Spring 2024

Dungeons And Dragons™ (D&D) As A Brief Intervention For College Students

Alexander W. Peralta

DUNGEONS AND DRAGONS™ (D&D) AS A BRIEF INTERVENTION FOR COLLEGE

STUDENTS

by

ALEXANDER PERALTA

(Under the Direction of Wendy Wolfe)

This quasi-experimental study investigated the effect of a table-top roleplaying game (TTRPG), specifically Dungeons and Dragons™ (D&D), on increasing feelings of social connection, decreasing perceived stress, increasing self-esteem and improving adjustment to college among first semester, first year students. Participants signed up to either the D&D group or the comparison group. D&D participants ($n = 18$) attended five one-hour weekly D&D sessiong ns, meanwhile the comparison group ($n = 10$) went through their first semester of college with no intervention, but completed the study measures at the same points in time as the d&d participants. All participants completed measures of social connection, adjustment to college, college stress, and self-esteem within the first two months of their first semester of college and again approximately six weeks later (after the d&d group met for five weeks). Participants in the D&D group demonstrated a significantly greater change in college stress than the comparison group, specifically a reduction in stress. Furthermore, the D&D group also demonstrated significantly greater personal-emotional adjustment to college (subscale of the student adaptation to college questionnaire). Given the substantial amount of anecdotal evidence on the benefits of D&D, it is integral to continue to examine evidential support for a game with increasing recreational popularity and potential therapeutic/interventional benefits.

INDEX WORDS: Index term, Dissertation, Thesis guidelines, College of Graduate Studies, Student, Graduate degree, Georgia Southern University

DUNGEONS AND DRAGONS™ (D&D) AS A BRIEF INTERVENTION IN PROMOTING

SOCIAL CONNECTION AND ADJUSTMENT TO COLLEGE

by

ALEXANDER PERALTA

B.S., Georgia Southern University, 2022

M.S., Georgia Southern University, 2024

DUNGEONS AND DRAGONS™ (D&D) AS A BRIEF INTERVENTION IN PROMOTING

SOCIAL CONNECTION AND ADJUSTMENT TO COLLEGE

by

ALEXANDER PERALTA

Major Professor: Wendy Wolfe

Committee: Joshua Williams

Mike Nielsen

Electronic Version Approved:
May 2024

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER 1

INTRODUCTION

Purpose of the Study

Gary Gygax and Dave Arneson created Dungeons and Dragons™ (D&D) almost five decades ago (1974), and during that time, their fantasy table-top role-playing game (TTRPG) has undergone numerous revisions and has attracted millions of players. The developers worked together with their community to build upon its foundation and expand on the tools available, developing a more versatile, diverse, and inclusive D&D experience in which players could approach and play D&D from a variety of play styles. D&D's focus moved from fighting dragons and scavenging for loot in dungeons to a more narrative storytelling approach. The Dungeon/Game Master (D/GM) guides the narrative by acting as the illustrator and co-author of the story. They paint players' environments and fill the world with interactive non-playable characters (NPCs), which facilitate the exploration of every player's narrative arc and guide them through turn-based combat. In collaboration, players act as the first authors of the story, ultimately deciding which strands of the narrative to pursue and their conclusions. Every action or attack is in the hands of each person in the group. However, there is still a level of uncertainty; specific dice rolls determine every outcome of an action.

Players create their characters' ambitions and goals, whether resembling their own, deviating from their own, or reflecting the antithesis of their preferences and tendencies. Depending on their character's race and class, players have unique skills or tools that may assist them in whichever role they assign themselves. Players rely on each other's characters' actions to protect (Fighter), fight (Barbarian), or heal (Cleric). Group cohesion determines the success of individual and group goals, and as collective storytellers, players guide each other through

dilemmas and issues that may reflect players' intrapersonal and interpersonal issues. The fantasy atmosphere allows players to overcome personal barriers that other socially-oriented groups might not allow them to address sufficiently.

The game's accessibility makes it available for anyone, regardless of age, socio-economic status, identity, or physical appearance. Dice, pen, paper, and imagination are all that is needed. Everyone starts at the same level of power, removing any sense of superiority or inferiority between its players. A campaign can be composed of a group of individuals who do not know each other, friends and family, or a mixture of both. Through collaboration, communication, and contribution, D&D can bolster social connection between its players and potentially impact the relationships between others outside the D&D group.

