strain received from friends*. In order to investigate this association, I estimated a linear regression model. Covariates in this model were *gender, income,* and *time with friends*. Overall, the model was not significant between offline video game play and strain received from friends (F = .885, df = 4, 112, p = .475). These results also revealed no statistically significant association between video game play and strain received from friends.

Game Genre and Frequency of Play

The third research objective sought to explore whether specific aspects of a video game moderate the associations between *offline video game play, support received from friends*, and *strain received from friends*. The moderators specified were *game genre* and *frequency of play*. I conducted four linear regressions using Hayes (2013) PROCESS macro application, in version 24 of the statistical software SPSS (Baron & Kenny, 1986). The first two regressions have the association between offline *video game play* (IV) and *support received from friends* (DV) with attention to *game genre* then *frequency of play* as moderators. The last two regressions have the association between offline video game play (IV) and *strain received from friends* (DV) with attention to *game genre* then *frequency of play* as moderators. The last two regressions have the association between offline video game play (IV) and strain received from friends (DV) with attention to game genre then frequency of play as moderators. The last two regressions have the association between offline video game play (IV) and strain received from friends (DV) with attention to game genre then

frequency of play as moderators. Covariates in these models were *gender*, *income*, and *time with friends*.

Support Received From Friends

For game genre, the overall model for support was significant ($R^2 = .202$, F = 2.718, dfI = 10, df2 = 106, $p \le .01$) and time with friends was a significant predictor for support (b = .201, SE = .042, p < .001). Contrary to my expectations, game genre however did not significantly moderate the association between video game play and support received from friends ($R^2 = .013$, F = .432, dfI = 3.000, df2 = 106.000, p = .731).

For frequency of play, the overall model for support was significant ($R^2 = .475$, F = 6.919, df1 = 6, df2 = 110, p = .000) and the main effect of frequency of play was a significant predictor for support (b = -.072, SE = .035, $p \le .05$). Frequency of play, however, did not significantly moderate the association between video game play and support received from friends ($R^2 = .002$, F = .318, df1 = 1, df2 = 110, p = .574).

Strain Received From Friends

For game genre, the overall model for strain was not significant ($R^2 = .108$, F = 1.694, dfl = 10, df2 = 106, p = .092) and game genre did not act as a significant moderator ($R^2 = .023$, F = 1.364, dfl = 3, df2 = 106, p = .258). For frequency of play, the overall model for strain was also not significant ($R^2 = .061$, F = .975, dfl = 6, df2 = 110, p = .446) and the moderator, game genre, was not significant ($R^2 = .029$, F = 3.241, dfl = 1, df2 = 110, p = .075).

CHAPTER V

DISCUSSION

The results of the study sought to add to the relationship literature by examining how offline video game play was associated with friendship among emerging adults. The current study examined the association between offline video game play and support received from friends, the association between offline video game play and strain received from friends, and whether specific aspects of video games (game genre and frequency) moderate these associations. The results revealed no significant associations between offline video game play and support and strain from friends and provided no evidence of moderation by game genre and frequency. Based on these findings, I consider how alterations in the study procedure could be made to strengthen the study's approach.

Association Between Offline Video Game Play and Support Received From Friends

The first objective of the study was to analyze a potential association between offline video game play and support received from friends. Despite previous studies that support video games having a positive effect on relationships, video game play was not significantly associated with support received from friends. This is likely due to friendships being satisfactory between members based on continued interests and habits. As previous studies examined (Coyne et al., 2012; Tobias et al., 2015), family and romantic relationships are potentially influenced by video game play because of the interference of emotional development. Another possible explanation is the focus on one particular method of video game play (offline) instead of video game play as a whole. The questions and analysis from the MIDUS II Support Scale may also be considered too general to everyday interactions for the purpose of the study.

