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Bryant University

The Graduate School

College of Arts & Sciences

THE PERSUASIVE POWER OF VIDEO GAME NARRATIVES: ADDRESSING EMPATHY AND ATTITUDES TOWARD PEOPLE WITH MENTAL ILLNESS

A Thesis in Communication

by

Kristy M. Najarian

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Submitted in Partial Fulfillment of the Requirements for the Degree of Master of Arts

December 2016

FACULTY APPROVAL

The mesis for Kristy Wajarian was reviewed and accepted by the followin	5.
Chair of Committee	Date12/15/16
Print name here 3/71 NW= 4 124042	
Signature <u>Allie</u> E VOLKMAN	Date_12/12/14
10	1.
Signature	Date 14/16
Signature Jessie Marintero Stron	Date 12/15/16
Graduate Program Director Signature Print name here (h.) R. Morse	Date_12/15/16

The thesis for Kristy Najarian was reviewed and accepted by the following:

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Abstract

Many college students find themselves struggling with mental health problems (ACHA, 2015). Individuals with mental illness not only battle with the disease, but with the stigma society has developed toward them, leading to a diminished quality of life. Education and contact are two antistigma approaches utilized in this study (Corrigan & Watson, 2002). This thesis aims to understand players' involvement in the video game narrative (i.e., narrative engagement and transportation) and its relationship with empathy and attitudes toward people with mental illness. As a way to alleviate stigma, college students (N = 97) were surveyed after playing the video game Fran Bow that was perceived by a focus group as having low in-game stereotypes. Contrary to prediction, results indicated that the video game did not have an effect on participants' empathy or attitudes toward people with mental illness. However, an exploratory assessment of media user characteristics offers interesting insights to the results. Additionally, findings suggest that those who were more involved in the narrative held more in-game story consistent beliefs. Overall, these results imply that video games can play an important role in prosocial change; however, the nature of the game and player characteristics may influence outcomes, therefore more research is needed.

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The Persuasive Power of Video Game Narratives:

Addressing Empathy and Attitudes toward People with Mental Illness

Many college students find themselves experiencing mental health problems (ACHA, 2015). Individuals with mental illness struggle not only with the disease's symptoms; they are also challenged by public stigma, including stereotypes, prejudice, and discrimination that result from society's widely held misconceptions about mental illness, ultimately leading to a diminished quality of life (Corrigan & Watson, 2002). Fortunately, two main change strategies, identified as *education* and *contact*, work to alter attitudes toward groups that suffer from public stigma (Corrigan & Watson, 2002). Additionally, *empathy* (i.e., a feeling that one understands and shares another person's experiences and emotions) has been empirically tested as a valuable technique for creating more positive responses and improving attitudes toward groups stigmatized by society.

Therefore, this investigation addresses public stigma toward people with mental illness by examining the *entertainment education strategy* (EE), a communication strategy that uses mass media, most typically radio and television, to influence awareness, attitudes, and behavior toward prosocial ends (e.g., providing information, reducing stigma, and promoting healthy behaviors) at the individual, community, or societal level by combining messages that both educate and entertain (Moyer-Gusé & Nabi, 2010; Singhal, et al., 2004). The EE strategy utilizes the narrative structure of entertainment storylines, either intentionally (e.g., to promote a healthy behavior) or unintentionally (e.g., added for dramatic appeal) embedding prosocial messages, facilitating an emotional experience of being swept up into the narrative itself and becoming involved with the characters therein (Moyer-Gusé, 2008, p. 409). An area of narrative persuasion

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rich with potential for both theoretical and empirical investigation is the use of entertainment video games to facilitate prosocial outcomes.

According to the Pew Research Center, the majority (67%) of 18 to 29 year-olds play video games, making them a popular form of entertainment among the college-student population (Duggan, 2015). Video games share two properties: they must be interactive activities wherein the players' actions influence the outcome or scenarios of the game, and they must be mediated via a computer interface (Passmore & Holder, 2014). Because of their unique elements (e.g., immersion), video games offer an interactive way of experiencing stories. Many cognitive scientists argue that stories, a basic form of human communication, are the most natural mode of thought and are universally enjoyed (Tooby & Cosmides, 2000; Schank & Abelson, 1995). For example, video games have been known to facilitate individual cognition and behavior change (e.g., attitudes, knowledge, and motivation) toward a specific interest (Klimmt, 2009). As such, a growing body of research has explored the influence of EE stories in television, film, and radio contexts; and more recently, video games are being examined as a way to facilitate learning experiences (Singhal & Rogers, 2004; Ritterfeld, Cody, Vorderer, 2009). Therefore, the goal of this investigation is to build on existing narrative persuasion literature to examine the influence of player involvement in a video game narrative that utilizes the EE strategy, ultimately to understand the underlying processes that make EE messages influential in the gaming context.

Objective: Examine the Influence of Narrative Persuasion on Prosocial Message Outcomes

There is need to further the study of the effectiveness of the EE strategy in video games, which warrants an empirical investigation of player involvement and the influence on two prosocial message outcomes: inspiration of empathy and positive attitudes toward people with mental illness. Because of their nature, EE messages foster *involvement* in the storyline, "being

primarily engaged in the storyline, rather than in one's immediate environment, and experiencing vicarious cognitive and emotional responses to the narrative as it unfolds" (Moyer-Gusé, 2008 p. 409). Both Busselle and Bilandzic's (2009) narrative engagement scale and Green and Brock's (2000) transportation imagery scale assess players' phenomenological experience of involvement with video game narratives. These scales measure players' sense-making and emotional engagement during play. Although transportation is predominantly used in narrative persuasion research, the narrative engagement construct is conceptually distinct and allows for further examination of the dimensions of player involvement in the gaming context.

Ultimately, this exploration moves beyond traditional media to advance our understanding of how video game narratives are processed and experienced giving message designers a way to best engage players with entertaining storylines to inspire prosocial change. Specifically, this research explores how players become involved with game narratives, and their influence on players' empathy and attitudes toward people with mental illness. Therefore, the hope is to reduce public stigma in the college student population using a video game.

Chapter 1 Literature Review

1.1 Mental Illness and Stigma

Recent data suggests college campuses are a place where many students experience mental illness. *Mental illness* affects individuals across all demographics, and is defined as a medical condition that disrupts individuals' feelings, mood, and thinking that reduces their cognitive capacity to relate to others and participate in daily life activities (NIMH, 2015a). The American College Health Association (2015) estimates 24.3% of college students have a mental illness, estimating anxiety at 15.8%, depression at 13.2%, and panic attacks at 7.7%. The prevalence of mental illness among the college population is in part due to the fact that by age 25, 75% of those who will experience a mental health disorder at sometimes in their lives will have had their first onset (Kessler, Amminger, Aguilar Gaxiola, Alonso, Lee, & Ustun, 2007). Yet, despite its prevalence, mental illness carries as a negative attribute, a connotation of weakness and shame.

Public stigma is a reaction that the general population has toward people with mental illness which involves: *stereotypes*, sometimes positive, but more frequently negative social knowledge structures that are collectively agreed upon notions of a group of persons that predetermine our attitudes, and they are learned by most members of a social group; *prejudice*, a cognitive and affective response that develops when a person or group endorses negative stereotypes (i.e., attitude, belief); and *discrimination*, the behavioral reaction once prejudice sets in (e.g., hostile behavior toward a minority group) (Corrigan & Watson, 2002). *Stigmatization* (the process of stigma) "is entirely contingent on access to social, economic, and political power that allows the identification of differentness, the construction of stereotypes, the separation of labeled persons into distinct categories, and the full execution of disapproval, rejection, exclusion, and discrimination" (Link & Phelan, 2001, p. 367). To understand public stigma a look at the general population's prejudice through their attitudes (i.e., "a general and enduring positive or negative feeling about some person, object, or issue") toward people with mental illness is warranted (Petty & Cacioppo, 1981, p.7).

Although there is a general trend to greater mental health literacy, specifically an increase in the community's understanding of the biological and genetic correlates of mental illness and a greater acceptance of professional help for mental health problems, attitudes of the general public have remained unchanged or even have shown negative changes toward people with mental illness (Schomerus et al., 2012). For example, in the U.S. the public attitude towards perceived dangerousness of people with mental illness have shown no significant improvements (Schnittker, 2008). Therefore, a significant problem for those who live with a mental illness is that this public stigma robs them of the opportunities that define their quality of life. Experiencing mental illness in college significantly predicts the avoidance of treatment seeking, lower grades, and greater risks of college dropout and suicide (i.e., the third leading cause of death among 15 to 24 year olds) (Arria et al., 2013; Corrigan, Druss & Perlick, 2014; Eisenberg, Golberstein & Hunt, 2009; Gruttadaro, D. & Crudo, 2013; McIntosh & Drapeau, 2012). Additionally, later in life there are decreased opportunities to live a long and healthy life (e.g., poorer employment, homelessness, reduced ability to seek satisfactory health care) (McQuilken et al., 2003; NIMH, 2015b; SAMHSA, 2012; AAS, 2012; U.S. Dept. of Housing and Urban Development, 2015). Because stigma is a factor that influences quality of life there is a need to know and practice strategies for reduction.

This research study focuses on *education* (i.e., EE strategy) and *contact* (i.e., video game characters), common approaches to addressing mental illness stigma demonstrating positive effects on reducing public stigma by improving attitudes and behavioral intentions (Corrigan et al., 2012; Corrigan & Watson, 2002). Relevant to this study's population, Kosyluk et al. (2016) found both strategies to reduce stigma and improve beliefs about empowerment, attitudes toward treatment seeking, and intention to seek treatment for mental health among college students. The current experiment utilizes involvement in a video game narrative to inspire empathy and influence positive attitudes toward people with mental illness among the college student population, in turn, hopefully reducing public stigma.

1.2 Entertainment-Education

The success of EE is grounded in the use of entertainment storylines to convey prosocial messages. These embedded messages are less "obvious," as opposed to public service announcements (PSA), brochures, and posters designed with the obvious intent to persuade, resulting in a more effective strategy because media consumers may be less resistant to their content (Murphy et al., 2011; Singhal et al., 2004; Slater & Rouner, 2002). Unlike traditional prosocial campaigns (e.g., 20 second PSA), directly embedding messages into popular programs (i.e., video games) results in uninterrupted entertainment that spans longer time frames, leaving message creators with the advantage of time.

Since the demonstrated success of EE, countless organizations have adapted the strategy, spreading education and entertainment worldwide (e.g., Center for Disease Control and Prevention (CDC); Hollywood, Health & Society) (CDC, 2015; Hollywood, Health & Society, 2014). To illustrate the use of the EE strategy in prime-time entertainment programing (i.e., the prime-time television drama *Desperate Housewives*), Murphy, Frank, Moran and Patnoe-Woodley (2011) demonstrated prosocial effects of a fictional health storyline surrounding a main character (Lynette) who was diagnosed with lymphoma, battled cancer, and overcame the disease. To exemplify, the behavioral outcomes of further seeking information and talking to family and friends about cancer were related to the viewers' level of involvement with the narrative (i.e., transportation). Recent television EE efforts include a comedy storyline about fetal abnormalities that can result from medical issues during pregnancy (*Jane the Virgin*), a drama storyline highlighting the female lead's suffering of post-traumatic stress disorder (PTSD) (*Madam Secretary*), and the topic of wounds on a children's program (*Doc McStuffins*) (Hollywood, Health & Society, 2014). Key to the effectiveness of EE is the careful balance of

both educational and entertainment content and the element of the narrative (Singhal et al., 2004).

1.3 Narratives

Narratives encourage audience members to become immersed in their storylines where those readers'/viewers'/players' attention is focused on the unfolding relationship of the characters, situations, and events, developing the expectation of "mere" entertainment, reducing perceptions that a message is persuasive (Moyer-Gusé, 2008; Slater, 2002; Slater & Rouner, 2002). "Narratives are accounts of social information, the unfolding of human relations and events" that require specific elements: scenes, dialogue, character, and point of view to make the story which can appear in a variety of texts, including film, television, video games, and novels (Clark, 2003; Slater & Rouner, 2002, p. 179). Writers of narratives often create worlds of fiction in which invented events and characters occur; nonetheless, these narratives present information about the real world that can have powerful influence on people (Green, Garst, & Brock, 2004). Slater (2002) suggests the use of narratives may be "one of the only strategies available for influencing the beliefs of those who are predisposed to disagree with the position espoused in the persuasive content" (p. 175). Wang and Singhal (2009) further suggest the coupling of narrative and interactivity embedded in video games offers the greatest promise for EE in the digital era.

1. 4 Properties of the Video Game

Video games are a form of entertainment for the 155 million Americans who play them, offering a unique opportunity to implement the EE strategy to a range of population sizes and demographics (ESA, 2015). Video games exhibit many forms and genres (e.g., interactive novels, massively multiplayer online roleplaying games [MMORPG], first-person shooter, and so on) and are played online and offline, solo, or with others, and on multiple platforms (e.g.,

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mobile phones, game consoles, computers). Additionally, because of their unique design capabilities, games can be tailored for different audiences, making them fundamentally powerful in the facilitation of prosocial outcomes. Video games are comprised of basic properties well known to media and game researchers: narrative, interactivity, multimodality, social interaction, and immersion. Therefore, this thesis will take a multiple-perspective approach to creating a solid understanding of why and how video games influence players.

Narratives are especially important to the success of interactive games. The majority of dramatic elements in game design have to do with the narrative, as games have the capacity to create story worlds in which players experience unfolding of events and possibilities of role modeling, identification, empathy, and efficacy that facilitate the prosocial outcomes of EE (Fullerton et al., 2004; Wang & Singhal, 2009). Lee, Park, and Jin (2006) define an *interactive narrative* as "a representation of events that provides a cognitive structure whereby media users can tie causes to effects, convert the complexity of events to a story that makes sense, and thus satisfy their primitive urges to understand the physical and social worlds" (p. 265). EE, because of its strong narrative component, offers unlimited opportunities for players to experience meaningful stories. As such, the narrative components (i.e., plot and character) then determine the immersive quality of the video game (Lu, Baranowski, Thompson, Buday & FAIA, 2012).

Additionally, *interactivity* allows players to influence the quality and progression of events occurring in the game world. Klimmt (2009) argues that a high level of participation creates an increased self-related connection between players and game events, as players perceive themselves as the center of events. Games become relevant to players as they see the results of actions as their own through planning, decision making, and personally witnessing cause-and-effect relationships, increasing the likelihood of learning and knowledge application (Baranowski, Buday, FAIA, Thompson, & Baranowski, 2008; Klimmt, 2009). Critically, the degree (i.e., extent to which the player is able to change and influence the progression of events) and nature (e.g., point n click) of interactivity may also influence the likelihood of prosocial outcomes. In addition to interactivity, the technological component of video games has a lot to offer players.

Klimmt (2009) also notes the importance of *multimodality*. First, advancement in technology, sharp graphics, and lifelike representations of the game world allow high quality play. Second, contemporary controllers are equipped with vibrations that transmit to the player (i.e., force feedback). Third, the controllers can be used as motion-oriented devices, allowing the player to use body movements (e.g., swinging a tennis racket) to control an in-game outcome (i.e., hitting a tennis ball). Forth, speech recognition technologies with built-in microphones (e.g., Xbox Kinect) allow, for example, players to have "natural" conversations with game characters, and players can engage in speech therapy (i.e., practice communication exercises) (see Folkins, Brackenbury, Krause, & Haviland, 2016). Klimmt suggests multimodality increases the likelihood of players' knowledge acquisition and knowledge application. Wang and Singhal (2009) further suggest multimodality offers opportunities for establishing infrastructure and facilitating discussions about the prosocial content during and after game play. This may be because of the unique opportunities to play games with others (i.e., social interaction).

Additionally, video games by nature offer a *social affordance* among players and groups, as well as reciprocal interactions between computer-related applications and players. Wang and Singhal (2009) state that communication may enhance the enjoyment of the game-play experience, and as a social activity it can facilitate collective learning. This may be especially true of massive multiplayer online (MMO) games, because they foster group and collective

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change. Social multiplayer games alter the experiential quality of digital games, opening new possibilities for the appeal of entertainment and power of prosocial games (Klimmt, 2009). For example, children can play an exergame with friends; therefore, the social factor of the game should increase effort (e.g., competition) and prosocial outcomes.

Gee (2009) argues that we best learn through thinking and problem solving through experiences. Gaming has specific properties connected to learning, allowing players to take different perspectives, play in different roles, practice, experience, build, fail, and accomplish. Gaming allows the highest experiential state when it comes to learning, compared to passive states of learning, for example reading, watching a video, listening to a lecture. Wang and Singhal (2009) offer key components of experiential game play: first, emotional engagement (e.g., enjoyment); second, curiosity and experimentation with multiple identities with infinite possibilities; and third, players are the center of the action (e.g., if a character experiences sadness – the player experiences sadness). Therefore, when video game narratives encompass and capture players' undivided attention, as if they are actually part of the game environment, they are experiencing *immersion* (i.e., becoming involved literally and emotionally in the story) (Baranowski et al., 2008, p. 6).