During the COVID-19 pandemic, D&D's popularity increased significantly, perhaps as a means of preserving that social connection with friends and family that COVID-19 tore down (Hughes, 2021). Popular fantasy culture such as *Lord of the Rings* and *He-Man* heavily influenced D&D during its development. It has, in turn, inspired a variety of fantasy and sci-fi pop culture shows (e.g., *Stranger Things* and *Legend of Vox Machina*), with its movie coming out in early 2023. However, contrary to the current acclaim toward D&D, a few years after its initial release (1973), it became associated with the rise of the Satanic Panic (1980's).

This moral panic led to thousands of satanic ritual abuse cases, where many individuals ended up falsely prosecuted. The paranoia that satanic cults were invading began spreading to every community, and D&D was viewed as an instrument to lure children toward devil worship. Fear reached mainstream media when Raffe (1981) and Dear (1984) published fiction and nonfiction books based on the disappearance of James Dallas Egbert III who was a college student who played D&D. Dear (1984) depicted role-playing games as promoting neurotic

behaviors and the cause that pushed Egbert to commit suicide. Both books garnered national attention that ultimately shaped the perception of D&D. D&D was used as a scapegoat to explain the apparent increase in mental health issues among young adults. From then on, much of the D&D research focused on finding potential adverse effects. However, support for negative correlates of D&D was inconsistent.

Studies by Simon (1987) and Carroll and Carolin (1989) found no significant relationship between D&D and intelligence or emotional instability. Carter and Lester (1998), Rosenthal et al. (1998), and Abyeta and Forest (1991) also found no difference between gamers and non-gamers in depression, suicidal ideation, psychoticism, extraversion, or neuroticism. However, DeRenard and Kline (1990) reported that players who spent more money and time on D&D demonstrated higher rates of alienation and meaninglessness. Douse and McManus (1993) also found, using Davis' (1983) empathy questionnaire, that players of fantasy role-playing games (FRPGs) and Play-by-Mail games (PBMs) demonstrated significantly lower empathic concern than those who did not play FRPGs and PBMs, concluding that players of FPRGs demonstrated less sympathy and concern for others. Authors of "The Christian Response " (Grant & Leithart, 1988) recorded accounts from past Dungeon Masters that characterized D&D as the cause for their own and other players' disillusionment and violent tendencies. Nonetheless, most research pointed to no emotional, personality, or psychological difference between players and non-players. In addition, early research on D&D's negative effects used ineffective methods. Many studies lacked a control group and relied heavily on self-report data using a cross-sectional methodology. Therefore, causality could not have been inferred since the methodology left the causal relationships unknown.

Researchers would subsequently question the validity of prior studies due to their methodological problems and limitations. However, to this day, there remains a level of skepticism towards role-playing games such as D&D. As recently as 2018, Ben-Ezra et al. found that 34% of social workers believed there was a connection between playing online and in-person RPGs and psychopathology. Moreover, psychiatrists were administered a questionnaire analyzing perceptions of D&D's contribution to mental health issues and found that about 22% of them perceived a relationship between RPGs and psychopathology (Lis et al., 2015). For decades the majority of D&D research navigated narrowly, with the sole focus on proving or disproving stereotypes developed during the Satanic Panic, with little attention to the potential benefits of D&D. However, there has been a rise of role-playing and play therapy research that has demonstrated benefits in children's and adult's social and emotional development.

Zayas and Lewis (1986) first examined the benefits of D&D on a group of diverse children who demonstrated issues in interpersonal relations, mild to moderate levels of hyperactivity, and behavioral problems. The researchers examined the group's development of emotional and social skills. During their D&D sessions, they became more willing to rely on each other to achieve goals and develop resolutions. The children became more aware of the interpersonal relationships that they had developed with their group members, families, and their community. Through play the children learned to rely on others in the group, which enhanced their understanding of the interdependence of their social relationship, ultimately making them comfortable enough to talk through real-life concerns and experiences.