Association Between Offline Video Game Play and Strain Received From Friends

The second objective of the study in contrast was to analyze the potential association between offline video game play and strain received from friends. While numerous studies support the negative effects of video game play (Carnagey et al., 2007; Fraser et al., 2012; Lemmens et al., 2015), results indicated there was no significant association between offline video game play and strain from friends. One likely explanation is emerging adults are likely to spend time playing video games with friends they appreciate over conflicting ones. Conflictual friendships are simpler to distance or terminate compared to relationships with family and romantic partners that are associated with intimate knowledge and behaviors. Additionally, personal experiences from video game play create stories other friends who have played the same video game can relate to. As previously stated in the support discussion, the family strain scale may also be insufficient in relating just video game play with strain received from friends.

Game Genre and Frequency of Play

The third objective of the current study was to explore if the association between video game play and support and strain from friends varied by specific moderators of video games (game genre and frequency of play). Despite game genre determining the exposure of prosocial or aggressive behaviors as seen in previous studies (Dobrowolski et al., 2015; Elliott, Ream, et al., 2012), game genre did not moderate the association between video game play and support and strain received from friends. Frequency of

play also did not significantly moderate the associations between video game play and support and strain received from friends, although the main effect of frequency of play was significantly associated with support from friends. Although not an objective to the study, results revealed that time with friends was significantly associated with friends support. This result likely reinforces emerging adults' preference to spending more time with friends than with family, which leads to higher perceived support (A. W. Collins & Madsen, 2006).

Limitations and Future Directions

The aim of the current study has encouraged further research into offline video game play among emerging adults. The current study has multiple limitations that may have affected the results that should be addressed in future studies. The data collected are based off survey data and questions pertaining to quantity of play were omitted from analyses. A longitudinal study would be more favorable for addressing relationships over time with strain or support caused by video game play. A larger sample size may also be needed to detect effects. Although participants consisted of college students from the same campus and were offered incentive in most classes, it is also important to consider emerging adults not college-bound in future samples with the popularity of video game streaming as a sustainable form of income and career. Sociodemographic characteristics might have had an impact on the study, such as video game play being more preferable with friends among males than females. A family's income is also likely to skew results, such as this study's participants being able to attend college and play while others have to distribute scarce finances to meaningful resources. The focus of friendships in the current study is also a limitation. As video games continue to close the gap between age groups (Tobias et al., 2015), family members will have more influence on video game play among emerging adults. Unlike family though, friends can be chosen based on interests and habits. While one's family may object to video game play, one's friends are likely to encourage it. Additionally, emerging adults are classified to still have dependencies on adults including their parents for support, which leads to poorer relationship quality with them over extended habitation (Arnett, 2000). Romantic relationships also react differently to video game play compared to friend relationships. Romantic relationships involve personal time spent with a significant other more so than friendships, and among males, those who spend more time with video games also report more conflict in these relationships (Coyne et al., 2012). These influences are not limited to just support and strain either. Further studies should incorporate offline video game play among emerging adults with consideration towards family members, significant others, and additional connections between them.

Another limitation to the study was defining between online and offline video game play. There are video games that are designed for single player experiences, which at glance would suggest offline video game play as the study sought. Online player interactions, however, can still be achieved with others who have played or are playing the same game elsewhere, suggesting online video game play (i.e., *Dark Souls* allows players to place signs on the ground anywhere that other players online can see and interact with). Furthermore, multiple games also offer different "modes" of play, most commonly a single player or cooperative experience through a story (i.e. Player Versus Environment or PVE) and multiplayer mode against other players (i.e. Player Versus Player or PVP). The former is considered primarily offline video game play while the latter would be considered primarily online video game play. Online connectivity is interlaced into practically every device, and accounting for offline video game play would depend on a complete disconnect from the Internet or unreliable methods to quantify it. This encourages more of a need for offline video game play studies since online play depends on both game access and a stable online service while offline requires only the game. This discrepancy will allow individuals who might not have access to Internet services to contribute to video game related research. Future studies should find a reliable tool to account for accurate offline video game play into their findings.