As media and game researchers continue to create and understand video games, attention needs to be given to these properties (i.e., narrative, interactivity, multimodality, social interaction, and immersion) as elements that can foster prosocial outcomes. Then, it is essential to understand players' experience and processing of persuasive content in a game narrative with EE messages.

1.5 Narrative Persuasion

Narrative persuasion works because of the narrative's ability to inspire message involvement through story elements as attention is focused on the unfolding relationship of characters, situations, and events (Slater & Rouner, 2002). Scholars have used a number of concepts to describe the phenomenological experience of becoming involved in a narrative (e.g., engagement, immersion, absorption, transportation, presence) (Slater & Rouner, 2002). Nonetheless, central to all narrative persuasion contexts is individuals' experience of being involved in the story whereby the story influences their knowledge and real-world values, attitudes, beliefs, and behaviors (Green & Brock, 2000, 2002; Moyer Gusé, 2008, Slater & Rouner, 2002).

Presence is a psychological state, the experience of being engaged by the representations of a virtual world (Lombard & Ditton, 1997; Eastin, 2013). Media users experience a sensation of immersion or feeling of connection (i.e., feeling as part of the action, sense of being there, emotional connection) with the mediated content or characters (Eastin, 2013). A sense of presence is achieved through an interaction of media form (e.g., screen size, interactivity), media content (e.g., violent video games), and characteristics of the individual media user (Eastin, 2013). Lombard (2000) describes this experience of presence in the virtual world as an *illusion of nonmediation*.

This illusion can be looked at through the lens of what has often been called a "willing suspension of disbelief," a phrase coined by Coleridge (1847) as a model that suggests how individuals may become engaged in textual representations. Individuals put aside knowing the events in a narrative are fictional in order to fully enjoy the experience. To illustrate how a narrative is processed, Gilbert (1991) suggests all information has to be processed as factual or truthful, and that active cognitive effort is required to recall and discount even information

known to be false. Therefore, this suspension of disbelief may not be "willing" but a natural human instinct. Gerrig's (1993) theory assumes that people will believe what they read---"persuasion by fiction is the default outcome"--only until they consciously analyze such claims and reject those that are unwarranted (p. 227). If individuals compare a fictional world with real life, that will undermine a sense of presence (Gerrig, 1993).

Csikszentmihalyi's (1988) theory of "flow" explains a sense of presence when a virtual world is viewed as a *locus of activity*. Conceptualized as a *flow* experience, "presence entails a merging of action and awareness, during which a person loses self-consciousness and a sense of time, focusing on the present, blocking out the past and the future" (Jacobson, 2002, p. 4). The essence of games that make flow experiences intrinsically satisfying are intense involvement, clarity of goals and feedback, concentration and focus, lack of self-awareness, distorted sense of time, balance between the challenge and the skills required to meet it, and a feeling of complete control over the activity (Csikszentmihalyi, 1988). Specifically, video games allow flow experiences to take place because a game holds ideal properties to create and maintain those experiences (Sherry, 2004).

Player involvement in a narrative. Narrative persuasion works because storytellers captivate individuals; from the perspective of "belief as default," the stories become real while the narrative unfolds because of the distraction placed by becoming involved in story elements (e.g., dialogue, character) (Slater & Rouner, 2002). This distraction encourages players to abstain from critical assessment of the persuasive claims of EE messages in the story in order to enjoy it, for enjoyment is the central core experience of entertainment (Ritterfield & Weber, 2006; Slater & Rouner, 2002; Vorderer, Klimmt, & Ritterfield, 2004). This enhanced state of engagement depends upon the attraction to the storyline, the quality of production, and the "unobtrusiveness

of persuasive subtext" (Moyer-Gusé, 2008; Slater & Rouner, 2002, p.178). Even if recipients are aware of persuasive intent, a captivating narrative can cause awareness to disappear into the background while recipients suspend disbeliefs and experience the story (Slater & Rouner, 2002). Here, it is not the persuasive message itself that fosters a degree of involvement in the narrative; involvement is dependent upon how well the narrative serves the needs and goals of the recipient (Slater, 1997).

Transportation, a term coined by Green and Brock, can explain this experience of immersion in the game world. *Transportation* into a narrative (fictional or nonfictional) is "a convergent process, where all mental systems and capacities become focused on events occurring in the narrative" (Green & Brock, 2000, p. 701). As with flow, transported individuals lose awareness of their physical surroundings, reacting emotionally and cognitively as they experience vivid mental images tied to a story's plot (Csikszentmihalyi, 1990; Green, Garst, Brock, 2004). A number of narrative persuasion studies have utilized and found support for Green and Brock's (2000) transportation scale as a key measure of narrative involvement (Green & Brock, 2000; Moyer-Gusé & Nabi, 2010; Vaughn, Hesse, Petkova, & Trudeau, 2009). In addition, Appel and Richter (2010) argue the transportation construct is the best measure of involvement in a narrative, although, it has been suggested that an individual's transportation into a story world is only one dimension of a larger phenomenon of becoming involved in a narrative.

Busselle and Bilandzic (2009) call the phenomenological experience of processing and being involved in a narrative, where one loses awareness, *narrative engagement*. The researchers identified a comprehensive list of constructs and measures that represent different aspects of experiencing a narrative. The four dimensions central to understanding the power of narrative persuasion and their influence on outcomes (e.g., influence on attitudes) are narrative presence, narrative understanding, attentional focus, and emotional engagement. *Narrative presence* is a shift in perspective-taking, and like transportation, a sensation of losing self-awareness, space, and time in the real world and entering the story world, a deictic shift. *Narrative understanding* measures ease of comprehending the narrative, how viewers make sense of the narrative. *Attentional focus* examines viewers' lack of distraction by thoughts unrelated to the narrative. *Emotional engagement* describes emotions and feelings for or with story characters, (i.e., sympathy or empathy). These four dimensions of narrative engagement have been empirically validated in a number of studies (Quintero Johnson & Sangalang, 2016; Sukalla, Bilandzic, Bolls, & Bussellle, 2015). Examining the experience of involvement in a video game narrative with these two constructs furthers the investigation of narrative persuasion beyond traditional media.

1. 6 Outcomes of Narrative Persuasion

Game evidence. Many video games have been developed with the intention to be more than entertainment (i.e., EE). They are applied to a wide range of areas (e.g., military, education, cooperate, healthcare, government), and can be engaging, impactful, meaningful, and purposeful for all ages and genders that play them. For example, games can be used for practicing skills (e.g., *Math Blaster*, 2006), for cognitive problem solving (e.g., *Brain Booster*, 2008), for social problem solving (e.g., *Quest for Independence*, 2008), and for knowledge gain through exploration (e.g., (*Paestum Game*, 2008) (Ratan & Ritterfield, 2009).

There are many game topics that are used as tools to promote learning (e.g., mathematics, natural sciences, problem solving, second language, software development, history and geography). To illustrate education outside of the classroom, Goodman, Bradley, Paras, and

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Bizzochi (2006) developed a game (Symptom Shock) to promote concussion knowledge acquisition in youth hockey players. Research indicated that participants who played the experimental version of the game which used concussion symptom (e.g., seeing stars) or symptoms not generally related to concussions (e.g., sore throat) icons scored significantly higher on the concussion symptom questionnaire and in a significantly faster time than participants playing the control version of the game which used animal and face icons. The game was found to be enjoyable and repeatable. Naturally, classroom educational-game opportunities are also present. Unlike lectures and classroom discussion, games are played at the pace of the user. Gee (2003) states there is promise in the science classroom, where learning works best if students think, act, and value like scientists. Games can show us how to get people to invest in new identities and roles, which are powerful motivators for new and deep learning experiences in the classroom or workplace. To illustrate, the algebra game *Dimexian/Evolver* increased high school students' learning outcomes by 7.2% over lecture-based instruction, and the cell biology game Virtual Cell increased college students' learning outcomes by 40% on average over lecture-based instruction (Mayo, 2009).

Video games for health interventions are frequently developed because games allow for distraction, increase in motivation, repetition, stress management, and role-playing. Game topics may include burn pain, diabetes, asthma, anxiety management, and physical therapy. Kato (2010) provides a detailed systematic analysis of commercially available and tailor-made games for health and medical education. To illustrate success, *Re-Mission*, a tailor-made game for pediatric cancer patients, prompted participants to control a nanobot on its journey through a virtual body of different cancer patients to destroy cancer cells and tumors with chemo and radiation. The educational component of the game included animated information and direct

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interactions with the environment to combat side-effects of chemo. Overall, participants who played *Re-Mission* maintained higher levels of chemo in their blood and took prophylactic antibiotic medication more frequently than prescribed (for complete review see Kato, 2010).

Video games act as a catalyst for social change. If successful, a critical mass of behavioral alteration is achieved, producing future chain-reactions and ultimately leading to selfstabilizing processes (Klimmt, 2009). EE games have the potential to integrate complex and sensitive topics through the simulation of experiential gameplay, allowing players to reflect on the world around them. To illustrate, *Darfur Is Dying* (2006), an EE game played by more than 800,000 players within five months of its release, allows players to take the perspective of refugees who need to fetch water in a dangerous warzone. If the refugee is caught, the player is caught. If the refugee suffers, the player suffers (Gorman, 2007). Games have the potential to educate, increase healthy behaviors, and foster social change. Therefore, there is reason to believe narratives have the ability to persuade players by increasing attitudes and inspiring empathy as outcomes of experiencing involvement in a video game narrative.

Empathy. Empathy is an important element in creating more positive responses to groups who experience public stigma. Empathic feelings arise when an individual takes the perspective of a person in need, imagining how that person is affected by his or her plight (Coke, Batson, & McDavis, 1978). Batson and his colleagues (1997) showed that feeling empathy for a member of a stigmatized group (i.e., young woman with AIDS, homeless man) improved attitudes toward the group as a whole, resulting in more positive attitudes toward individuals in both stigmatized groups. They experimentally demonstrated that extremely negative attitudes (i.e., toward a convicted murderer) could be affected despite resistance. Additionally, Batson, Chang, Orr, and Rowland (2002) demonstrated that higher empathy toward a group (i.e., drug

addicts) significantly and positively changed attitudes that led to prosocial action (i.e., allocation of Student Senate funds to an agency to help drug addicts).

To illustrate the influence of immersion into the mind of another, Bunn and Terpstra (2009) conducted an interactive activity (non-video) that looked at the issue of cultivating medical students' empathy toward people with mental illness. Using headphones to listen to a 40-minute simulated auditory hallucination presentation, participants underwent a psychiatric interview, simplified cognitive testing, and were asked to socially interact in the community. As a result, participants' empathy scores increased. Overall, this study suggests that empathy can increase when artificially experiencing what some people with mental illness experience daily. This notion of promoting empathic affective responses has been recently demonstrated with video games that inspire prosocial helping behavior (Greitemeyer, Osswald & Brauer, 2010; Prot et al., 2014). It is essential then to understand whether empathic responses are in part due to a player's involvement in the narrative world.

Recent literary research indicates that when individuals experience transportation into fictional narrative worlds, they learn skills of empathy and social understanding. Bal and Veltkamp (2013) concluded that only when participants experienced transportation into the fictional story was their empathy influenced. When assessed with a one-week follow-up survey, empathy scores remained higher than those of readers who never experienced transportation, indicating the higher the transportation the higher the empathy. Another study conducted by Johnson (2012) examined the experience of transportation into a fictional world of a short story. Results indicated that participants who were more transported exhibited higher affective empathy and were more likely to engage in prosocial behavior.

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The influence of prosocial video games and empathy. Video games have been created to specifically inspire empathy. For example, *Elude* (2010) is a single player game intended to inform family and friends of people with depression about what their loved ones are going through. The game attempts to foster tolerance and understanding for depression, and as a result, alleviate complex feelings of anger, helplessness, guilt, and sadness that caregivers may experience (Rusch, 2012). Still, the influence of narrative involvement on outcomes of video games specifically designed to provoke empathic responses is still relatively unexamined.

In the context of video games, Brookes, Moyer-Gusé, and Mahood (2011) tested if transportation through a role-playing game (RPG) (Fallout 3) could occur. The results indicated that the level of players' transportation into the narrative is likely to influence emotions. To further this study, Mahood, Hanus, and Cruz (2012) examined if transportation could in fact impact players' emotions. Participants (n = 184) played the video game Fallout 3. Results showed that players felt guilty and ashamed when taking on the role of a video game character who has committed immoral actions, especially when they felt transported or "wrapped-up" in the narrative. In addition, exposure to immoral actions caused players to show increased aggressive behavior tendencies. Additionally, part of the narrative engagement construct is feeling emotionally engaged, occurring when individuals are "lost" in the story world (Busselle & Bilandizic, 2009). Therefore, players often have a high level of emotional investment, provided that they are immersed. If players lack empathy, they will not feel totally immersed in the story world (Brown & Cairns, 2004). Taken together, these results give reason to predict that video games, because of their power to transport, will also influence an empathic response, as empathy itself is the ability to share and experience another person's emotions.

Attitudes. A considerable amount of experimental evidence indicates that when individuals experience transportation from the "real" world into a "fictional" narrative world, their attitudes can be influenced because they are wrapped up in the storyline (Green & Brock, 2000; Murphy et al., 2011). Busselle and Bilandizic (2009) relay that when participants report being more engaged in a narrative they also have reported stronger story-consistent beliefs and attitudes (Green & Brock, 2000; Green, 2004). Player engagement should lead to less counterarguing with the stories messages and in turn, lead to greater elaboration of story-related information (Slater, 2002). Therefore, the authors suggest that one outcome of engagement with a narrative is story-related attitudes.

Research has also shown that EE video games can influence player's attitudes. Alhabash and Wise (2014) explored the effects of *PeaceMaker* (a role-playing simulation video game of the Palestinian-Israeli conflict) on participants' attitudes toward Israelis and Palestinians. Results indicated that playing the video game changed participants' explicit stereotypes of both national groups in a role-congruent fashion. For instance, participants assigned to play as the Palestinian President or the Israeli Prime Minister negatively changed their evaluations of the opposing national group. In addition, implicit bias moderated stereotype change. Another EE game (*Making Smart Choices*) described by participants as "interesting," "interactive," "informative," and real-to-life," was developed to disseminate correct knowledge and positive attitudes about sex to teenagers in Hong Kong (Chu et al., 2015). The game was well received by players, and results showed a positive increase in attitudes toward sex and relationships and an awareness of having safer sex practices and making smart sexual choices. Although the study did not look at narrative involvement, it suggests games can influence healthy attitudes. Lee, Kim, and Kim (2015) utilized a health game (*Paldokangsan*) that promotes walking as a leisure activity for seniors as therapeutic play. As for attitudes, results indicated major change as participants significantly positively increased their attitudes toward the exercise behavior, and intention to perform the exercise. This research suggests further investigation of the underlying motivations for attitude change.

Involvement in a game world can also influence players' health-related preferences. Lu et al. (2012) assessed story immersion (i.e., transportation) and its role in a health video game (*Escape from Diab*) among children. Immersion was assessed with questions adapted from Green and Brock's (2000) transportation imagery scale. Results indicated preferences for fruit and vegetables, water intake, and physical activity were positively influenced. The authors suggest the more immersive the health game is, the more influential it will be on players' health attitudes and preferences. Although there are relatively few studies assessing narrative involvement on attitude change in the gaming context, there is reason to believe that just like traditional media (e.g., television), games foster EE, especially because of their unique properties that encourage involvement.

Therefore, in moving this exploration beyond traditional media, an examination of the differences in influence between a video game narrative that utilizes the EE strategy with the theme of mental illness and a video game that does not have any representations of mental illness is undertaken in terms of prosocial message outcomes. As such, the following hypotheses will be tested:

H1a: Participants who play the video game with representations of mental illness will report higher empathy scores toward people with mental illness than those who play the control video game

H1b: Participants who play the video game with representations of mental illness will report higher attitude scores toward people with mental illness than those who play the control video game

Additionally, this exploration warrants a look at the video game with representations of mental illness to understand what may foster or hinder the effectiveness of the EE strategy in the context of video games. Specifically, several questions revolve around whether characteristics of the media user and her or his level of involvement in the video game narrative influence prosocial message outcomes. The following research questions are asked:

RQ1a: Do participants' characteristics (i.e., demographic difference variables) influence their empathy and attitudes toward people with mental illness?

RQ1b: Do participants' characteristics (i.e., demographic difference variables) influence their level of narrative involvement?

Additionally, there is need to further examine how players become involved in a video game

narrative and how underlying constructs of narrative involvement are related to prosocial

message outcomes. The following research questions are asked:

RQ2a: What is the relationship between participants' level of transportation and their attitudes and empathy toward people with mental illness?

RQ2b: What is the relationship between participants' level of narrative engagement and their attitudes and empathy toward people with mental illness?

Last is a look at whether player involvement in the narrative influences story-consistent beliefs

(i.e., in-game stereotypes) to understand how players perceived the messages in the video game

and whether involvement in the narrative influences these results. Thus, it is asked:

RQ3: Do participants' levels of narrative involvement influence perceptions of in-game stereotypes?

Chapter 2 Methodology

The purpose of this study was to expand on narrative persuasion research in the context

of video games for prosocial ends (i.e., empathy and attitudes toward people with mental illness).