Knowing about the positive, but sparse research on D&D there was also an effort to incorporate D&D with pre-existing therapies. Rosselet and Stauffer (2013) integrated D&D into an Adlerian play therapy intervention for gifted children and adolescents. They focused on

implementing encouragement, social interest, and belonging in every session. To develop a framework that explains the interactions between D&D and its players, the researchers used Goffman's (1961, 1974) frame analysis to guide their observations and feedback based on the goals the researchers had established. After every session, researchers gave their participants feedback on their social interactions, collaborations and other social skills. They observed that players had the freedom to explore different identities at their own pace and were able to express emotions that had been pent up. The authors felt that participants became more conscious of different dimensions of themselves and developed strong interpersonal relationships.

In a case study, Blackmon (1994) incorporated D&D into a psychotherapeutic treatment administered to a young adult man suffering from severe depression and schizoid personality disorder. Blackmon described D&D as a regulated waking fantasy in which the participant could enact feelings of frustration and anger in a safe, displaced way. The game guided the participant to recognize his unconscious thoughts and allowed him to work toward developing more effective social and emotional skills that eventually carried over into the real world.

More recently, Abbott et al. (2022) used D&D as a therapeutic intervention consisting of seven participants with no experience playing TTRPGs and a mental health history of trauma, anxiety, and depression. The campaign went on for a year, with 90-minute weekly sessions, and no control group; they examined the effectiveness of the intervention by conducting qualitative interviews and examining journal notes and discussions collected by the researchers. Their analysis identified four overarching themes that frequently appeared throughout the one-year campaign. Participants were able to practice and develop a more resilient self in terms of confidence and being able to confront new situations or people. Participants felt that rumination about their past and future decisions and errors decreased. The skills they learned transferred to

the real world and improved their personal and social lives. In conclusion, D&D is an efficient intervention for individuals struggling with social and emotional distress. However, these particular D&D research studies still lacked a sufficient sample size, pre- post-test comparison, and did not include a control or comparison group.

In an attempt to address limitations associated with low sample size and lack of a comparison group, Rivers et al. (2016) examined the relationship between D&D and empathy and how absorption in the game was related to empathy. The researchers predicted that higher absorption levels among D&D players were most likely to correlate with empathic traits. The researchers used the Davis *Interpersonal Reactivity Index* (IRI; 1983, 1994) to examine empathy and the *Tellegen Absorption Scale* (TAS; Tellegen, 1982) to examine the level of absorption displayed by role-playing gamers (Rivers et al. 2016), specifically, their openness and emotional and cognitive adaptation towards different environments and experiences during D&D sessions. Their data demonstrated that the D&D group had greater levels of empathy than the normative sample from the original IRI measure development study (Davis, 1980). They also found a significant positive correlation between empathy and absorption. Researchers also found that D&D encouraged empathy-related skills such as perspective-taking, cooperation, diplomacy, and communication.

Chung (2011) examined three types of participants: TTRPG players, Electronic Role-Playing Games (ERPG) players, and non-players. The researchers randomly assigned participants to three priming conditions, and the dependent variable was their performance on a divergent thinking test. They hypothesized that TRPG players would perform better on the divergent thinking test under every priming condition, and those with more gaming experience would perform even better. Without the need for priming, TRPG players scored higher on the

divergent thinking test, indicating that they were significantly more creative than players involved in other forms of role-playing and non-players.

To examine the benefits of D&D without the influence of demand characteristics impacting participants' responses, Adams (2011) conducted a naturalistic observation experiment and examined a D&D campaign through the lens of group communication using Bormann's (1972) fantasy theme analysis (FTA). Researchers examined patterns found in the group's social media communication. Researchers coded Facebook posts into four ongoing themes throughout the campaign: democratic ideologies, friendship maintenance, extraordinary experiences, and good versus evil. The campaign's healthy cycle of online discussion promoted participation in group decisions, which developed a community built on communication, where concerns and suggestions could be answered and implemented into future D&D sessions. The players developed and maintained meaningful relationships through constant communication on social media. They displayed warm and affectionate messages of encouragement, and the social strands between them strengthened. Their Facebook posts expressed excitement toward their fantasy experiences, and players could role-play identities and personalities different from their own. Throughout the campaign, players developed a norm of supporting moral actions and behaviors.