Conclusion

The results of the study indicate support and strain received from friends is not correlated with offline video game play or its aspects of game genre and frequency of play. Friendships seem to foster regardless of the influence of video game play as suggested by the significance of time with friends and support. Family and romantic relationships are more likely to be swayed by video game play due to displacement of time. Traditionally time with close ones encourage togetherness and bonding, and time spent elsewhere may create conflict in these relationships. Offline video game play lies between these distinctions similarly to a board game: Time is being spent not directly for significant others, but the experience is meant to be genuine without outside influences. Although significance was not determined within this study, it allows for future studies to explore offline video game play as an independent method from the generalized interpretation of simply video game play.

APPENDIX

APPENDIX A

SURVEY

Appendix A

Survey

Sociodemographics

- 1. What is your age in years? (Drop down box here for selection)
- 2. Which gender identity do you identify with most? (Please check all that apply)
 - \Box Male
 - □ Female
 - □ Transgender
 - □ Gender Queer
 - □ Other: _____
- 3. Please specify your race and/or ethnicity: (Please check all that apply)
 - □ Native American or American Indian
 - □ Asian / Pacific Islander
 - \Box Black or African American
 - □ Hispanic or Latino
 - \Box White / Caucasian
 - □ Other:
- 4. Which range best describes your family-of-origin's yearly income?
 - \Box Less than \$5,000
 - □ \$5,000 to \$14,999
 - □ \$15,000 to \$24,999
 - □ \$25,000 to \$29,999
 - □ \$30,000 to \$39,999
 - □ \$40,000 to \$49,999
 - □ \$50,000 to \$74,999
 - □ \$75,000 to \$100,000
 - □ Over \$100,000

- 5. On a daily basis, how frequent do you spend time with friends? Friends can be considered as individuals you prefer to spend time with online and/or offline (Participants will select an item on a 5-point Likert scale ranging from *All the time* to *Not at all*).
- Of this time spent with friends, please provide a percentage of friends acquainted through online media (Internet, video games, etc.) and offline interactions (playing sports, going out for food, etc.):

Normative Contact with Relationship	Percentage of Overall Friends
Online (Internet, video games, etc.)	%
Offline (sports, outing, etc.)	%

(Participants will enter a numerical value for each category)

Support and Conflict from Friends

Friend Support [B1SFDSPO]

Schuster, Kessler, & Aseltine, 1990; Whalen & Lachman, 2000

(Participants will select an item on the scale for each question that best describes their support from friends: 1 = A lot; 2 = Some; 3 = A little; 4 = Not at all)

- 7. How much do your friends really care about you?
- 8. How much do they understand the way you feel about things?
- 9. How much can you rely on them for help if you have a serious problem?
- 10. How much can you open up to them if you need to talk about your worries?

Friend Strain [B1SFDSNE]

Schuster, Kessler, & Aseltine, 1990; Whalen & Lachman, 2000

(Participants will select an item on the scale for each question that best describes their strain received from friends: 1 = Often; 2 = Sometimes; 3 = Rarely; 4 = Never)

- 11. How often do your friends make too many demands on you?
- 12. How often do they criticize you?
- 13. How often do they let you down when you are counting on them?
- 14. How often do they get on your nerves?

Video Game Use, Frequency of Play, and Quantity of Play

- 15. During the past 12 months, how often did you play video games?
 - □ None
 - \Box Once a month or less
 - \Box 2 or 3 days a month
 - \Box 1 or 2 days a month
 - \Box 3 5 days a week
 - \Box Every day or almost every day

(Participants who answered with a 0 (*None*) will finish the survey here)

16. On average, how many minutes do you play video games in one session?

(Please provide an estimate)

17. How many minutes of time spent playing video games is played offline, or

without an online connection (single-player, split-screen, local area network)?

(Please provide an estimate)

Video Game Genre

18. What game title(s) do you play the most frequently? (Please provide up to

three game titles)

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