The main objective was to explore how players became involved with narratives influencing

their empathy and attitudes toward people with mental illness with hopes of reducing public stigma in the college student population. This research exploration was conducted in two phases.

A formative research phase involved two focus groups, conducted in early September 2016 on two separate days. One focus group assessed the treatment condition and the other the control condition. Both groups took part in complete experimental procedures, and engaged in a group discussion. As such, the focus groups informed the experimental study. The second phase was a post-test only experiment, with one randomized treatment group (i.e., video game with the topic of mental illness), and one randomized control group (i.e., video game that does not pertain the topic of mental illness). Participants first played the video game and were then prompted to complete post-test measures for all independent and dependent variables, including demographic questions.

2.1 Focus Group

Sample. Students enrolled at a small university on the East Coast of the United States during the fall, 2016 semester who were at least 18 years of age and students were recruited. Utilizing a nonrandom convenience sample, a paper flyer was sent out to an undergraduate communication class. Participants were given the choice of extra credit or \$5 cash to compensate for their time and effort. There were 16 participants, 11 males and 3 females; 2 cases did not report gender. Age (n = 10) ranged from 20 to 21 (M = 20.80, SD = 0.42). Reports on race/ethnicity indicated 50% of the sample was White (n = 8), 25% were Black or African American (n = 4), 6.3% were American Indian or Alaska Native (n = 1); with 1 case missing. The most frequent class year observed was senior at 62.5% (n = 10), junior at 18.8% (n = 3), sophomore at 6.3% (n = 1), and freshman at 12.5% (n = 2).

Participants reported on their experience with mental health. 43.8% of participants (n = 7) reported previous mental health experience; of those, 3 reported having a mental illness themselves, 4 reported a family member with mental illness, and 6 reported a friend disclosing a mental illness to them. 53.6% of participants (n = 9) reported no mental health experience. In addition, participants reported on their experience with video games, with participants (n = 15) playing between 0 and 21 hours per 7-day week (i.e., Monday through Sunday) (M = 4.73, SD = 6.62), with 1 missing case. When asked to rate themselves as a 1 "casual" to 5 "serious" gamer, 18.8% reported N/A (n = 3), 31.3% were casual gamers (n = 5) reporting a 1, 12.5% (n = 2) reporting a 2, 25% (n = 4) reporting a 3, 6.3% (n = 1) reporting a 4, with 6.3% as serious gamers (n = 1) reporting a 5. Last, on a scale of 1 "beginner" to 5 "master," 12.5% of participants were beginners at playing computer games (n = 2), followed by 37.5% (n = 6) reporting a 2, 25% (n = 4) reporting a 4, and 6.3% (n = 1) reporting a 5; here was 1 missing case.

Procedure. The focus groups served as the trial run of the recruitment procedure, experimental set up, the flow of the experimental procedures, survey design (i.e., quality of the survey design, and validity and reliability of the scales), and validity of the video games. Entire focus group procedures took approximately 1 hour and 10 minutes, with one facilitator leading the focus groups following a facilitator's guide. Both the treatment (n = 6) and control (n = 10) focus groups were face-to-face sessions conducted in the same computer lab. A coin was flipped, and each day was randomly assigned to an experimental condition. Participants were seated away from one another at computers. The facilitator prompted the reading and signing of the online informed consent form and read a brief description of the focus group (See Appendix A for focus group informed consent).

The participants in the treatment group were told, "This video game (*Fran Bow*) is in post-production. As the researcher, I am giving you the chance to demo the video game, and I am looking forward to your feedback. You will each play the video game; then you will complete a follow up survey. After we will all engage in a group discussion." "The character you are playing as is Fran Bow, a young girl with a mental illness. Use the computer mouse to control the movements in the video game, and use the headphones." The participants in the control group were told, "This video game (*Spy Fox 2: Some Assembly Required*) is an older video game. I am giving you the chance to play the video game and I am looking forward to your feedback. You will each play the video game, and then you will complete a follow up survey. After we will engage in a group discussion." "The character you are playing as is Spy Fox a secret agent who is solving a mystery. Use the computer mouse to control the movements in the video game, and use the headphones." Participants in both groups were timed for 25 minutes of game play. After, participants completed an online post-test survey. Complete experimental procedures took no longer than 35 minutes.

Next, the facilitator read an introductory statement to each group and proceeded to ask questions following the facilitator's guide. Last, a closing statement was read and participants were asked not to discuss the study with anyone to prevent influencing results. Participants received extra credit or \$5 for their participation, and were dismissed (Facilitators Guide, see Appendix B).

Treatment video game. The researcher conducted a careful review of the four commercially available video games with prosocial messages surrounding the topic of mental illness (i.e., *Fran Bow, Elude, Actual Sunlight, Town of Light*). The game selected was *Fran Bow,* an indie horror, point-and-click, adventure game developed by Killmonday Games, first

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released in 2015 on computer platforms (Windows/Mac/Linux), and in 2016 on tablets and smartphones (Andriod/iOS), also playable in multiple languages (English, Dutch, Spanish, Russian). Specifically, *Fran Bow* is commercially accessible, received positive game reviews, utilizes narrative-driven game play, and has a main playable character with a mental illness, and it supports engaging game features (See Appendix C for complete game description).

The treatment focus group provided insights to solidify the game selection. All participants (n = 6) enjoyed playing *Fran Bow*. For instance, one participant stated, "The game was interesting, kept me playing." Another participant said, "I wanted to keep going." All participants (n = 6) liked the character Fran Bow. All participants (n = 6) understood that the playable character had a mental illness. When probed how they knew the character had a mental illness, some stated reasons such as medical charts in the game, having taken psychology class, the beginning of the game in the therapy room, the medication given to the character. Participants (n = 4) cared about the character (e.g., sympathy, empathy, affective responses). For example, a participant stated, "Sad for her."

Regarding the metal illness theme of the video game, participants (n = 5) agreed to its accuracy, being realistic, understandable, and believable. Considering in-game stereotypes, participants stated, "The kid was not scary;" "She was smart, combining things;" "In games I play [with mental illness themes] they are locked up, trying to kill me. Have you played *Amnesia?* Different perspective here." Last, participants (n = 5) agreed that after playing they had a sense of knowledge about what it is like to live with a mental illness.

For the purposes of this experiment, this is a computer based point-and-click style game, therefore, easily playable by nongame players; in which all participants (n = 6) agreed with this assessment. This video game (its Chapter 1) has a playtime of approximately 35 minutes to fully complete. All participants (n = 6) agreed 25 minutes was a good amount of playtime.

Control video game. Spy Fox 2: Some Assembly Required is a point-and-click adventure game developed by Humongous Entertainment, and was released in 1999. It is available on computer platforms (Windows/Mac OS) and tablets and phones (Andriod/iOS). This game was selected for the control condition because of its accessibility, game style that closely resembles that of the treatment condition, the speed of the game, the playable character, and the strong narratively driven story line. (See Appendix C for a game description).

The control focus group provided insights to solidify the game selection. Participants (n = 9) enjoyed the video game. Participants (n = 8) found the game easy to play. Participants (n = 9) found they could get into playing the video game and were not watching the clock. Participants (n = 8) liked the character Spy Fox; others (n = 2) were indifferent. *Spy Fox*'s target audience is novice or junior video game players, utilizing a simple point-and-click design. For the purposes of this experiment the game was easily learnable and playable by nongame players. All participants (n = 10) agreed 25 minutes was a good amount of playtime.

Measures. Post-test measures included demographics, attitudes toward people with mental illness, empathy toward people with mental illness, transportation, narrative engagement, and in-game stereotypes. Distractor questions assessing game design were placed strategically throughout the questionnaire as not to attract the participants' attention to the study's true intention (See section 2.2 for a description of all measures).

Focus group insights. Insights were given on the validity of the measures. Specifically, all participants (N = 16) found the directions and survey questions understandable. When asked, participants (N = 16) found the questions addressing mental health experience comfortable and

straightforward. The focus groups concluded that the true purpose of the experiment was not overt in the online questionnaire.

Preliminary reliability. The researcher conducted a preliminary reliability analysis using the Statistical Package for the Social Sciences (SPSS) Version 22. Internal consistency of survey items was measured using Cronbach's alpha and was met for all scales except one. Briefly: measured with all participants (N = 16); attitudes toward people with mental illness ($\alpha = .86$), empathy toward people with mental illness ($\alpha = .77$), transportation ($\alpha = .78$), and narrative engagement ($\alpha = .85$). Measured with the treatment group (n = 6) only was in-game stereotypes ($\alpha = .54$), and if item 3 was deleted ($\alpha = .75$). All 6 items were kept for the experimental study because of the number of participants and construction of the scale.

Preliminary treatment game assessment. Additionally, to assess whether the treatment video game narrative held in-game stereotypical beliefs, descriptive statistics were run on the "in-game stereotype" Likert-type scale, measuring from (1) "very much so" to (7) "not at all" on the presence of in-game stereotypes. Results indicated that participants (N = 6) acquired a mean score 4.81 with a *SD* of 0.75. There was a minimum score of 3.67 and a maximum score of 6.0, with a range of 2.33. Overall, these descriptives suggest the treatment video game (i.e., *Fran Bow*) held a low amount of in-game stereotypes, solidifying game choice.

2.2 Experimental Study

2.2.1 Sample. The participants met the criteria for selection; they were 18-years or older and were students. A nonrandom convenience sample was used to draw from the population of focus. The researcher coordinated recruitment efforts with five instructors from the Communication Department at a university, in which advertisement flyers and word of mouth was used as recruitment tools. As an incentive to increase response rate, participants received

extra credit from their instructors for participation in this study and were entered into a drawing to win 1 of 2 \$100 gift cards to the university bookstore. Recruitment efforts yielded 130 potential participants who signed up to participate, each selecting one of 15 experimental sessions taking place over the course of 4 days.

The participants (N = 97) were enrolled at a small university on the East Coast of the United States. Experimental sessions were randomly assigned to either the treatment group (n = 49) or control group (n = 48). Participants (n = 62) ages ranged from 18 to 39 (M = 20.47, SD = 2.69) yielding a median age of 21; 35 cases did not report age. Approximately 38% of participants were male (n = 37) and 59.8% were female (n = 58); 2 cases did not report gender. In terms of race/ethnicity, 79.4% of participants were White (n = 77), 10.3% were Black or African American (n = 10), 5.2% were Hispanic or Latino (n = 5), 3.1% were Asian or Asian American (n = 3), 1% were American Indian or Alaskan Native (n = 1), and 1% were Hawaiian or other Pacific Islander (n = 18), 21.6% were juniors (n = 21), and 49.5% were seniors (n = 48).

Regarding experience with mental health, 51.5% (n = 50) responded "yes" to the question, "Have you, anyone in your family or friends *ever* been diagnosed with a mental illness (e.g., depression, obsessive compulsive disorder, ADHD)?" and 48.5% (n = 47) reported "no." Of those with mental health experience 19.6% (n = 19) reported having a mental illness themselves, 39.2% (n = 38) reported having a family member with mental illness, and 40.2% (n = 39) reported a friend disclosed having a mental illness to them.

In terms of experience with video games, 45.3% of participants (n = 44) reported playing 0 hours of video games during a 7-day week (Monday through Sunday), 8.2% reported 1 hour of

play (n = 8), 7.2% reported 2 hours of play (n = 7), 3.1% reported 3 hours of play (n = 3), 2.1% reported 4 hours of play (n = 2), 8.2% reported 5 hours of play (n = 8), 2.1% reported 6 hours of play (n = 2), 1% reported 9 hours of play (n = 1), 2.1% reported 10 hours of play (n = 2), 1% reported 14 hours of play (n = 1), and 2.1% reported 20 hours of play (n = 2). Video game play per week ranged from 0 to 20 hours (M = 2.18, SD = 4.00); 17 cases did not report hours of play per week.

When asked to comment on video game experience ranging from categories of "casual" (1) to "serious" (5) gamer, 44.3% (n = 43) were casual gamers who chose category 1, 11.3% (n = 11) chose category 2, 6.2% (n = 6) chose category 3, 4.1% (n = 4) chose category 4, 3.1% (n = 3) were serious gamers who chose category 5, 28.9% (n = 28) chose N/A; 2 cases did not report. Participants also reported on computer game experience ranging from categories of "beginner" (1) to "master" (5), 40.2% (n = 39) were beginners who chose category 1, 20.6% (n = 20) chose category 2, 16.5% (n = 16) chose category 3, 5.2% (n = 5) chose category 4, 5.2% (n = 5) were masters who chose category 5, 5.2% (n = 5) chose N/A; 7 cases did not report. Last, when asked to choose their favorite video game type from a list of categories, 10.3% of participants (n = 10) chose action, 12.4% (n = 12) chose adventure, 9.3% (n = 9) chose dance/music/party, 2.1% (n = 3) chose simulation, 23.7% (n = 23) chose role playing, 2.1% (n = 19) chose shooter, 3.1% (n = 3) chose survival/horror, 1% (n = 1) chose other, 5.2% (n = 5) chose N/A, and 3 cases did not report.

2.2.2 Procedure. Participants had signed up for one of 15 designated times, with all sessions taking place in the same computer lab on the university campus over the span of 4 days. All experimental sessions were randomly assigned a condition (i.e., treatment or control)

accommodating a maximum of 10 participants per session. The run time of complete experimental procedures took no longer than 40 minutes per session.

At the start of each experimental day the researcher set up 11 computers spread out around the lab with Steam (i.e., the computer game application), signed into the Steam accounts and downloaded the computer games, attached headphones to the computers, and displayed the online survey on the computer monitor showing the informed consent form. As participants arrived for their designated times, the researcher asked participants to sign a sheet to receive the incentives, then asked participants to be seated at a computer displaying the informed consent form and instructed them to read it over (See Appendix D for the experimental informed consent).

Participants completed the informed consent form with a required check mark to allow for anonymity. The study participants were told that they were giving feedback on a video game. They were then asked to play one of two randomly selected video games depending on the designated day and time they signed up for. The treatment sessions played *Fran Bow* and the control sessions played *Spy Fox 2: Some Assembly Required*. The treatment group was told, "The character you are playing as is Fran Bow is a young girl with a mental illness. Use the computer mouse to control the movements in the video game, and use the headphones." The control group was told, "The character you are playing as is Spy Fox a secret agent who is solving a mystery. Use the computer mouse to control the movements in the video game, and use the headphones." All participants started game play and ended game play at the same time, playing for a total of 25 minutes. Then participants were asked to fill out an online post-test questionnaire. Both online questionnaires (i.e., treatment and control) contained measures on attitudes toward people with mental illness, empathy toward people with mental illness, narrative engagement, transportation, in-game stereotypes (treatment questionnaire only), and demographic questions. (See Appendix E for complete questionnaires).

Stimulus. Due to the focus group insights and video game availability, the treatment video game selected was *Fran Bow* and the control video game selected was *Spy Fox 2: Some Assembly Required.* (See Appendix C for complete game description).

2.2.3 Measures. All instrument items appear in Appendix F. Each participant completed a post-test questionnaire. Where possible, Cronbach's alpha was computed to assess the internal consistency of the survey items, in addition to factor analysis.

Demographics. Categories measured include age, race/ethnicity, gender, class year, gaming habits, and mental health experience.

Attitudes toward People With Mental Illness. Mental illness stigma researchers from the Mental Health Commission in Canada for the Opening Minds project, launched in 2009, developed a successful set of scales used to measure attitudes toward people with mental illness. The first major task of *Opening Minds* was to develop reliable and valid measures assessing people's attitudes and behavioral intentions toward people with a mental illness before and after exposure to an anti-stigma program. The scales were developed from grassroots anti-stigma programs with home-grown questionnaires already in use and those reported in scientific literature. Three research teams (health care, youth, and workforce) created and strategically tested a number of different assessment measures (see Stuart et al., 2014 for overview). The author consulted with Dr. Andrew Szeto, a researcher for *Opening Minds*, during the process of selecting an attitude scale.

Respondents' attitudes toward people with mental illness were measured using the first 11-items of the 22-item "Youth (12-18) Opinion Survey" developed by the youth *Opening Minds*
research team (Mental Health Commission of Canada [MHCC], 2013). These items measure stereotypic attributions (i.e., controllability of the illness, potential for recovery, and potential for violence and unpredictability). All questions were worded to be accessible to a grade-six reading level. A sample question is, "People with mental illness tend to bring it on themselves." Responses were scored on a Likert-type scale of (1) *strongly disagree* to (7) *strongly agree*. The overall scale demonstrated good reliability ($\alpha = .82$).

Because the attitudes scale is comprised of three themes, as stated above, a factor analysis was appropriate to understand patterns of participant's attitudes-toward-people-with-mentalillness and whether any underlying latent variable could be assessed because the original scale (i.e., 22 items) was shortened (i.e., 11 items). A Principle Components (PC) with a Varimax (orthogonal) rotation converged in 4 iterations which included the 11 items making up the attitudes-toward-people-with-mental-illness scale was conducted on data gathered from (N = 97)participants. This was to see if any specific stereotypic attribution items could be converged into subscales. An examination of the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy suggested that the sample was factorable (KMO = .80), and the Bartlett's Test of Sphericity was significant p < .00. The results of an orthogonal rotation of the solution yielded the 11-items across three components with Eigenvalues higher than 1. Specifically, item 2 had a high factor loading of .87 on the second factor, .17 on the first factor, and .15 on the third factor; item 4 had a high factor loading of .9 on the second factor, .02 on the first factor, and .05 on the third factor suggesting items 2 and 4 are related and were used to create a sub-scale measuring "controllability of the illness." This 2-item subscale was reliable ($\alpha = .79$).