In one of the few quasi-experimental investigations examining the effects of D&D gameplay, Wright et al. (2020) explored the use of role-playing games to determine if D&D can promote moral development and reasoning in college students. The researchers assigned participants to one of three conditions: the gaming group participated in six, approximately 4-hour sessions with weekly journaling, a non-gaming group completed weekly journaling, and a non-gaming group was included that did not complete weekly journaling. While the gaming

group answered open-ended questions about their gaming experience, the non-gaming/journaling group wrote about their college experiences. The Defining Issues Test (DIT-2, Bebeau & Thoma, 2003; Rest et al., 1999) was used to measure moral reasoning. The Self-Understanding Interview (SUI, Frimer & Walker, 2009) measured value orientation (self-enhancement or self-transcendence). Both measures were administered to all groups before and after the completion. Throughout every session, the structure of the D&D group's campaign involved encountering multiple social and moral dilemmas in which the group decided how to proceed and behave. Post-assessments demonstrated that there was evident moral growth in the role-playing gaming group and increased moral reasoning compared to the individuals in both non-role-playing groups. On the SUI measure, the gaming group displayed higher pre-survey self-enhancement than the non-gaming group, however, in the post-survey, it was no longer present and increased in the non-gaming group. In the non-gaming condition, self-transcendence (community) scores decreased, while the gaming groups self-enhancement (agency) decreased. In summary, on the SUI, self-interest of the gaming group shifted to the promotion of others' interest and the opposite was found in the non-gaming group. The findings supported the researchers' hypothesis that imaginative role-playing games could facilitate and protect moral reasoning and promote group interest.

While the research on D&D has evolved, it is still in its infancy. In addition, previously published research has been based on a platform that evolved significantly in the past decades. Research on D&D as a tool or intervention has been sparse and limited primarily to therapeutic settings, with limited sample size and only one study examining its efficacy in a college student population. Based on preliminary research, it appears D&D can help establish and strengthen relationships and facilitate the development of social and emotional skills. A variety of

populations could benefit from this intervention approach, such as first-year college students transitioning to a new and stressful environment where they will likely face new challenges.

College students have consistently demonstrated high anxiety, depression, and even suicidality (Bayram & Bilgel, 2007; Eisenberg et al., 2007), particularly in the past two decades. During this time, there has been an increase in college students seeking counseling appointments, with more than 60% reporting some anxiety and other mental, academic, and relationship issues (e.g., depression and stress, Winerman, 2017). Using a partial sample, Eisenberg et al. (2007) found out that 5.2% of the partial sample of undergraduate students ($N = 263$) screened positive for major depression, 2.9% had a generalized anxiety disorder, and 1.0% had a panic disorder, which is higher than the National Comorbidity Survey Replication (NCS-R) estimate. Apart from the initial data, Eisenberg et al. (2007) also found that 50% of undergraduate students reported that their current mental state had adversely impacted their academic performance.

Larcombe (2016) measured students' mental health symptoms using the Depression, Anxiety, Stress Scale (DASS-21) and found that one in four college students suffered from high levels of psychological distress. In particular, first-year students transitioning to college lack a meaningful sense of belonging in their new environment and are often uprooted from established social networks and historical coping methods. College students who experience greater loneliness also experience more learning burnout (Lin & Huang, 2012). Loneliness and burnout negatively impact perceived stress and the student's overall educational experience (e.g., academic motivation and academic performance, Stoliker & Lafreniere, 2015).

Tinto (2019) specifically discussed the challenges faced by first-year students in terms of retention in college. Overall, the paper emphasizes the importance of restructuring the first year of college to promote student persistence through collaborative learning opportunities. It

advocates for a collaborative effort between academic and student affairs professionals to create a coherent, shared learning experience that addresses the deeper roots of student retention. Finally, the paper calls for a year of inclusion that promotes the ideal of all individuals having a voice in the construction of knowledge, ultimately aiming to enhance student retention and academic success (Tinto, 2019).

Similarly, Astin (1999) presented a theory based on student involvement in higher education, emphasizing the importance of student engagement in academic experiences. Student involvement is defined as the amount of physical and psychological energy a student devotes to the academic experience, encompassing activities such as studying, campus involvement, participation in student organizations, and interaction with faculty and peers (Astin, 1999). The theory suggests that the quantity and quality of student involvement directly impacts their learning and personal development, and it can be used to guide the design of more effective educational programs (Astin, 1999). The document contrasts the theory of student involvement with traditional pedagogical theories, such as the subject matter, resource, and individualized theories. Student involvement theory shifts the focus from the subject matter and teaching techniques to the motivation and behavior of the student. Furthermore, the document outlines various research possibilities related to the theory of involvement, including assessing different forms of involvement, exploring the role of peer groups, studying the epidemiology of involvement, and investigating the temporal patterns and limits of involvement (Astin, 1999). It emphasizes the need to understand how different forms of involvement interact and the potential impact of involvement on developmental outcomes (Astin, 1999). Tinto and Astin conceptualized the importance of student involvement, and its impact on student retention and

motivation. It is likely that student involvement facilitates retention, in part, through helping to reduce anxiety and improve coping with the stressors associated with the transition to college.

Stress, mental health symptoms, loneliness, and social disconnection in college students have elevated subsequent to the COVID-19 pandemic. The pandemic required individuals to distance themselves socially and decreased accessibility and development of social connections. College students reported psychological distress during the pandemic to be higher than college students before the pandemic (Bisconer & McGill, 2022; Elharake, 2021; Hotez 2022). COVID-19 has also further decreased college students' sense of belonging (Raaper & Brown, 2020). Researchers (Copeland et al., 2020) at the University of Vermont used an ongoing study examining the health and wellness of first-year university students during the beginning of the spring semester (before COVID-19). Participants completed daily ecological momentary survey assessments throughout the semester (during COVID-19), and researchers observed moderate and persistent effects on students' stress, mood, and wellness. Moreover, a study with college students at Georgia Southern University (Wolfe, 2021) established high rates of depressive symptoms among students during the pandemic.

COVID-19 has had lasting effects on our population. Research has demonstrated that college students have been negatively impacted, providing additional mental health and social challenges to those already associated with adjusting to a new environment and stressors. Prior research, though limited, suggests that role-playing games such as D&D could provide experiences and tools helpful for facilitating adjustment to college life, especially in the first year.

This study aimed to examine if D&D was beneficial for first-year college students assimilating to a new environment. Unfamiliarity with any environment can lead to more

significant perceived stress and negative mood states. The adjustment period could be worsened by loneliness and isolation when distance and changes in existing support relationships threaten feelings of social connection. Given the promising, though sparse, previous research on D&D, we predicted that implementing a brief course in D&D gameplay would facilitate a positive adjustment to college during the first semester of college. In contrast with a comparison group of students, it was also expected that the D&D group would engage in collaborative problem solving, creative role play, conflict resolution, and other aspects inherent in TTRPG that would more strongly facilitate social connection, expression of emotion, and creative expression, which, in turn, would decrease perceived stress, negative mood states, and feelings of loneliness and isolation.

CHAPTER 2

EXPLORING THE POPULATION OF INTEREST

Participants

All participants were first-semester, first-year Georgia Southern University students who were recruited through posted advertisements and classroom visitations during the fall semester. As compensation for their participation in the study, they earned credit toward a course research requirement; those in the D&D condition earned six hours of credit, and those in the comparison group received one hour of credit. In addition, there was an incentive for those participants in the D&D group who wished to continue for an additional three weeks. They were eligible to be entered into a raffle where they could win a gift card. Participants were at least 18 years of age.

For the D&D condition, there were 4 groups of participants initially consisting of 25 participants in total. Seven participants were excluded from the data analysis due to attrition and missing data (primarily missing data from the post-test). Ultimately, the D&D group consisted of 18 participants (5 males, 9 females, 1 transgender male, 1 non-binary, 1 prefer not to say; 11 White, 2 Hispanic/Latino, and 5 Black or African American), with the age of participants ranging from 18 to 19 years ($M = 18.06$, $SD = 0.39$) The comparison group initially consisted of 20 participants. Ten participants were excluded from the data analysis due to attrition (e.g., missing data from the post-test). Ultimately, the comparison group consisted of 10 participants (all female; 4 Black or African American and 6 White), with the age of participants ranging from 18 to 19 years ($M = 18.40$, $SD = 0.52$). Across both conditions, 20 (71%) had no experience with D&D, and 8 (28.6%) had some experience playing D&D. For the extended D&D condition, there were 2 groups consisting of a total of seven participants who elected to remain in the study for

the additional sessions (2 male, 2 female, 1 transgender male, 1 prefer not to say, and 1 other; 1

Black or African American, 5 White, and 1 Hispanic/Latinx), with the only age being 18 years.