Empathy toward people with mental illness. Because there was no existing standardized scale measuring laypersons' empathy rather than that of a medical professional, a scale

measuring empathy toward people with mental illness was designed by adapting and combining items from an existing 4-item instrument created by McLeod, Deane, and Hogbin (2002) designed to measure a therapists' empathy toward patients who present hallucinations or delusion. This scale appeared easily adaptable by replacing the words "hallucinations or delusion" with "mental illness." A sample question, "I cannot understand what it is like for people who experience mental illness." Responses were recorded on a Likert-type scale of (1) *strongly disagree* to (7) *strongly agree*. The 4-item scale was reliable ($\alpha = .82$).

Transportation. Transportation into the narrative of a video game was measured using Green and Brock's (2000) 12-15-item Transportation Imagery Scale, in which items tap the cognitive, emotional, and mental imagery components of transportation. The scale was adapted to assess video games, removing the vivid imagery question developed to assess print materials, resulting in an 11-item scale. Responses were recorded on a Likert scale of (1) *strongly disagree* to (7) *strongly agree*. For example, originally question 4 stated, "I was mentally involved in the narrative while reading it," and was adapted to, "I was mentally involved in the narrative while playing the game." The 11-item scale was reliable ($\alpha = .72$).

Narrative Engagement. Busselle and Bilandzic's (2009) 12-item Narrative Engagement scale was used to measure participants' narrative engagement with the video game. There are 4 dimensions, with 3 questions measuring each dimension. Internal reliability was reported for the overall narrative engagement scale ($\alpha = .90$). Additionally, sub-dimensions, narrative understanding ($\alpha = .86$.), attentional focus ($\alpha = .95$), narrative presence ($\alpha = .78$), and emotional engagement ($\alpha = .83$) demonstrated good reliability. Responses were recorded on a Likert scale of (1) *strongly disagree* to (7) *strongly agree*. For example, one question measuring emotional engagement read, "During the video game, when a main character succeeded, I felt happy, and

when they suffered in some way, I felt sad."

In-game stereotypes. The researcher contacted clinical psychologist and games researcher Dr. Kelli Dunlap of American University to see if there is a specific criterion used to assess the portrayal of mental illness in a video game narrative. Although this area is largely devoid of literature, she recommended a look to well-established public beliefs about mental illness. As such, to assess participants' perceptions of stereotypes in the video game *Fran Bow*, a 6-item questionnaire was created, drawing from well-established public beliefs about mental illness (e.g., people with mental illness are violent, incompetent, dangerous, to blame for their disorder, untrustworthy, scary) (Corrigan & Watson, 2002; Corrigan, Druss & Perlick, 2014). Participants rated whether the video game included representations of well-established public beliefs (i.e., stereotypes) about people with mental illness on a Likert-type scale of (1) representing *very much so*, to (7) representing *not at all*. The overall scale was reliable ($\alpha = .85$).

A factor analysis was appropriate for this measure to identify the internal structure of the in-game-stereotypes scale because the well-established public beliefs about mental illness were drawn from a range of themes. A Principle Components (PC) with a Varimax (orthogonal) rotation converged in 3 iterations which included the 6 items making up the in-game stereotypes scale was conducted on data gathered from (n = 49) participants. This was to see if any specific stereotypic belief items could be converged into subscales because of the exploratory nature of the experiment and creation of the stereotype scale. An examination of the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy suggested that the sample was factorable (KMO = .71), and the Bartlett's Test of Sphericity was highly significant p < .000. The results of an orthogonal rotation of the solution yielded the 6 items across 2 components with Eigenvalues of component 1 at 3.42 and component 2 at .941. Specifically, item 2 had a high factor loading of .87 on the

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first factor and .15 on the second factor; item 3 had a high factor loading of .82 on the first factor and .29 on the second factor; and item 6 had a high factor loading of .84 on the first factor and .13 on the second factor, suggesting items 2, 3, and 6 are related and were used to create a subscale measuring "behavioral characteristics." This 3-item scale was reliable ($\alpha = .85$).

Specifically, the sub-scale "behavioral characteristics" is conceptually distinct because these three items are provided to understand participants' perceptions of specifically *behavior* (i.e., the way one conducts one's self, especially toward others) rather than perceptions of competence level, blame for one's own disorder, and individuals personal control over their own illness; in which these variables, at face, are more internal (Behavior, n.d.). The variables of trustworthiness, acting scary and dangerous can be attributed to how an individual conducts one's self toward others, more external, as it can be observed by participants during the experiment. Therefore, a meaningful distinction is displayed between the overall "stereotype" scale and "behavioral characteristics" sub-scale.

Chapter 3 Results

Analytic Procedure

To analyze all hypotheses and research questions, the Statistical Package for the Social Sciences (SPSS) Version 22 was used. First, to retain all cases to maximize statistical power, item mean substitution (IMS) method replaced one missing value from the attitudes-toward-people-with mental-illness scale within one case, and one missing value from the transportation scale within one case. Therefore, because the number of respondents with missing items was fewer than 20%, no significant distortion in the data was demonstrated (See Downey & King, 1998). Before testing all of the hypotheses and research questions, descriptive statistics were

computed (Table 1 and Table 2 provide the descriptive statistics for all of the variables used in the analysis).

In addition to running descriptive statistics for the main constructs of interest, an assessment of in-game stereotypes was conducted. A mean assessment demonstrated the treatment video game *Fran Bow* was perceived by participants (n = 49) on the higher-end of the mid-point on the in-game stereotypes scale (M = 4.60, SD = 1.35) with a range of 4.83, indicating the narrative had a low amount of stereotypical messages, and low amount of stereotypical messages about behavioral characteristics of people with mental illness (M = 4.12, SD = 1.72), with a range of 6.00.

Table 1

Descriptive Statistics for Main Variables (treatment group only)

				Range		
Variable	Ν	М	(SD)	Potential	Actual	
Transportation	49	4.12	0.78	1-7	2.27-6.45	
Narrative Engagement	49	4 62	0.98	1-7	2 67-7 00	
Narrative Presence	49	4.10	1.42	1-7	1.00-7.00	
Narrative Understanding	49	4.67	1.43	1-7	1.67-7.00	
Attentional Focus	49	5.60	1.40	1-7	2.00-7.00	
Emotional Engagement	49	4.12	1.42	1-7	1.00-7.00	
Outcomes of Narrative Persuasion						
Attitudes	49	5.38	0.84	1-7	3.55-7.00	
Controllability of Illness	49	6.37	1.19	1-7	1.00-7.00	
Empathy	49	4.02	1.46	1-7	1.50-7.00	
In-Game Stereotypes						
Beliefs	49	4.60	1.35	1-7	2.17-7.00	
Behavioral Characteristics	49	4.12	1.72	1-7	1.00-7.00	

Table 2

Descriptive Statistics for Main Variables (control group only)

				Range	
Variable	Ν	М	(SD)	Potential	Actual
Transportation	/18	3 20	0.66	1_7	1 73_1 73
Transportation	40	5.20	0.00	1-/	1./5-4./5
Narrative Engagement	48	2.99	1.00	1-7	1.08-4.50
Narrative Presence	48	2.83	1.10	1-7	1.00-5.00
Narrative Understanding	48	3.86	1.88	1-7	1.00-7.00
Attentional Focus	48	3.33	1.70	1-7	1.00-7.00
Emotional Engagement	48	1.95	0.91	1-7	1.00-4.00
Outcomes of Narrative Persuasion					
Attitudes	48	5.55	0.75	1-7	4.18-6.91
Controllability of Illness	48	6.50	0.72	1-7	4.00-7.00
Empathy	48	4.41	1.50	1-7	1.50-7.00

Testing the Influence of the Video Games on Message Outcomes

Hypothesis 1a stated that participants who play the video game with representations of mental illness would report higher empathy scores toward people with mental illness than those who played the video game with no mental illness theme. To examine the influence of the experimental conditions an independent samples t-test was conducted to assess the differences in participant's post-test empathy scores toward people with mental illness between the treatment (n = 49) (M = 4.02, SD = 1.46) with a range of 5.50, and control (n = 48) (M = 4.41, SD = 1.50) with a range of 5.50. The analysis indicated that empathy did not differ significantly by experimental condition, t(95) = -1.27, p < .21; H1a is not supported. Overall, results indicate the treatment video game (i.e., *Fran Bow*) alone did not have a significant impact on participant's empathy toward people with mental illness.

Hypothesis 1b stated that participants who play the video game with representations of mental illness would report higher attitude scores toward people with mental illness than those who played the video game with no mental illness theme. To examine the influence of the experimental conditions an independent samples t-tests was conducted to assess the differences in participant's post-test attitude scores toward people with mental illness between the treatment (n = 49) (M = 5.38, SD = 0.84.) with a range of 3.45, and the control (n = 48) (M = 5.55, SD = 0.80) with a range of 2.73. The analysis indicated that attitudes did not differ significantly by experimental condition, t(95) = -1.10, p < .30.

Additionally, another independent samples t-test was conducted to assess the differences in participant's post-test attitudes towards controllability of illness between both the treatment (n= 49) (M = 6.37, SD = 1.19) with a range of 6.00, and control (n = 48) (M = 6.50, SD = 0.72) with a range of 3.00. The analysis indicated that attitudes towards controllability of illness did not differ significantly by experimental condition, t(95) = -.67, p < .51; H1b is not supported. Overall, results indicated the treatment video game alone did not have a significant impact on participants' attitudes toward people with mental illness. (Table 3 provides H1a and H1b results). Table 3

Treatment					Contro	ol			959	95% CI		
Variable	n	М	SD	n	М	SD	<i>t</i> (95)	p	LL	U		
Empathy Attitudes Control	49 49 49	4.02 5.38 6.37	1.46 0.84 1.19	48 48 48	4.41 5.55 6.50	1.50 0.80 0.72	-1.27 -1.10 -0.67	.21 .30 .51	-0.98 -0.49 -0.53	0.26 0.15 0.26		

Independent Samples t-test for the Influence of the Video Games on Message Outcomes

Note: Control = controllability of illness; CI = confidence interval; LL = lower limit; UL = upper limit.

Testing the Influence of Media User Characteristics on Narrative Involvement and

Message Outcomes

Research question 1a asked whether participant's characteristics influenced their empathy and attitudes toward people with mental illness. To explore this research question, demographic difference variables were analyzed among the treatment group on message outcome variables of interest. To assess gender, an independent samples t-test was conducted to look at whether males (n = 21) and females (n = 26) expressed different levels of empathy and attitudes towards people with mental illness and attitudes towards controllability of illness. Results indicated females (M = 4.42, SD = 1.63) significantly expressed more empathy than males (M = 3.50, SD = 1.12), with a medium magnitude of difference between the means, t(45) = -2.22, p < .03, $\eta^2 = .10$. Therefore, in general female participants expressed more empathy toward people with mental illness than did males. (Table 4 provides independent samples t-test results). Next, to control for participants' experience with mental illness the variable groups were coded as dummy variables, with "1" as "yes" and "0" as "no." Within "yes," participants selected whether they themselves, a family member, and/or a friend had a mental illness. First, a one-way ANOVA was conducted to assess whether experience with mental illness had an influence on message outcomes (i.e., empathy and attitudes toward people with mental illness). Results demonstrated a significant effect between those who have experience with mental illness (n = 23) (M = 4.63, SD = 1.70), showing higher scores of empathy toward people with mental illness than did those who have no experience (n = 26) (M = 3.46, SD = 0.96), with a large magnitude of differences between the means, f(48,1) = 8.55, p < .01, $\eta^2 = .16$. Therefore, mental health experience significantly influenced empathy toward people with mental illness. (Table 5 provides one-way ANOVA results for mental health experience on empathy).

To further explore the sub-categories of mental health experience, another one-way ANOVA was conducted. A significant effect was demonstrated for participants who were personally diagnosed with a mental illness (n = 8) reporting higher empathy scores toward people with mental illness (M = 5.52, SD = 0.93) than participants who have never been diagnosed with a mental illness (n = 21) (M = 4.04, SD = 1.71); results indicated a large magnitude of differences between the means, f(28,1) = 5.34, p < .03), $\eta^2 = .18$. As such, those who personally experience mental illness reported a higher empathic response toward people with mental illness. (Table 6 provides one-way ANOVA results for self with mental illness on empathy).

Research question 1b asked whether the media users characteristics influenced their involvement in the video game narrative. To assess this research question, demographic difference variables were analyzed among the treatment group on narrative involvement variables of interest. Specifically, to control for participants' habits of playing video games, categorical differences were assessed against levels of narrative involvement. First, a one-way ANOVA was conducted and a significant effect between groups was demonstrated for the subscale emotional engagement with a large magnitude of differences between the means, f(36,4) = 3.25, p < .02, $\eta^2 = .29$. A post hoc Tukey HSD test showed serious gamers (i.e., category 5) (n = 3) reported significantly higher emotional engagement scores (M = 6.22, SD = 0.51) than those in category "4" (n = 3) (M = 3.33, SD = 2.03), p < .04; in category "2" (n = 4) (M = 3.58, SD = 0.88), p < .48; and casual gamers (n = 24) (i.e., category 1) (M = 3.82, SD = 1.15), p < .19. Overall, those who identified themselves as serious game players were more emotionally engaged in the narrative. (Table 7 provides post hoc Tukey HSD results for video game habits and the sub-scale emotional engagement).

Table 4

		Male]	Female	% CI					
Variable	n	М	SD	n	М	SD	t(45)	р	LL	U	Eta Squared
Empathy	21	3.50	1.12	26	4.42	1.63	-2.22	.03	-1.77	-0.09	0.01
Note: $CI = confidence interval; LL = lower limit; UL = upper limit.$											

Independent Samples t-test for Gender on Empathy (treatment group only)

One-Way ANOVA Results for Mental Health Experience on Empathy (treatment group only)

	MHE Yes MHE No						95% CI							
Variable	n	М	SD	n	М	SD	<i>F</i> (48,1)	р	LL	U	Eta Squared			
Empathy	23	4.63	1.70	26	3.46	0.96	8.55	.01	3.60	4.44	.16			
Note: MH limit.	E = r	nental	health	experi	ence;	CI = con	nfidence inte	erval; <i>L</i>	L = lower	r limit; U	<i>L</i> = upper			

Table 6

One-Way ANOVA Results for Self with Mental Illness on Empathy (treatment group only)

	Self Yes Self No							95	% CI		
Variable	n	М	SD	n	М	SD	<i>F</i> (28,1)	р	LL	U	Eta Squared
Empathy	8	5.52	0.93	21	4.04	1.71	5.34	.03	3.81	5.08	0.18
Note: Self limit.	= se	elf with	menta	al illne	ess; CI	= cont	fidence interv	al; LL	= lower l	imit; UL	= upper

Table 7

Means and Standard Deviations for Video Game Habits on Emotional Engagement

		Categories: Video Gar	me Habits	
Variable	"Casual" "1" (<i>n</i> = 24)	"2" (<i>n</i> = 4)	"4" (<i>n</i> = 3)	"Serious" "5" (<i>n</i> = 3)
EE*	3.82 (1.15) _b	3.58 (0.88) _b	3.33 (2.03) _b	6.22 (0.51) <u>a</u>

Note: EE = emotional engagement.

*Means with different subscripts differ significantly at p < .05 by the Tukey HSD for the one-way ANOVAs.

Testing the Influence of Narrative Involvement on Message Outcomes

Transportation

Research question 2a asked what the relationship between participant's level of transportation and their attitudes and empathy toward people with mental illness was. First, a two-tail Person correlation test between transportation and attitudes showed the relationship was not statistically significant (r = -.00, n = 49, p = .98). Additionally, a two-tail Pearson correlation between transportation and the subscale "controllability of illness" was conducted, demonstrating no significant results (r = .05, n = 49, p = .71). Third, a two-tail Person correlation test between transportation and empathy showed the relationship was not statistically significant (r = .12, n = 49, p = .17). Therefore, player's level of transportation was not significantly related to message outcome scores.

Narrative Engagement

Research question 2b asked whether participant's level of narrative engagement and their attitudes and empathy toward people with mental illness was correlated. First, a two-tailed Pearson's correlation between narrative engagement and attitudes showed the relationship was not significant (r = -.02, n = 49, p = .83). Additionally, a two-tail Pearson correlation between narrative engagement and the subscale "controllability of illness" was conducted, demonstrating no significant results (r = -.07, n = 49, p = .62). Third, a two-tail Pearson's correlation between narrative engagement and empathy showed the relationship was not significant (r = -.03, n = 49, p = .83). Therefore, the level of player's narrative engagement was not significantly related to message outcome scores.

Next, narrative engagement subscales were all assessed with a two-tail Person correlation in relation to empathy, attitudes, and controllability of illness. Narrative understanding was not significantly related to empathy (r = .08, n = 49, p = .60), or attitudes (r = .04, n = 49, p = .78), or controllability of illness (r = .06, n = 49, p = .67). Attentional focus was not significantly related to empathy (r = .11, n = 49, p = .44) or attitudes (r = .20, n = 49, p = .16) but it was significantly related to controllability of illness (r = .28, n = 49, p = .05). Narrative presence was not significantly related to empathy (r = .01, n = 49, p = .93) attitudes (r = .10, n = 49, p = .48) or controllability of illness (r = .22, n = 49, p = .14). Last, emotional engagement was not significantly related to empathy (r = .07, n = 49, p = .64) attitudes (r = .12, n = 49, p = .43), or controllability of illness (r = -.20, n = 49, p = .17). Overall, the sub-scale results indicated that when participants reported higher attentional focus with the video game narrative they had higher attitude scores toward people's ability to control their mental illness, and when participants reported lower attentional focus they had more negative attitudes toward people's ability to control their mental illness, and when variables of interest).

Table 8

Correlations for All Dependent Variables of Interest (treatment group only)

Variables	1	2	3	4	5	6	7	8	9
1.Transportation	_								
2. Narrative Engagement	0.75**	-							
3. Narrative Understanding	0.37**	0.76**	-						
4. Attentional Focus	0.53**	0.68**	0.56**	* _					
5. Narrative Presence	0.58**	0.63**	0.26	0.07	-				
6. Emotional Engagement	0.62**	0.72**	0.31*	0.28	0.42*	* _			
7. Empathy	-0.20	-0.03	0.08	-0.11	-0.01	-0.07	-		
8. Attitudes	-0.00	-0.02	-0.04	2.03	-0.10	-0.12	0.37**	* _	
9. Controllability of Illness	0.05	-0.04	0.09	0.28*	-0.22	-0.20	0.08	0.64**	-

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

Testing the Influence of Narrative Involvement on Story-Consistent Beliefs

Research question 3 asked if levels of participant's narrative involvement influences player's perceptions of in-game stereotypes. Participants' (n = 49) perceptions about whether the treatment video game had stereotypical messages were assessed in terms of the mean scores on the main variables of interest. The interval data for both "in-game stereotypes" and the sub-scale "behavioral characteristics" were split using the mean score, and recoded into categorical variables of above (i.e., any score greater or equal to the mean), indicating "low amount," and below (i.e., any score below the mean), indicating "high amount" of in-game stereotypes and behavioral characteristic stereotypes.

First, an independent samples t-test was conducted to assess perceptions of in-game stereotypes on narrative involvement variables. Results indicated that participants (n = 21) who viewed the video game as having an overall low amount of in-game stereotypes were significantly more narratively engaged (M = 5.04, SD = 0.72) than were participants (n = 28) who perceived the game to hold a higher amount of in-game stereotypes (M = 4.30, SD = 1.1); with a large magnitude of effect sizes between group means, t(46.72) = -2.92, p < .01, $\eta^2 = 0.15$. Levene's test for equality assumed unequal variances (F = 4.49, p < .04), so degrees of freedom were adjusted from 47 to 46.72.

Additionally, participants who viewed the video game as having an overall low amount of in-game stereotypes had significantly more narrative understanding (M = 5.33, SD = 1.29) than did those who perceived the game to hold a higher amount of in-game stereotypes (M =4.18, SD = 5.32); with a large magnitude of effect sizes between group means, t(47) = -2.98, p <.01, $\eta^2 = .15$. Last, participants who viewed the video game as having an overall low amount of ingame stereotypes reported significantly more narrative presence (M = 4.59, SD = 1.14) than did those who perceived the game to hold a higher amount of in-game stereotypes (M = 3.74, SD =1.52); with a large magnitude of effect sizes between group means, t(47) = -2.14, p < .04, $\eta^2 =$.16. Overall, these results indicated that when participants were more engaged in the narrative, had higher narrative understanding and were more present in the narrative, they perceived the video game to hold fewer in-game stereotypes. (Table 9 displays the results of the independent samples t-tests for in-game stereotypes on narrative involvement variables of interest).

Table 9

Inde	ependen	t Samples	t-test Res	ults for	Perceptions	of	In-game	Stereotypes
	1	1		5	1		0	~1

	Low High						95% CI					
Variable	n	М	SD	n	М	SD	t	df	р	LL	U	Eta Squared
		4	0.50	•	4.00	1.10	2.02			4.2.4	4.00	1.5
NE	21	5.04	0.72	28	4.30	1.10	-2.92	46.72	.01	4.34	4.90	.15
NU	21	5.33	1.29	28	4.18	5.32	-2.98	47	.01	4.26	5.08	.15
NP	21	4.59	0.14	28	3.74	1.52	-2.14	47	.04	3.69	4.51	.16

Note: Low = low amount of in-game stereotypes; High = high amount of in-game stereotypes; NE = narrative engagement; NU = narrative understanding; NP = narrative presence; CI = confidence interval; LL = lower limit; UL = upper limit.

Second, another independent samples t-test was conducted to assess the sub-scale "behavioral characteristics" on narrative involvement variables of interest. Results indicated that participants (n = 20) who viewed the video game as having a low amount of behavioral characteristic stereotypes were significantly more narratively engaged (M = 5.1, SD = 0.71) than were those (n = 29) who perceived the game to hold a higher amount of behavioral characteristic stereotypes (M = 4.3, SD = 1.02), with a large magnitude of effect size between the group means, t(47) = -3.03, p < .00, $\eta^2 = .17$; they also reported significantly more narrative presence (M = 4.65, SD = 1.13) than did the others (M = 3.72, SD = 1.5), with a medium magnitude of effect size between the group means, t(47) = -2.34, p < .02, $\eta^2 = .10$; they also reported significantly more narrative understanding (M = 5.22, SD = 1.26) than did the others (M = 4.29, SD = 1.43), with a medium magnitude of effect size between the group means, t(47) = -2.34, p < .02, $\eta^2 =$.10; last, they also reported significantly more emotional engagement (M = 4.83, SD = 1.13) than did the others (M = 3.62, SD = 1.40), with a large magnitude of effect size between the group means, t(47) = -3.22, p < .00, $\eta^2 = .18$. Overall, these results indicated that when participants were more engaged in the narrative, were more present in the narrative, had higher narrative understanding, and were more emotionally engaged, they perceived the video game to have a low amount of behavioral characteristic stereotypes. (Table 10 displays the results of the independent samples t-tests for behavioral characteristic stereotypes on main variables of interest).

Table 10

Independent	Samples t-t	est Results o	f Behavioral	Characteristic	Stereotypes
1	1	•			

	Low High						95% CI					
Variable	n	М	SD	n	М	SD	t	df	D	LL	 U	Eta Squared
									1			1
NE	20	5.10	0.71	29	4.30	1.02	-3.03	47	.00	4.34	4.90	.17
NU	20	5.22	1.26	29	4.29	1.43	-2.34	47	.02	4.26	5.08	.10
NP	20	4.56	1.13	29	3.71	1.50	-2.34	47	.02	3.69	4.51	.10
EE	20	4.83	1.13	29	3.62	1.40	-3.22	47	.00	3.71	4.52	.18

Note: Low = low amount of behavioral characteristic stereotypes; High = high amount of behavioral characteristic stereotypes; NE = narrative engagement; NU = narrative understanding; NP = narrative presence; EE = emotional engagement; CI = confidence interval; LL = lower limit; UL = upper limit.

Chapter 4 Discussion

The goal of this exploratory experimental study was to move beyond traditional media and expand on narrative persuasion research in the context of video games for prosocial ends. The main objective was to explore how players became involved with narratives influencing their empathy and attitudes toward people with mental illness. As such, there was hope of reducing public stigma in the college student population, because stigma is a factor influencing quality of life. Additionally, this exploration warranted a further examination of a video game with representations of mental illness to understand what may foster or hinder the effectiveness of the EE strategy in a gaming context. Specifically because video games hold certain properties (i.e., narrative, interactivity, multimodality, social interaction, and immersion) as elements that can foster prosocial outcomes, it was essential to understand players' experience and processing of the EE messages in a video game narrative by looking at levels of players involvement in the video game narrative (i.e., transportation, narrative engagement); player's (i.e., media user's) individual characteristics (i.e., gender, mental health experience, video game habits); and players' level of narrative involvements influence on story-consistent beliefs (i.e., in-game stereotypes).

College students were purposely assessed because video games are a popular form of entertainment among the college student population, and many college students find themselves experiencing mental health issues (ACHA, 2015; Duggan, 2015). Participants were randomly assigned to play either the treatment video game *Fran Bow* (i.e., featuring mental illness messages) or the control video game *Spy Fox 2: Some Assembly Required* (i.e., without mental illness messages). After playing the game, a post-test questionnaire first asked participants to comment on their demographic differences, mental health experience, and video game habits.

Next, they were asked to answer questions on their perceptions of people with mental illness (i.e., empathy and attitudes), their involvement with the video game narrative (i.e., transportation and narrative engagement), and the treatment group only answered additional questions on perceptions of in-game stereotypes.

Two hypotheses were examined looking at the differences between the experimental conditions message outcome scores to understand whether the EE game fostered prosocial outcomes. Additionally, five research questions were tested to look at what might foster or hinder narrative persuasion and subsequent message outcomes. Although, H1a and H1b were not supported, the following discusses the unique contributions of this exploration. First, this section discusses the individual hypotheses and differences between groups on the message outcome variables of interest. Next, the research questions are discussed as a guide to offer further implications regarding the topics of media user characteristics, narrative involvement, and story-consistent beliefs. Last, future directions and limitations are considered.

Testing the Influence of the Video Games on Message Outcomes

Both hypotheses assessed the outcomes of narrative persuasion. The experimental conditions empathy and attitudes scores did not significantly differ after game play. These results suggest that the treatment video game (i.e., *Fran Bow*) did not have an impact on participants' perceptions of empathy and attitudes toward people with mental illness.

First, hypothesis 1a assessed empathy as a message outcome variable. Empathy is a powerful emotion, and when experienced can cerate more positive responses (i.e., attitudes) towards groups affected by public stigma (Batson et al., 1997; Batson et al., 2002). It is important to note, a significant positive relationship was demonstrated between empathy and attitudes.

H1a predicted that participants who play a video game with representations of mental illness would score higher on the empathy toward people with mental illness scale than those who played the control video game. Results indicated that even when participants played the video game with the mental illness theme their empathy scores were not significantly influenced.

Although past research has examined video games' ability to significantly inspire prosocial helping behavior (Greitemeyer, Osswald & Brauer, 2010; Prot et al., 2014), and has demonstrated that literature can transport individuals into fictional worlds where they positively increased their empathy, social understanding, and engagement in prosocial behavior (Bal & Veltkamp, 2013; Johnson, 2012), the results of this current research do not support past findings. Two possible explanations are that past research with video games looked specifically at helping behavior and, second, other studies focused on non-mediated (i.e., books) and passive auditory media, which may be more user-friendly to participants. As Klimmt (2009) argues, a high level of participation in the game creates an increased self-related connection between the players and game events, as players perceive themselves as the center of events. The relevance of the game to players is contingent on the results of their own actions through planning, decision making, and personally witnessing cause-and-effect relationships, which increase the likelihood of learning and knowledge application (Baranowski, et al., 2008; Klimmt, 2009). Additionally, because empathy was not significantly increased in the gaming context, these results could suggest participants on average held a high level of empathy prior to the experiment, hindering movement on the empathy scale.

Second, hypothesis 1b assessed attitudes as a message outcome variable. Video games have been known to facilitate individual cognition and behavior change (e.g., attitudes, knowledge, motivation) towards a specific interest (Klimmt, 2009). Past research has demonstrated that video games can positively influence attitudes (Alhabash & Wise, 2014; Chu et al., 2015; Lee, Kim & Kim, 2015). Specifically, because of their unique properties that encourage narrative involvement, there was reason to believe that as with traditional media (e.g., television), games can foster EE.

H1b therefore predicted that participants who play a video game with representations of mental illness would score higher on the attitudes toward people with mental illness scale than those who played the control video game. Results indicated that even when participants played the video game with the mental illness theme their attitude scores were not significantly influenced. Additionally, participants' attitudes toward "controllability of illness" were assessed; the treatment group's scores did not significantly differ from the control group's scores. These results could suggest participants on average held a high level of positive attitudes prior to the experiment, implying the treatment game's inability to influence scores. Because of the exploratory nature of this study and the seemingly nonexistent research on the influence of video games with the theme of mental illness to inspire prosocial message outcomes (i.e., empathy and attitudes toward people with mental illness), more research is needed.

Testing the Influence of Media User Characteristics on Narrative Involvement and Message Outcomes

To understand what could be responsible for fostering or hindering narrative persuasion, specifically with a video game that holds the theme of mental illness, research questions were assessed to understand how concepts might be related to one another.

Research question 1a asked whether participants' characteristics influenced their empathy and attitudes toward people with mental illness. First, a significant difference in the mean scores suggests females reported more empathy toward people with mental illness than did males. Because the video game did not significantly influence results, this finding generally expands on empathy research in the direction of gender differences.

Second, another finding among the treatment group indicated that mental health experience significantly influenced higher feelings of empathy toward people with mental illness. Specifically, those who were personally diagnosed with mental illness reported significantly higher empathy scores. Although these findings may seem rather obvious on the account that empathy is conceptualized as "a feeling that one understands and shares another person's experiences and emotions," and because the character in the video game had a mental illness, these results positively influence the validity of the *empathy* scale. These results suggest that it may not be the EE messages and contact with the character in the game that produced empathy; rather, it may be the previous experience with the health topic that influenced results.

Research question 1b asked whether players' characteristics influenced their level of involvement in the video game narrative. Participants' video game habits were categorically assessed among the treatment group and results indicated that those who identified themselves as serious video game players reported becoming significantly more emotionally engaged in the video game narrative when playing, than did casual players. One implication is that serious game players may be spending less time on the mechanical aspects of controlling and learning how to play the video game. Therefore, habits of the video game players can influence involvement in the narrative, especially with interactive-media that demand some sort of ability to personally influence the outcome of narrative events, as opposed to passive forms of media (e.g., watching television). Overall, these results imply that the characteristics of the media user can influence the achievement of prosocial outcomes.

An additional observation related to the characteristics of the participants is that nearly half the sample, on average, played zero hours of video games per week, were casual gamers, and were relatively beginners at playing computer games. Therefore, participants may have been more focused on and exerted more effort and energy into figuring out how to play the video games as opposed to other forms of media previously examined (i.e., books and listening device); hindering their level of narrative involvement with the video game. Critically, the degree (i.e., extent to which the player was able to change and influence the progression of events) and nature (e.g., point and click video game) of interactivity may have influenced the likelihood of prosocial outcomes.

Testing the Influence of Narrative Involvement on Message Outcomes

This experiment aimed to enhance the study of narrative persuasion in hopes of increasing the effectiveness of the EE strategy in a gaming context. Therefore, it was essential to understand the processes of involvement in a video game narrative when players were transported, narratively engaged, and emotionally engaged in a video game featuring prosocial messages of mental illness and whether the relationships between variables of interest exist. Two research questions were assessed (i.e., RQ2a, RQ2b).

Transportation. A large amount of narrative persuasion research focuses on passive media (e.g., television, film). Only recently have researchers begun focusing more attention on the interactive world of gaming. Past research has suggested that when transported into a video game there is likelihood of emotional influence (Brookes, Moyer-Gusé, & Mahood, 2011); and it has been additionally demonstrated that transportation could influence a high level of emotional investment. Additionally, a considerable amount of experimental evidence indicates that when individuals experience transportation from the "real" world into a "fictional" narrative world,

their attitudes can be influenced because they are wrapped up in the storyline (Green & Brock, 2000; Murphy et al., 2011)

RQ2a asked whether there was a relationship between players' levels of transportation in the video game narrative and the message outcomes. First, the relationship between transportation and empathy was not significant. These results indicate that even when participants reported being transported into the video game narrative their empathy toward people with mental illness was not significantly influenced. Second, the relationship between transportation and attitudes was not significant, indicating that even when participants reported being transported into the video game narrative their attitudes toward people with mental illness were not significantly influenced. Previous research is mostly void of addressing the relationship between transportation and prosocial message outcomes in a video game context. Therefore, more research is needed.

Narrative Engagement. RQ2b asked whether there was a relationship between players' levels of narrative engagement in the video game narrative and the message outcomes. First, the relationship between narrative engagement and empathy was not statistically significant. These results indicated that even when participants reported engagement in the video game narrative their empathy toward people with mental illness was not significantly influenced. Additionally, there was a surprising finding regarding the sub-scale of the narrative engagement construct: Emotional engagement that describes emotions and feelings with the story characters (i.e., sympathy and empathy) was not significantly correlated with the empathy scale, which suggests the two scales may have been measuring different constructs. For instance, the emotional engagement sub-scale asked about the characters in the video game, and the empathy scale asked about people with mental illness in general. Brown and Cairns (2004) stated if players lack

empathy they will not feel totally immersed in the story world. The results of this study suggest that even when the players were immersed, their empathy was not significantly influenced; therefore, as suggested earlier, players may have already held a high level of empathy prior to the experiment.