CHAPTER 3

CONCEPTUALIZING D&D AS A BREIF INTERVENTION

Measures

Participants from both groups completed pre- and post-measures to assess various aspects

of students' adjustment to college, along with an assessment of personality and demographic

variables to explore potential interactions with college student adjustment. The Social

Connection Scale-Revised (SCS-R; Lee et al. 2001) is a 20-item, 6-point Likert scale (1 =

strongly disagree to 6 = *strongly agree*, α = .92[1]) that measures the sense of belonging people

feel to individuals in the surrounding social environment. Sample items include "I find myself

actively involved in people's lives"; "I am able to connect with other people"; and "I don't feel I

participate with anyone or any group" (reverse scored). Social connectedness items are

significantly correlated with loneliness ($r = -.80$) and three of the four types of collective

self-esteem (membership $r = .49$, private $r = .42$, public $r = .39$). The College Student Stress

Scale (CSSS; Feldt, 2008) is an 11-item measure with each item rated on a 5-point Likert scale

(1 = *never* to 5 = *almost always*, α = .91) that examines the perceived stress in first-year college

students (e.g., academic, interpersonal relationships, social, and finances). The Student

Adaptation to College Questionnaire (SACQ) is a 67-item measure with each item rated on a

9-point Likert scale ranging from 1 = *doesn't apply to me at all* to 9 = *applies very closely to me*

that divides into four subscales: Academic Adjustment (α = .89), Social Adjustment (α = .86),

Personal-Emotional Adjustment (α = .89), and Institutional Attachment (α = .83), (Baker &

Siryk, 1989). The Big Five Inventory-10 (BFI-10) is a 10-item measure scaled on a 5-point

Likert scale (1 = *disagree strongly* to 5 = *agree strongly*) divided into five subscales:

Extraversion (α = .45), Agreeableness (α = .24), Conscientiousness (α = .62), Neuroticism (α =

---

[1] All Cronbach's alpha statistics for total scales and subscales were those calculated in this investigation.

.55), and Openness (α = .36), (Rammstedt, B. & John, O. P., 2007). The Rosenberg Self-Esteem Scale (RSES) is a 10-item measure with items rated on a 4-point Likert scale (α = .92), ranging from 1 = *strongly agree* to 4 = *strongly disagree* which measures global self-esteem. (Rosenberg, M, 1965). Participants also completed demographic questions such as age, gender, race, school year, and experience in playing TTRPGs. Open-ended items were also included in the post-survey, such as questions assessing participants' perceptions of the purpose and hypotheses of the study. Participants in the D&D group were also asked in the post-survey about the impact of the study on their social experiences and adjustment to college, whereas participants in the comparison group were asked only about their adjustment to college. In addition, participants were asked to complete an intermittent survey that asked open-ended questions on their general absorption and perceptions of the group and game.

Materials

Participants in the D&D condition were given the standard D&D materials to orient them to the TTRPG experience. Participants were also given an abbreviated version of the Wizards of the Coast™ D&D Basic Rules Handbook (2018) integrated with instructions on how to use the DnD Beyond™ app, a map detailing their environments, background history of the fantasy world, a Minifigure representing their character, and the preface of their upcoming adventure. Players were asked to download the free DnD Beyond™ app, where all their characters' actions, stats, and features were available. Participants were also given a physical copy of their character sheet and a 20-sided die (randomization of actions' or attacks' success); however, all actions could also be rolled through the DnD Beyond™ app. All materials used with the D&D group were piloted to ensure that they would function effectively in facilitating actual gameplay.

Procedure

I visited Introduction to Psychology and First Year Experience (FYE) classrooms to promote the study and presented two options for studies investigating first-year college students' experiences - one that provided an hour of research participation credit through an online survey (comparison group) and one that offered up to six hours of research participation credit through an online and in-person research experience characterized as a study of group and individual decision making in first-year college students (D&D group). Participants interested in the six-hour study signed up through SONA for one of the four available weekly groups/timeslots consisting of five one-hour sessions. Before participants attended their first D&D session, participants reviewed a consent form and completed the pre-intervention measures in Qualtrics (SCS-R, CSSS, SACQ, BFI-10, RSES, and demographics/TTRPG experience questions). At the end of the pre-intervention survey, participants were given the chance to develop their character, involving rank ordering their preferred race (e.g. Human, Dwarf, Elf, Dragonborn) and class (e.g. Wizard, Rouge, Paladin, Cleric, Barbarian). Consistent with D&D convention, participants were then assigned to one of their preferred classes in a way that promoted diversity in terms of class (abilities) and ability to fulfill party (group) roles, and participants' characters began at the same level regarding power. I acted as the Game Master for the five weekly D&D sessions, which consisted of running a modified version of *The Shadows of the Dusk Queen* (5th edition). Apart from regular gameplay, weekly reminder emails, and open email communication for D&D related questions, communication between the Game Master (researcher) and participants was limited throughout the study. Every player was required to be present in person and participate in a variety of collaborative gameplay scenarios, consisting of fantasy combat and role-playing for one hour a week, ultimately contributing to a collective narrative story. In addition, while there

were a few absences ($N = 3$, across all groups), there was nothing to warrant the removal of their data from the analysis as no D&D participant missed more than one session.. After completing the five weekly sessions, the D&D group completed a post-test of most of the same measures (SCS-R, CSSS, SACQ, RSES). In addition, during the post-survey participants were asked open-ended questions about their D&D experience and what aspects of the study were most beneficial to them.

The comparison group also signed up through a separate study listing in SONA. For up to one research credit hour, they completed the 30-minute pre-and-post surveys consisting of the same measures given to the D&D group, separated by five weeks, to reflect the timeline of the D&D group. The non-D&D group's consent form explained that the survey would collect information about student experiences in their first semester of college. At the end of the post-survey, participants in the comparison group were provided with a debriefing statement explaining the purpose of the study.

Participants in the D&D group were given the opportunity to continue for another three weekly D&D sessions and be entered into a raffle with the chance to win a $100 gift card. This extension allowed us to examine potential additional benefits within the D&D group for those who decided to continue to be a part of the D&D experience. Participants who continued for an additional 3 weeks of D&D gameplay were administered a second post-survey containing the same measures as the first post-survey.

In anticipation of the possible attrition that could happen throughout the five weeks, weekly emails were sent to all D&D participants reminding them of the importance of their participation, and the time, date, and place where the D&D session would occur. In addition, along with the third weekly reminder, an intermediate survey was sent out to assess interest (not

very interesting to extremely interesting), absorption in the D&D environment (never to always),

and relationship with other group members (terrible to delightful) on a five-point Likert scale. In

the case that participants dropped out, a standard narrative explanation was provided to the

remaining participants, such as "*The evil emanating from the EverShadow Forest has claimed*

another victim. The fear of whether you could be next creeps into your mind, but you shake it off

and continue on your adventure to save Lurra (the world the D&D campaign was set in).

CHAPTER 4

EXPLORING THE EFFECTS OF D&D ON COLLEGE STUDENTS

Preliminary Analyses

Only 28 out of 45 initial participants (62%) completed both the pre-and post-tests (excluded for not having post-test data or due to being unable to match post-test to pre-test data due to different codenames provided in the pre-and post-test). An independent samples t-test revealed that retained participants were not significantly different from excluded participants in terms of the CSSS, t (46) = -.22, p = .10, RSES, t (46) = 2.30, p = .60, and SCS-R, t (46) = -1.95, p = .357, SACQ Academic Adjustment, t (46) = 1.31, p = .771, SACQ Social Adjustment t(46) = 1.97, p = .59, SACQ Personal-Emotional Adjustment, t (46) = 1.18, p = .10, and SACQ Institutional Adjustment, t (46) = .70, p = .60 pretest data. However, those that were included (M = 18.20, SD = .362) were significantly younger than those that were excluded (M = 21.10, SD = 7.17) from the data analysis t (41) = -2.12, p < .001. The results of Chi-Squared Tests of Association show that there was no significant association between those excluded and not excluded in terms of gender identity, χ^2(4,48) = 2.50, p = .80 and ethnicity, χ^2(4,48) = 4.90, p = .302. Questions from the intermediary survey (collected during the study's midpoint) revealed participants' interest level in the D&D sessions, visualization of the environment being described, and relationship with the other members in the group. On average, participants reported being very interested in the D&D gameplay (M = 4.0, SD = .90), often being able to visualize the environment (M = 4.0, SD = 1.1), and described their relationship with other members in the D&D group as above average (M = 4.0, SD = .69).