Busselle and Bilandizic (2009) also suggested that when participants report being more engaged in a narrative they also have reported stronger story-consistent beliefs and attitudes (Green & Brock, 2000; Green, 2004; Slater, 2002). Nontheless, the relationship between narrative engagement and attitudes in this research was not significant, although the sub-scale of the narrative engagement construct "attentional focus" and the sub-scale of attitudes "controllability of illness" were significantly positively related. Although, Type I error cannot be ruled out, this result suggests that those who reported being more attentionally focused (i.e., lack of distraction by thoughts unrelated to the narrative) with the video game narrative had higher attitude scores toward people's ability to control their mental illness, and when participants reported lower attentional focus they had lower attitude scores toward people's ability to control their mental illness. This result suggests that when video game narratives encompass and capture players' undivided attention, they play as if they are actually part of the game environment; they are experiencing *immersion* (i.e., becoming involved literally and emotionally in the story) (Baranowski et al., 2008, p. 6) and therefore influence their attitudes.

Regarding the overall narrative engagement construct and the other three subscales (i.e., narrative understanding, narrative presence, and emotional engagement), there was no significant relationship expressed with attitudes. Again, because of the exploratory nature of this study and the seemingly nonexistent research on the relationship between narrative engagement and attitudes and empathy in the context of video games, more research is needed.

Testing the Influence of Narrative Involvement on Story-Consistent Beliefs

Because the treatment and control groups did not differ on empathy and attitude scores, participants' perceptions on whether the treatment video game held stereotypical messages were assessed in terms of the mean scores on the narrative involvement variables of interest. Specifically this analysis was to understand how players perceived the messages in the video games and whether their levels of narrative involvement influenced these results.

Research question 3 assessed whether participants' levels of narrative involvement influenced perceptions of in-game stereotypes. First, these results indicated that when participants were more engaged in the narrative, had higher narrative understanding and were more present in the narrative, they perceived the video game to hold fewer in-game stereotypes. Second, additional results indicated that when participants were more engaged in the narrative, were more present in the narrative, had higher narrative understanding, and were more emotionally engaged, they perceived the video game to have a low amount of behavioral characteristic stereotypes.

These results imply that when participants were more involved in the narrative they were able to look past the connotation of the video game genre (i.e., psychological horror) and process the story messages differently than did participants who were less involved in the narrative. Just as Green and Brock (2000) have suggested, individuals who are more engrossed in the narrative tend to form stronger narrative-consistent beliefs, attitudes, and intentions than those who are not. Equally plausible, it may have been the genre of the video game *Fran Bow* that hindered narrative involvement (i.e., psychological horror). And, as suggested earlier, college students may already hold levels of empathy and attitudes that were sufficiently high to be resistant to increase despite the experimental procedures. Finally, the constructed scale measuring in-game

stereotypes demonstrated reliability and validity, and therefore is deemed an acceptable assessment of perceptions of stereotypes about people with mental illness.

4.1 Future Directions

Future research should continue to explore using video game narratives for prosocial means. Although *Fran Bow* did not influence participants' attitudes and empathy toward people with mental illness, this study advances our understanding of how video game narratives are experienced and processed. This study gives game and message designers a way to best engage characteristically diverse individuals with entertaining games and storylines to potentially inspire prosocial change.

While previous research has a wealth of information on the positive influence of entertainment storylines to inspire prosocial change with television, radio, and film messages, there needs to be more research on narrative persuasion with interactive forms of media. Given how the video game *Fran Bow* itself did not significantly alter prosocial outcomes regardless of the influences of the media users characteristics and levels of involvement of the narrative experienced by participants, it is then first important to understand what fosters and hinders the involvement in the video game narrative. This leads to the question of what, exactly, causes a narrative to be persuasive and foster EE message outcomes in a gaming context?

With this in mind, future research should look deeper into what causes players to become involved in the narrative from a mechanical level, because this study did demonstrate that video game habits influenced involvement. Eastin (2013) states interaction of media form (e.g., screen size, amount of interactivity), media content (e.g., violent video games), and characteristics of the individual media user (e.g., game skill) can influence the achievement of presence. Therefore, variables assessing video game experience and skill may increase understanding of

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involvement. In addition, when individuals start to play a video game, as opposed to passive forms of media they instinctively may be more focused on how to play, rather than immersing themselves in the video game narrative right away. Research should then first focus on timing of play and whether participants over time become more involved in the narrative, therefore, longitudinal studies may demonstrate more inspiring results. Another suggestion is to allow participants time to become comfortable with and understand the controls of the game, which may influence narrative involvement. Additionally, other forms of interactive media should be assessed. For instance, mobile application games may be more user-friendly to a larger number of individuals because of their accessibility and design capabilities. Overall, understanding players' gaming experience and skill, how difficult and challenging players perceived the game to be, whether time to learn the basic controls of the game, the length of game play, and the media format should be assessed as variables that may hinder and foster narrative involvement.

The commercial video game *Fran Bow*, in this experiment, did not reduce public stigma toward people with mental illness among the college student population through education and contact. Because the findings of this study challenge previous literature on reducing public stigma more research is needed. Briefly, because of the nature of many video games with the theme of mental illness are stigmatizing in themselves (e.g., *Outlast, The Evil Within, Amnesia*), and to the author's knowledge only four videogames (i.e., *Fran Bow, Elude, Actual Sunlight, Town of Light*) hold few in-game stereotypes of people with mental illness, research assessing other genres and games is warranted. In addition, assessing different populations is also crucial because certain groups of individuals may already hold relatively high levels of empathy and positive attitudes toward people with mental illness. Another area of research could look at

games with stereotypes and whether they decrease empathy and create more negative attitudes toward people with mental illness.

Last, this exploration utilized EE messages on a specific health topic (i.e., mental illness). Research investigating the role of narrative involvement and different prosocial outcomes, video game players, and other health topics with stigmatized groups would be beneficial to add to the current literature. In addition, there should be future research around public stigma awareness and ways to combat the stereotypes associated with people with mental illness, especially among the general population. The more known about how to battle public stigma, the better off the world will be.

4.2 Limitations

This experimental study is not without limitations. First, a nonrandom convenience sample was used, and recruitment efforts involved coordination with just five instructors from a small university on the East Coast of the United States. Therefore, results may not be generalized back to the population of interest, all university students. The sample size was small, lowering the statistical power, indicating Type II Error cannot be ruled out. The sample was not demographically diverse; it was largely White, nearly 60% female, and nearly 50% college seniors. Also, the nature of this research was to assess video game play, but almost half of the participants reported playing zero hours of games per 7-day week. Additionally, when it came to demographic differences, mental health experience, and video game habits, groups were not assessed with an even number of diverse participants, which may be due to the small sample size; indicating Type I Error cannot be ruled out.

Second, because of the limited availability of a video game that depicted a character with mental illness and gave fewer stereotypical messages about mental illness, the decision on which game to utilize in the research was grounded in reliance on a focus group and by comparing the game to the others available. As such, the video game *Fran Bow* was chosen. Because the video game did not influence empathy and attitudes toward people with mental illness, even when participants perceived the game to have a low number of in-game stereotypes, it is noted that the video game itself was a limitation. Specifically, the video game genre was classified as "psychological horror," indicating some participants may have been put off by the nature of the video game. In addition, the video game features five distinct chapters of game play, although participants only played chapter 1. Because length of game play is a limitation, it would be interesting to have the players play all five chapters, allowing more time for them to become involved in the narrative. The video game also featured a young female as the main playable character, which may have hindered involvement with the narrative, regarding identification, liking, and similarity. Overall, the results are limited to the video game *Fran Bow*, and therefore not generalizable.

Third, the nature of the post-test only experiment may have influenced results. The posttest only design was to limit procedure time and participant survey burnout, sacrificing the knowledge of participants' empathy and attitudes scores prior to the experimental procedures. Then the video game theme surrounded the health topic mental illness. This topic may have been considered sensitive, and participant's results could have been influenced by social desirability to respond positively toward groups that are stigmatized against. Additionally, external validity was threatened with the location of the experiment. Participants played a video game in a university computer lab, and were also receiving extra class credit for their participation. Participants may have viewed the experiment as more educational and less for entertainment purposes; as opposed to engaging the game if they were playing it at home or in a living room-type setting.

4.3 Conclusion

To summarize, the purpose of this study was to move beyond traditional media and expand on narrative persuasion research in the context of video games for prosocial ends. The main objective was to explore players' experience with the video game *Fran Bow* with hopes that this game could influence empathy and attitudes toward people with mental illness, ultimately reducing public stigma in the college student population. Although the video game did not alter prosocial message outcomes, further examination of the video game was conducted to understand what may foster or hinder the effectiveness of the EE strategy in a gaming context.

This study suggests that although video game narratives may present opportunities for EE, individuals already have pre-programed characteristics that may influence their narrative involvement (e.g., video game habits). Next, even when players' reported experiencing transportation or narrative engagement, their empathy levels and attitudes were not altered, but the results still enhance our knowledge of narrative persuasion in the context of video games. The public stigma of mental illness is a growing concern among the general population and can have dramatic effects on the lives of those who live with mental illness. Because of this, the experiment addressed both education and contact as the two antistigma approaches. Specifically, previous research has suggested interactive media can influence prosocial outcomes because of their unique properties. An important finding was that those who reported more narrative involvement did report more story-consistent beliefs of in-game stereotypes, therefore suggesting video games are able to influence perceptions through narrative involvement. Taken together, these results indicate that when evaluating an EE video game and the relationship between of narrative involvement variables and prosocial outcomes, individual characteristics (e.g., skill) of

the media user can foster or hinder involvement. In turn, this involvement can produce in-game story-consistent beliefs.

This research advocates for entertainment education scholars and game and message designers to continue to work with video games as an interactive mediated outlet to influence prosocial outcomes. This study has offered insights that shed light on the topic that should be studied in more depth. It will be essential to advance communication knowledge in this area because it may lead to a better understanding of how narratives and messages of mental illness impact public stigma. With more research, EE messages and contact through video game characters may be important ways to influence individuals' perceptions of groups that are stigmatized. Furthermore, this can lead to an area of stigmatization research that can be applied to design successful EE video games with the specific purpose of public stigma reduction

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Appendices

Appendix A: Focus Group Informed Consent

INFORMED CONSENT (Treatment Group)

Investigator: Kristy M. Najarian Bryant University Knajarian@Bryant.edu

Video Games

YOU MUST BE 18 OR OLDER TO PARTICIPATE IN THIS STUDY. <u>IF YOU ARE NOT</u> 18, STOP IMMEDIATELY AND DO NOT ANSWER THE QUESTIONS ON THIS <u>SURVEY</u>

1. Introduction: You are being asked to participate in a research study. This consent form provides information about the study. If you agree to participate in the study, you will be asked to indicate "yes" or "no" with a check mark. This process is known as informed consent.

2. Statement of Purpose: You are invited to participate in an experiment assessing your views on playing a video game. We hope to learn your thoughts on the video game design and about your experience playing the video game. You were selected as a possible participant in this study because you are a Bryant University student, and we are looking specifically at college student's perceptions of the video game.

3. Experiment Procedures: If you decide to participate, we will ask you to play a video game for a total of 25 minutes. Next, you will complete a questionnaire following these steps: You will be asked to complete questions about yourself and your video game habits. Then you will answer questions about your experience playing the video game, and questions about the video game design. The purpose of the questions is to understand college student's thoughts on the video game. These questions should take no longer than 10 minutes to complete.

After, as a group we will discuss your thoughts on the experimental procedure and the video game for approximately 25 minutes.

<u>Risks</u>: In order to protect your privacy, no questionnaire will ask for your name or any other identifying information. In addition, brief personal questions will be asked about you, your family, and friend's mental health status. Last, the video game is classified as a "creepy psychological horror adventure game" which may cause emotional responses.

<u>Benefits</u>: There are no direct benefits to you for participating in this project. However, as students you may find it enjoyable to contribute to a video game research study in the social sciences, and you will get to see first hand how a research study is conducted.

4. Confidentiality: Any information obtained in connection with this study will remain confidential and will not be disclosed to the general public in a way that can be traced to you. In

any written reports or publications, no participant other than the researchers will be identified, and only anonymous data will be presented.

5. Compensation: You will receive \$5 or extra credit for your time and effort.

6. Statement that Participation Is Voluntary: Your participation is totally voluntary, and your decision whether or not to participate will not affect your future relations with Bryant University or its employees in any way. If you decide to participate, you are also free to discontinue participation at any time without affecting such relationships and still receive the compensation.

7. Persons to Contact: If you have any questions, please contact Kristy Najarian, knajarian@bryant.edu. If you have any additional questions later, I will be happy to answer them.

8. Signature Indicating Informed Consent: Please indicate below if you have decided to participate. Your checkmark indicates only that you are at least 18 years of age and have read the information provided above. Your checkmark does not obligate you to participate, and you may withdraw from the study at any time without consequences.

Do you agree to participate in this study? * □Agree □Disagree

INFORMED CONSENT (Control Group)

Investigator: Kristy M. Najarian Bryant University Knajarian@Bryant.edu

Video Games

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Do you agree to participate in this study? * □Agree □Disagree

Appendix B: Facilitator's Guide

FACILITATOR'S GUIDE

Welcome

Hello to everyone, welcome and thank you all for agreeing to be part of our focus group. **Introductions**

First off, let me introduce ourselves: I'm (name of facilitator) working on a graduate research project at Bryant University. First, you all will be participating in an experiment. I am interested in hearing your thoughts, concerns, and insights after you complete the experiment. I encourage you all to speak freely and talk about opinions and experiences honestly. There are no right or wrong answers here. Your names will not be used in any of the reports, and all of what goes on in the focus group will remain confidential. The purpose of this focus group is to hear what you have to say about the experiment and survey, to help inform this research. I want to understand your thoughts about the video game and the online surveys you complete. (*Have them sign the online informed consent form).

Experiment

First, I would like you all to play a video game. Put on the headphones (make sure there is sound). I will time you for (25) minutes while you play the video game. (*Okay time is up). I would now like you to complete a survey (*have them open the online survey). Okay looks like everyone is done (*Record time). Debrief.

Questions About the Game:

First I want to thank you all for taking part in the experiment.

Game questions.

- 1. Raise your hand if you enjoyed the video game you played (*count).
- 2. Raise your hand if you did not enjoy the video game, (*count). Probe why.
- 3. Tell me about the game you played. Was it easy to pick up, frustrating, interesting etc. Probe why?

4. Did you feel like you could get into playing the game, or were you watching the clock and thinking about other things? Probe why?

- 5. Do you think this game is for fun or educational purposes? (why or why not?)
- 6. Any other thoughts on the game?

Character questions:

- 1. Did you like the character you played as in the video game?
- 2. Did you dislike the character you played as in the video game? Probe why.
- 3. Did you understand that the character had a mental illness? (**T group only**) How did you know?
- 4. Did you care about the character? (**T group only**) (Sympathy, empathy, affective responses) Why or why not?
- 5. Any other thoughts on the character?

Mental Illness Questions (T group only)

Be aware that I am not asking about your personal, second, third hand experiences with mental illness. I am just asking about the messages in the video game.

1. Do you believe the depiction of mental illness was accurate, realistic, understandable, and believable? Probe why?

2. Do you feel like you came away from the game with some sense of knowledge about what it is like to live with mental illness?

- a. Did the game provoke any responses regarding your thoughts about mental illness? (Probe what.)
- b. Did the game alter your attitudes toward people with mental illness? (If so, why?)
- c. Did the game make you feel more empathy toward people with mental illness? (why or why not?)

3. Any more thoughts on the representation of mental illness in the video game?

Questions about the Survey

I want to hear your thoughts on the individual parts and their directions and questions. <u>General Questions About Survey</u>

1. Overall how carefully did you read the directions and answer the survey questions? (If not carefully, probe why?)

2. How well did you understand the directions for each part of the survey? Was there any confusion? (If so, probe why)

Post-test.

1. Were the questions straight forward, easy to answer, comfortable to answer?

2. Suggestions?

Involvement with narrative and characters

5. These questions are used quite frequently to assess your involvement in the story. Were the directions and questions clear?

Empathy and Attitudes

1. Did these questions make sense, were they difficult to answer?

Other Questions:

- 1. At any point during the experiment did you feel tired, worn out, distracted?
- 2. Did I give away the purpose of the study or did you figure out what I was trying to get at (when?), and if so did you change your answers?
- 3. Do you understand the purpose of the study?
- 4. Any final thoughts, questions, concerns, insights?

Closing

Thanks for playing the game and answering and discussing all those questions. This focus group was to inform an experiment being conducted by a graduate student at Bryant University. The purpose of this experiment was to assess the influence of video game play on attitudes and empathy toward people with mental illness. I want to thank you all for participating in this focus group. (Collect materials) (Distribute \$5).

Appendix C: Video Game Descriptions

TREATMENT VIDEO GAME

Fran Bow Game Description

The following game description of *Fran Bow* was taken directly from the game developer's website.

Fran Bow is a creepy adventure game that tells the story of Fran, a young girl struggling with a mental disorder and an unfair destiny. After witnessing the gruesome and mysterious loss of her parents, found dismembered at their home, Fran rushes into the woods, together with her only friend, Mr. Midnight, a black cat that Fran had previously received as a present from her parents. In the forest, Fran goes into shock over the loss of her parents and when she recovers, she's at Oswald Asylum, an oppressive mental institution for children, and Mr. Midnight is nowhere to be found. After having a dream about her beloved cat, Fran decides to escape from the mental institution to find him and go back home to Aunt Grace, her only living relative (KillMonday Games, n.d.).

Fran Bow does not define the character with her mental illness, treating mental illness as a presence, rather than a disease. Unlike many horror video games with psychological themes, there is never a sense that the characters with mental illness are "scary," "disgusting," or "monsters;" rather, the illness itself is the "monster." For example, black blob monsters loom over the children who have been placed in the Oswald Asylum, which may be understood as representing depression or a mood disorder. In addition, throughout the game environment, medical books, charts, and signs are placed throughout the mental illness, learning what it is like to live with a mental disorder. This game does not lecture the player how to feel about mental illness; rather, it allows players to interpret for themselves how to feel about the characters and themes of the story.

The playable character, Fran Bow, is an 11-year-old girl traumatized by a recent event and struggling with a mental disorder. Players get to see the world through Fran's eyes. Additional characters in the game include other children at Oswald Asylum, nurses, a psychiatrist, and guard. Fran's parents, aunt, and cat are seen. In addition, monsters and creatures roam about, and some invite player interaction. For example, Itward, a skeleton type creature, is Fran's companion and imaginary friend since childhood appearing as a protector for children with mental illness. The following is a description of the game features taken directly from the developer's website.

Story driven creepy psychological horror adventure game. Unique and peculiar hand drawn 2D Art-Style and 2D animation. Self-administer medication to open the terrible hidden world that will help solve puzzles and find objects. A big variety of puzzles designed with different levels of difficulty and specifically based on the story. Three arcade inspired mini-games all with different art style to be part of the transitions in the story. Interactive and occasionally playable pet cat, Mr. Midnight. 50+ interactive unique characters with unique personalities. Original soundtrack (KillMonday Games, n.d.).

CONTROL VIDEO GAME

Spy Fox: Some Assembly Required Game Description

The following game description was taken directly from the Steam website.

Spy Fox, the suave secret agent who smoothly finesses his way through Spy Corps' toughest assignments. This time, Spy Corps' corrupt counterpart, the Society for Meaningless Evil, Larceny, Lying and Yelling (S.M.E.L.L.Y) has devised a dogbot which will be unleashed upon the unsuspecting world! In his hastiness, S.M.E.L.L.Y.'s corrupt commander, Napoleon LeRoach, did not install an OFF switch on the dogbot. Instead he hid the switch somewhere within the World's Fair. The Mission: Find the hidden OFF switch, deactivate the dogbot and stop LeRoach in his robotic tracks! (Valve Corporation, 2016).

Appendix D: Experimental Informed Consent

INFORMED CONSENT (Treatment Group)

Investigator: Kristy M. Najarian Bryant University Knajarian@Bryant.edu

Video Games

YOU MUST BE 18 OR OLDER TO PARTICIPATE IN THIS STUDY. <u>IF YOU ARE NOT</u> 18, STOP IMMEDIATELY AND DO NOT ANSWER THE QUESTIONS ON THIS SURVEY

1. Introduction: You are being asked to participate in a research study. This consent form provides information about the study. If you agree to participate in the study, you will be asked to indicate "yes" or "no" with a check mark. This process is known as informed consent.

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<u>Risks</u>: In order to protect your privacy, no questionnaire will ask for your name or any other identifying information. In addition, brief personal questions will be asked about you, your family, and friend's mental health status. Last, the video game is classified as a "creepy psychological horror adventure game" which may cause emotional responses.

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5. Compensation: You will be entreated into a drawing to win 1 of 2 \$100 gift cards to the Bryant University Bookstore & receive extra credit, as compensation for your time and effort.

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Do you agree to participate in this study? * □Agree □Disagree

INFORMED CONSENT (Control Group)

Investigator: Kristy M. Najarian Bryant University Knajarian@Bryant.edu

Video Games

YOU MUST BE 18 OR OLDER TO PARTICIPATE IN THIS STUDY. <u>IF YOU ARE NOT</u> 18, STOP IMMEDIATELY AND DO NOT ANSWER THE QUESTIONS ON THIS <u>SURVEY</u>

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8. Signature Indicating Informed Consent: Please indicate below if you have decided to participate. Your checkmark indicates only that you are at least 18 years of age and have read the

information provided above. Your checkmark does not obligate you to participate, and you may withdraw from the study at any time without consequences.

Do you agree to participate in this study? * □Agree □Disagree

Appendix E: Questionnaires

QUESTIONAIRE TREATMENT GROUP

STOP! Do not move forward with the questionnaire – until the researcher tells you. You will now play a video game. Listen to the researcher's instructions.

Thank you for playing the video game.

Now you will answer questions about yourself, your thoughts on some statements, and the video game you just played.

Click continue only if the researcher told you to *

 \Box Continue

Demographics

Please answer the following questions about yourself. Check the box to mark your answer, and write your answer when appropriate.

What is your age?

Race/Ethnicity: How do you describe yourself?

□American Indian or Alaska □Asian or Asian American □Black or African American □Hawaiian or Other Pacific Islander □Hispanic or Latino □White □Other

Are you male or female?

□Male □Female

Indicate the year of school you are in right now.

□Freshman □Sophomore □Junior □Senior □Grad 1 □Grad 2 □Other

Mental Health

Have you, anyone in your family or friends *ever* been diagnosed with a mental illness (e.g. depression, obsessive compulsive disorder, ADHD)?

If yes, continue to answer the following questions in this section, If no, move onto the next section.

Self with mental illness □Yes □No

If yes indicate your diagnosis

Have you experienced mental illness within the past 4 months?

Indicate how many times you have visited a social worker/therapist within the past 4 months.

Family member with mental illness? □Yes □No

If yes, indicate your relationship (for example: sister)

If yes, indicate your family member's diagnosis.

Has a friend ever disclosed a his/her mental illness to you?

Video Game Experience

Indicate how many hours a week (Monday through Sunday) you play video games.

Would you consider yourself a (1) "casual" to (5) "serious" gamer?

 1
 "casual"

 2

 3

 4

 5
 "serious"

 N/A

Indicate your experience level with computer games (1) "beginner" to (5) "master" \Box 1 "beginner"

□2 □3 □4 □5 "master" □N/A

Indicate your experience level with console games (example, PlayStation, Xbox) (1) "beginner to (5) "master."

□1 "beginner" □2 □3 □5 "master" □N/A

Indicate your experience level with mobile games (1) "beginner" to (5) "master"

□1 "beginner" □2 □3 □4 □5 "master" □N/A

What is your favorite type of video game to play (check only one)

□Action □Adventure □Dance/Music/Party □Educational □Fighting □Role-Playing □Shooter □Simulation □Sports □Strategy/Puzzle □Survival/Horror □Other □N/A

The next few questions ask you to agree or disagree with a series of statements.

Please select the appropriate number that best fits your opinion on a scale of 1 to 7 where (1) represents "strongly disagree" to (7) "strongly agree."

1. Most people	with a	a menta	l illnes	s are to	o disab	led to v	vork.					
	1	2	3	4	5	6	7					
Strongly Disagree								Strongly Agree				
2. People with	a men	tal illne	ess tend	to brin	ıg it on	themse	elves.					
-	1	2	3	4	5	6	7					
Strongly Disagree								Strongly Agree				
3. People with mental illnesses often don't try hard enough to get better.												
I	1	2	3	4	5	6	ິ 7 ິ					
Strongly Disagree								Strongly Agree				
4. People with	a men	tal illne	ess coul	d iust s	nap ou	t of it if	thev w	anted to.				
	1	2	3	4	5	6	7					
Strongly Disagree								Strongly Agree				
5. People with a mental illness are often more dangerous than the average person.												
•	1	2	3	4	5	6	7	01				
Strongly Disagree								Strongly Agree				
6. People with	a men	tal illne	ess ofter	n becon	1e viole	nt if no	ot treate	ed.				
•	1	2	3	4	5	6	7					
Strongly Disagree								Strongly Agree				
7. Most violent	t crime	es are c	ommitt	ed by p	eople w	vith a n	nental i	llness.				
	1	2	3	4	5	6	7					
Strongly Disagree								Strongly Agree				
8. You can rely	y on so	meone	with a	mental	illness.							
	1	2	3	4	5	6	7					
Strongly Disagree								Strongly Agree				

9. You can never know what someone with a mental illness is going to do.

Strongly Disagree	1 □	2 □	3 □	4 □	5 □	6 □	7 □	Strongly Agree		
10. Most people v	with a r	nental i	llness g	get wha	t they d	leserve.				
Strongly Disagree		2 □	3 □	4 □	5 □	6 □	7 □	Strongly Agree		
11. People with s	erious 1	nental	illnesse	s need	to be lo	cked av	way.			
Strongly Disagree		\square	3 □	4 □	5	6 □	$\overline{\Box}$	Strongly Agree		
Please determine the extent to which you agree or disagree with the following statements. Select the appropriate number on a scale from 1 to 7 where (1) represents "strongly disagree" and (7) represents "strongly agree." Select only one number for each statement.										
1. I find it diffic	ult to h	ave em	pathy f	or the	experie	nce of l	iving w	ith mental illness.		
Strongly Disagree		\square	3 □	4	5 □	6 □	$\overline{\Box}$	Strongly Agree		
2. I cannot understand what it is like for people who experience mental illness.										
Strongly Disagree		\square	\square	4 □	5 □	6 □	7	Strongly Agree		
3. I find it hard to imagine what it might be like to have a mental illness										
Strongly Disagree		\square	3 □	4 □	5	6 □	$\overline{\Box}$	Strongly Agree		
4. I can relate to	the exp	erience	of thos	se who	have a	mental	illness			
Strongly Disagree	1	2 □	3 □	4 □	5 □	6 □	7	Strongly Agree		
The following questi Please determine the o you just played on a s "strongly dislike."	ons are extent to cale of	about which 1 to 7, v	the gan you lik vith (1)	ne you e or dis represe	just fin like the nting "s	ished p design strongly	laying features like" to	s of the video game o (7) representing		
1. The speed of	the dia	logue il	lness		_	r.	_			
Strongly Like		\square	\square	4 □	5 □	6 □	\square	Strongly Dislike		
2. The soundtra	ck (mu	sic)			_		_			
Strongly Like		2 □	$\overline{\mathbf{J}}$	4	5 □	6 □	7 □	Strongly Dislike		
3. The 2D art sty	le 1	2	3	4	5	6	7			

Strongly Like								Strongly Dislike			
4. The amount	of the c	lialogu	e								
Strongly Like	1 □	2 □	3 □	4 □	5 □	6 □	7 □	Strongly Dislike			
5.The amount o	of actio	n									
Strongly Like	1 □	2 □	3 □	4 □	5 □	6 □	7 □	Strongly Dislike			
Please determine th	1e exte	nt to w	hich yo	u agree	or disa	agree w	ith the	following statements.			
Select the appropri disagree" and (7) r	disagree" and (7) represents "strongly agree."										
1. While I was	playin	g the g	ame, I o	could e	asily pi	cture tł	ne even	ts in the narrative			
taking place	1	2	3	4	5	6	7				
Strongly Disagree								Strongly Agree			
2. While I was mind.	playin	g the g	ame, ac	ctivity g	oing or	1 in the	room a	around me was on my			
Strongly Disagras	1	2	3	4	5	6	7	Strongly Agree			
Strongry Disagree								Subligity Agree			
3. I could pictu	ire my	self in t	the nar	rative's	events	•	_				
Strongly Disagree		$\frac{2}{\Box}$	\square	4 □	5 □	6 □	7	Strongly Agree			
4. I was menta	lly inv	olved in	1 the na	irrative	while	playing	the ga	me.			
Strongly Disagree	1 □	2 □	3 □	4 □	5 □	6 □	7 □	Strongly Agree			
5. After playin	g the g	game, I	found i	it easy t	to put it	t out of	my mi	nd.			
Strongly Disagree	1 □	2 □	3 □	4 □	5 □	6 □	7 □	Strongly Agree			
6. I wanted to	learn l	now the	game	ended.							
Strongly Disagree	1 □	2 □	3 □	4 □	5 □	6 □	7 □	Strongly Agree			
7. The narration	ve in tl	ne game	e affect	ed me e	motion	ally.					
Strongly Disagree	1 □	2 □	3 □	4 □	5 □	6 □	7 □	Strongly Agree			
8. I found mys	elf thi	nking o	f ways	the gan	ne coulo	d have t	turned	out differently.			
	I	2	3	4	Э	0	1				

GAME NARRATIVES

Strong	ly Disagree								Strongly Agree		
9.	I found my m	ind wa	ndering	g while	playing	g the ga	me.	_			
Strong	ly Disagree	1	2 □	3 □	4 □	5 □	6 □	7 □	Strongly Agree		
10.	The events in	the ga	me nar	rative a	re relev	ant to	my eve	ryday l	ife.		
Strong	ly Disagree		\square	\square	4 □	5	6 □	7	Strongly Agree		
11.	The events in	the gai	me nar	rative h	ave cha	anged n	ny life.	-			
Strong	ly Disagree		\square	3	4	5	6		Strongly Agree		
Questions about the game, continued Please indicate the extent to which you agree or disagree with each statement by selecting a number on a scale of 1 to 7 with (1) representing "strongly disagree" to (7) representing "strongly agree."											
1. /	At points, I ha	d a har	d time	making	sense o	of what	was go	ing on	in the game.		
Strong	ly Disagree			3 □	4	5	6 □		Strongly Agree		
2. My understanding of the character(s) is unclear.											
Strong	ly Disagree		\square	3 □	4	5	6		Strongly Agree		
3.	I had a hard	time re	cognizi	ng the t	hread o	of the st	tory.	_			
Strong	ly Disagree		\square	\square	4 □	5	6 □	7	Strongly Agree		
4.	I found my m	ind wa	ndering	g while	playing	g the ga	me.	_			
Strong	ly Disagree			3 □	4	5	6 □		Strongly Agree		
5.	While playing	g the ga	me I fo	ound my	yself thi	inking :	about o	ther th	ings		
Strong	ly Disagree		2 □	\square	4 □	5 □	6 □	7 □	Strongly Agree		
6.	I had a hard	time ke	eping n	ny mino	d on pla	ying th	e game	.			
Strong	ly Disagree	1	2 □	3 □	4 □	5 □	6 □	7 □	Strongly Agree		
7.	During game	play, n	ny body	y was in	the ro	om, but	: my mi	nd was	inside the world		
	created by th	e story. 1	2	3	4	5	6	7			

GAME NARRATIVES

Strongly Disagree								Strongly Agree				
8. The game c video game	reated a ended.	a new v	vorld, a	and the	n that v	world si	uddenly	v disappeared when the				
Strongly Disagree	1 □	2 □	3 □	4 □	5 □	6 □	7 □	Strongly Agree				
9. At times du	ring th	e game	, the sto	ory woi	rld was	closer (to me th	an the real world.				
Strongly Disagree		\square	\square	4	5 □	6		Strongly Agree				
10. The story affected me emotionally.												
Strongly Disagree		\square	3 □	4 □	5 □	6 □		Strongly Agree				
11. During the video game, when a main character succeeded, I felt happy, and when												
they suffered in	some 1	way, 1 1 2	telt sad	4	5	6	7					
Strongly Disagree								Strongly Agree				
12. I felt sorry for some of the character(s) in the video game.												
Strongly Disagree		2 □	3 □	4 □	5 □	6 □	7 □	Strongly Agree				
Please determine the a scale of 1 to 7, widisagree."	he exter th (1) r	nt to w eprese	hich yo nting "s	u agree strongly	e or disa y agree	agree w " to (7)	ith the represe	following statements on enting "strongly				
1. I would rec	ommen	d this y	video ga	ame to :	a friend	d.						
Strongly Agree	1	2 □	3 □	4 □	5 □	6 □	7 □	Strongly Disagree				
2. I want to pl	av the i	rest of	the vide	eo game	e to fin	d out w	hat hap	pens next.				
Strongly Agree	_1 □	2 □	3 □	4 □	5 □	6 □	7 □	Strongly Disagree				
3. I found the	video g	ame fr	ustratii	ng to pl	ay.							
Strongly Agree	1 □	2 □	3 □	4 □	5 □	6 □	7 □	Strongly Disagree				
4. I found the	video g	ame ea	sy to p	lay.	_	-	_					
Strongly Agree	1 □	2 □	3 □	4 □	5 □	6 □	7 □	Strongly Disagree				
5. I found the	video g 1	ame ha 2	ard to c 3	ontrol. 4	5	6	7					

Strongly Agree

Please numb at all.'	e answer the er on a scale "	followin e of 1 to	ng ques 7, with	stions a (1) rep	bout th resenti	e video ng "ver	game y y much	vou just 1 so" to	played by selecting a (7) representing "not		
1. Do you believe the video game depicted the characters with mental illness as though they could, "just get over their mental illness if they wanted to?"											
Very r	nuch so	1 □	2 □	3 □	4 □	5 □	6 □	7 □	Not at all		
2. Do you believe the video game depicted the characters with mental illness as "dangerous?"											
Very r	nuch so	1 □	2 □	3 □	4 □	5 □	6 □	7 □	Not at all		
3. Do you believe the video game depicted the characters with mental illness as "untrustworthy?"											
Very r	nuch so	1	2 □	3 □	4 □	5 □	6 □	7 □	Not at all		
4.	Do you bel "incompete	ieve the ent?"	video g	game do	epicted	the cha	racters	s with n	nental illness as		
Very r	nuch so	1 □	2 □	3 □	4 □	5 □	6 □	7 □	Not at all		
5.	Do you bel "they are t	ieve the o blame	video g for the	game de eir diso	epicted rder?"	the cha	racters	s with n	nental illness, as though		
Very r	nuch so	1 □	2 □	3 □	4 □	5 □	6 □	7 □	Not at all		
6.	Do you bel "scary?"	ieve the	video g	game de	epicted	the cha	racters	s with n	nental illness as		
Very r	nuch so	1 □	2 □	3 □	4 □	5 □	6 □	7 □	Not at all		
All do	All done! Thank you for your participation in this study 🕲										

QUESTIONAIRE CONTROL GROUP

STOP! Do not move forward with the questionnaire – until the researcher tells you. You will now play a video game. Listen to the researcher's instructions.

Thank you for playing the video game.

Now you will answer questions about yourself, your thoughts on some statements, and the video game you just played.

Strongly Disagree

Click continue only if the researcher told you to *

 \Box Continue

Demographics

Please answer the following questions about yourself. Check the box to mark your answer, and write your answer when appropriate.

What is your age?

Race/Ethnicity: How do you describe yourself?

□American Indian or Alaska □Asian or Asian American □Black or African American □Hawaiian or Other Pacific Islander □Hispanic or Latino □White □Other

Are you male or female?

□Male □Female

Indicate the year of school you are in right now.

□Freshman □Sophomore □Junior □Senior □Grad 1 □Grad 2 □Other

Mental Health

Have you, anyone in your family or friends *ever* been diagnosed with a mental illness (e.g. depression, obsessive compulsive disorder, ADHD)?

If yes, continue to answer the following questions in this section, If no, move onto the next section.

Self with mental illness □Yes □No

If yes indicate your diagnosis

Have you experienced mental illness within the past 4 months? □Yes □No □N/A

Indicate how many times you have visited a social worker/therapist within the past 4 months.

Family member with mental illness? □Yes □No

If yes, indicate your relationship (for example: sister)

If yes, indicate your family member's diagnosis.

Has a friend ever disclosed a his/her mental illness to you? □Yes □No □N/A

Video Game Experience

Indicate how many hours a week (Monday through Sunday) you play video games.

Would you consider yourself a (1) "casual" to (5) "serious" gamer?
□1 "casual"
$\Box 2$
□5 "serious"
\Box N/A

Indicate your experience level with computer games (1) "beginner" to (5) "master" □1 "beginner" □2 □3 □4 □5 "master" □N/A

Indicate your experience level with console games (example, PlayStation, Xbox) (1) "beginner to (5) "master."

□1 "beginner" □2 □3 □4 □5 "master" □N/A

Indicate your experience level with mobile games (1) "beginner" to (5) "master"

□1 "beginner" □2 □3 □4 □5 "master" □N/A

What is your favorite type of video game to play (check only one)

□Action □Adventure □Dance/Music/Party □Educational □Fighting □Role-Playing □Shooter □Simulation □Sports □Strategy/Puzzle □Survival/Horror □Other □N/A

The next few questions ask you to agree or disagree with a series of statements.

Please select the appropriate number that best fits your opinion on a scale of 1 to 7 where (1) represents "strongly disagree" to (7) "strongly agree."

1. Most people	e with a	a menta	l illnes	s are to	o disab	led to v	vork.	
	1	2	3	4	5	6	7	
Strongly Disagree								Strongly Agree

2.	People with a	menta	l illness	s tend to	o bring	it on th	nemselv	ves.		
~		1	2	3	4	5	6	7	~ 1 · i	
Strong	ly Disagree								Strongly Agree	
3.	People with n	nental i	llnesse	s often (don't ti	rv hard	enoug	h to get	better.	
		1	2	3	4	5	6	7		
Strong	ly Disagree								Strongly Agree	
	B 1 1 1				•					
4.	People with a	menta	l illness	s could	just sna 1	ap out (5	01 It II tl 6	hey wai	nted to.	
Strong	ly Disagree		\square		4	\Box			Strongly Agree	
5. People with a mental illness are often more dangerous than the average person.										
C. 1	. р [.]	1	2	3	4	5	6	7	G4 1 A	
Strong	ly Disagree								Strongly Agree	
6. People with a mental illness often become violent if not treated.										
	Ĩ	1	2	3	4	5	6	7		
Strong	ly Disagree								Strongly Agree	
7. Most violent crimes are committed by people with a mental illness.										
C (1	- D'	1	2	3	4	5	6	7		
Strong	ly Disagree								Strongly Agree	
8.	You can rely	on som	eone w	ith a m	ental il	lness.				
	-	1	2	3	4	5	6	7		
Strong	ly Disagree								Strongly Agree	
9.	You can neve	r know	what s	omeon	e with a	a menta	al illnes	s is goir	1g to do.	
		1	2	3	4	5	6	7	8	
Strong	ly Disagree								Strongly Agree	
10	Mastroapla	with a v	montal	Illmaga	rot who	t that a	laganna			
10.	Most people v	1 vitin a 1	2	niness į 3	2 d	5	6	7		
Strong	ly Disagree							\square	Strongly Agree	
U										
11.	People with s	erious 1	mental	illnesse	es need	to be lo	cked av	way.		
Strong	ly Disagree		\square	5	4	⊃	6		Strongly Agree	
Please determine the extent to which you agree or disagree with the following statements. Select the appropriate number on a scale from 1 to 7 where (1) represents "strongly disagree" and (7) represents "strongly agree." Select only one number for each statement.										

1. I find it difficult to have empathy for the experience of living with mental illness.

GAME NARRATIVES

Strongly Disagree								Strongly Agree			
2. I cannot und	lerstan	d what	it is lik	e for p	eople w	vho exp	erience	e mental illness.			
Strongly Disagree	1 □	2 □	3 □	4 □	5 □	6 □	7 □	Strongly Agree			
3. I find it hard	l to im	agine w	vhat it n	night k	e like t	o have	a ment	al illness			
Strongly Disagree	1 □	2 □	3 □	4 □	5 □	6 □	7 □	Strongly Agree			
4. I can relate to the experience of those who have a mental illness											
Strongly Disagree	1 □	2 □	3 □	4 □	5 □	6 □	7 □	Strongly Agree			
The following questions are about the game you just finished playing Please determine the extent to which you like or dislike the design features of the video game you just played on a scale of 1 to 7, with (1) representing "strongly like" to (7) representing "strongly dislike."											
1. The speed of	f the di	alogue	illness								
Strongly Like	1 □	2 □	3 □	4 □	5 □	6 □	7 □	Strongly Dislike			
2. The soundtr	ack (m	usic)									
Strongly Like	1 □	2 □	3 □	4 □	5 □	6 □	7 □	Strongly Dislike			
3. The 2D art st	yle										
Strongly Like	1 □	2 □	3 □	4 □	5 □	6 □	7 □	Strongly Dislike			
4. The amount o	of the d	ialogue	ę								
Strongly Like	1 □	2 □	3 □	4 □	5 □	6 □	7 □	Strongly Dislike			
5. The amount o	of actio	n									
Strongly Like	1 □	2 □	3 □	4 □	5 □	6 □	7 □	Strongly Dislike			

Please determine the extent to which you agree or disagree with the following statements. Select the appropriate number on a scale from 1 to 7 where (1) represents "strongly disagree" and (7) represents "strongly agree."

1. While I was playing the game, I could easily picture the events in the narrative taking place.

1 2 3 4 5 6 7

GAME NARRATIVES

Strong	ly Disagree								Strongly Agree		
2.	While I was p mind.	olaying	the gar	ne, acti	vity goi	ing on i	n the ro	oom are	ound me was on my		
Strong	ly Disagree	1 □	2 □	3 □	4 □	5 □	6 □	7 □	Strongly Agree		
3.	I could pictur	re myse	lf in th	e narra	tive's e	vents.					
Strong	ly Disagree	1 □	2 □	3 □	4 □	5 □	6 □	7 □	Strongly Agree		
4.	4. I was mentally involved in the narrative while playing the game.										
Strong	ly Disagree	1 □	2 □	3 □	4 □	5 □	6 □	7 □	Strongly Agree		
5. After playing the game, I found it easy to put it out of my mind.											
Strong	ly Disagree	1 □	2 □	3 □	4 □	5 □	6 □	7 □	Strongly Agree		
6. I wanted to learn how the game ended.											
Strong	ly Disagree	1 □	2 □	3 □	4 □	5 □	6 □	7 □	Strongly Agree		
7.	The narrative	e in the	game a	affected	me em	otional	ly.	_			
Strong	ly Disagree		\square	\square	4 □	5 □	6 □	7 □	Strongly Agree		
8.	I found mysel	lf think	ing of v	ways th	e game	could l	nave tu	rned ou	t differently.		
Strong	ly Disagree	1 □	2 □	3 □	4 □	5 □	6 □	7 □	Strongly Agree		
9.	I found my m	ind wa	nderin	g while	playing	g the ga	me.	_			
Strong	ly Disagree	\square	2 □	3 □	4 □	5 □	6 □	7 □	Strongly Agree		
10.	. The events in	the ga	me nar	rative a	re rele	vant to	my eve	ryday l	ife.		
Strong	ly Disagree	1 □	2 □	3 □	4 □	5 □	6 □	7 □	Strongly Agree		
11.	. The events in	the ga	me nar	rative h	ave ch	anged r	ny life.	_			
Strong	ly Disagree		2 □	3 □	4 □	5 □	6 □	7 □	Strongly Agree		

Questions about the game, continued...

Please indicate the extent to which you agree or disagree with each statement by selecting a number on a scale of 1 to 7 with (1) representing "strongly disagree" to (7) representing "strongly agree."

1. At points, I h	ad a ha	ard tim	e maki	ng sens	e of wh	at was	going o	n in the game.			
- '	1	2	3	4	5	6	7	2			
Strongly Disagree								Strongly Agree			
2. My understa	nding o	of the c	haracte	er(s) is u	unclear						
	1	2	3	4	5	6	7				
Strongly Disagree	Π		Π			Ū	,	Strongly Agree			
Strongry Disagree								Subligity rigide			
3. I had a hard	l time r	recogni	zing the	e threa	d of the	e story.					
	1	2	3	4	5	6	7				
Strongly Disagree								Strongly Agree			
4. I found my mind wandering while playing the game.											
U	1	2	ິ3	4	ັ5	6	7				
Strongly Disagree								Strongly Agree			
5. While playing the game I found myself thinking about other things											
······································	1	2	3	4	5	6	7	8-			
Strongly Disagree		_ 			Π	П	Γ	Strongly Agree			
Strongry Disagree								Strongry rigice			
6. I had a hard time keeping my mind on playing the game.											
	1	2	3	4	5	6	7				
Strongly Disagree								Strongly Agree			
7. During gam	e play,	my bo	dv was	in the 1	room, b	out my i	nind w	as inside the world			
created by t	he stor	y.	v		,	v					
	1	2	3	4	5	6	7				
Strongly Disagree								Strongly Agree			
8. The game cr	eated :	a new v	vorld, a	ind the	n that v	world su	uddenly	y disappeared when the			
viuco game	1	r	3	4	5	6	7				
Strongly Digo grad			3 □	4	э П	0		Study also A guad			
Strongly Disagree								Strongly Agree			
9. At times du	ring th	e game	, the sto	ory wor	·ld was	closer t	o me tl	nan the real world.			
	1	2	3	4	5	6	7				
Strongly Disagree								Strongly Agree			
10. The storv af	fected	me em	otionall	y.							
,	1	2	3	4	5	6	7				
Strongly Disagree								Strongly Agree			

11. During the video game, when a main character succeeded, I felt happy, and when they suffered in some way, I felt sad. 4 6 7 1 2 3 5 Strongly Disagree \Box \Box \Box Strongly Agree 12. I felt sorry for some of the character(s) in the video game. 2 1 3 4 5 6 7 П Strongly Disagree Strongly Agree Please determine the extent to which you agree or disagree with the following statements on a scale of 1 to 7, with (1) representing "strongly agree" to (7) representing "strongly disagree." 1. I would recommend this video game to a friend. 2 3 4 7 1 5 6 Strongly Agree Strongly Disagree 2. I want to play the rest of the video game to find out what happens next. 2 3 4 5 6 7 1 П П П П П П Strongly Agree Strongly Disagree 3. I found the video game frustrating to play. 2 6 7 1 3 4 5 Strongly Agree Strongly Disagree 4. I found the video game easy to play. 2 5 6 7 1 3 4 Strongly Agree Strongly Disagree 5. I found the video game hard to control. 5 1 2 3 4 6 7 Strongly Agree П Strongly Disagree All done! Thank you for your participation in this study 😊

Appendix F: Instrument Items

Attitudes Toward People With Mental Illness Scale

- 1. Most people with a mental illness are too disabled to work. (R)
- 2. People with a mental illness tend to bring it on themselves. (R)
- 3. People with mental illnesses often don't try hard enough to get better. (R)
- 4. People with a mental illness could just snap out of it if they wanted to. (R)
- 5. People with a mental illness are often more dangerous than the average person. (R)
- 6. People with a mental illness often become violent if not treated. (R)
- 7. Most violent crimes are committed by people with a mental illness. (R)

- 8. You can rely on someone with a mental illness.
- 9. You can never know what someone with a mental illness is going to do. (R)
- 10. Most people with a mental illness get what they deserve. (R)
- 11. People with serious mental illnesses need to be locked away. (R)

Controllability of Illness (Sub-Scale)

- 1. People with a mental illness tend to bring it on themselves. (R)
- 2. People with a mental illness could just snap out of it if they wanted to. (R)

Empathy Toward People With Mental Illness Scale

- 1. I find it difficult to have empathy for the experience of living with mental illness (R)
- 2. I cannot understand what it is like for people who experience mental illness (R)
- 3. I find it hard to imagine what it might be like to have a mental illness (R)
- 4. I can relate to the experience of those who have a mental illness

Transportation Scale

- 1. While I was playing the game, I could easily picture the events in the narrative taking place.
- 2. While I was playing the game, activity going on in the room around me was on my mind. (R)
- 3. I could picture myself in the narrative's events.
- 4. I was mentally involved in the narrative while playing the game.
- 5. After playing the game, I found it easy to put it out of my mind. (R)
- 6. I wanted to learn how the game ended.
- 7. The narrative in the game affected me emotionally.
- 8. I found myself thinking of ways the game could have turned out differently.
- 9. I found my mind wandering while playing the game. (R)
- 10. The events in the game narrative are relevant to my everyday life.
- 11. The events in the game narrative have changed my life.

Narrative Engagement Scale

Narrative Understanding (Sub-Scale)

- 1. At points, I had a hard time making sense of what was going on in the game. (R)
- 2. My understanding of the character(s) is unclear. (R)
- 3. I had a hard time recognizing the thread of the story. (R)

Attentional Focus (Sub-Scale)

- 4. I found my mind wandering while playing the game. (R)
- 5. While playing the game I found myself thinking about other things. (R)
- 6. I had a hard time keeping my mind on playing the game. (R)

Narrative presence (Sub-Scale)

- 7. During game play, my body was in the room, but my mind was inside the world created by the story.
- 8. The game created a new world, and then that world suddenly disappeared when the video game ended.
- 9. At times during the game, the story world was closer to me than the real world.

Emotional engagement (Sub-Scale)

- 10. The story affected me emotionally.
- 11. During the video game, when a main character succeeded, I felt happy, and when they suffered in some way, I felt sad.
- 12. I felt sorry for some of the character(s) in the video game.

In-Game Stereotypes Scale

- 1. Do you believe the video game depicted the characters with mental illness as though they could, "just get over their mental illness if they wanted to?"
- 2. Do you believe the video game depicted the characters with mental illness as "dangerous?"
- 3. Do you believe the video game depicted the characters with mental illness as "untrustworthy?"
- 4. Do you believe the video game depicted the characters with mental illness as "incompetent?"
- 5. Do you believe the video game depicted the characters with mental illness, as though "they are to blame for their disorder?"
- 6. Do you believe the video game depicted the characters with mental illness as "scary?"

Behavioral Characteristics (Sub-Scale)

- 1. Do you believe the video game depicted the characters with mental illness as "dangerous?"
- 2. Do you believe the video game depicted the characters with mental illness as "untrustworthy?"
- 3. Do you believe the video game depicted the characters with mental illness as "scary?"

Note: (R) indicates the item was reverse scored.