Primary Analyses

A series of 2x2 (between by within group) ANOVAs were used to analyze group differences in changes in the dependent variables over time. On the CSSS, the results revealed a significant group by time interaction, F (1,26) = 6.50, p =.015, ηp^2 = .20. A repeated measure

ANOVA conducted separately by condition illustrated that participants who were in the D&D condition demonstrated a decrease in college stress from time 1 to time 2, $F(1,17) = 28.35$, p <.001, $\eta p^2 = .66$. Whereas, participants who were in the comparison condition reported similar levels of stress at both times, $F(1,17) = .001$, $p = .973$, $\eta p^2 = .00$. All means and standard deviations of the dependent variables for the D&D and comparison groups can be located in Table 1.

Using the total score for the SACQ, results revealed a significant interaction by time and group, $F(1,26) = 4.21$, $p = 05$, $\eta p^2 = .14$. There was a significance difference between changes in adjustment to college. A repeated measure ANOVA conducted separately by condition illustrated that participants who were in the comparison condition demonstrated a decrease in college adjustment from time 1 to time 2, $F(1,9) = 3.853$, p <.081, $\eta p^2 = .30$. While, the D&D group demonstrated a non-significant increase in college adjustment. On the SACQ Personal-Emotional Adjustment subscale, the results revealed a significant interaction by time and group, $F(1,26) = 5.00$, $p = .041.$, $\eta p^2 = .20$. A repeated measure ANOVA conducted separately by condition illustrated that participants who were in the comparison condition demonstrated a decrease in college personal-emotional adjustment from time 1 to time 2, $F(1,9) = 3.15$, $p = .109$, $\eta p^2 = .26$. While, the D&D group demonstrated a non-significant increase in personal-emotional adjustment. However, there were not any significant group by time interactions for the SACQ academic, $F(1,26) = .002$, $p = .965$, $\eta p^2 = .000$, institutional, $F(1,26) = 2.20$, $p = .20$, $\eta p^2 = .08$, and social adjustment subscales, $F(1,26) = .06$, $p = .810$, $\eta p^2 = .002$. In addition, there were not any significant group by time interactions for the RSES, $F(1,26) = 2.30$, $p = .144$, $\eta p^2 = .08$, and SCS-R, $F(1,26) = 1.10$, $p = .303$, $\eta p^2 = .041$ measure. See Tables 2-9 for ANOVA results for D&D versus comparison group changes in the dependent measures over five weeks. Figures 1-8 also illustrate the significant group by time interactions.

Additional Analyses

Data from the D&D participants who continued for the full eight weeks were examined using a series of repeated measures ANOVAs to analyze within group changes in the dependent variables over three points in time to examine whether participants who continued longer in the intervention would demonstrate greater benefits. Using the total score for the SACQ, results revealed a significant main effect of time, $F(2,12) = 5.0$, $p = .030$, $\eta p^2 = .50$. Pairwise comparisons using Bonferroni correction revealed that participants who continued in the D&D group for eight weeks demonstrated significantly greater social adjustment from time 1 to time 3, $p = .028$. On the SACQ Social Adjustment subscale, the results revealed a significant main effect of time, $F(2,12) = 8.9$, $p = .004$, $\eta p^2 = .59$. Pairwise comparisons using Bonferroni correction revealed that participants who continued in the D&D group for eight weeks demonstrated significantly greater social adjustment from time 1 to time 3, $p = .004$. The SACQ Institutional Adjustment subscale, the results revealed a significant main effect of time, $F(2,12) = 8.60$, $p = .005$, $\eta p^2 = .59$. Pairwise comparisons using Bonferroni correction revealed that participants who continued in the D&D group for eight weeks demonstrated significantly greater institutional adjustment from time 1 to time 3, $p = .004$. However, SACQ Academic subscale, revealed no significant main effect of time, $F(2,12) = 2.0$, $p = .25$, $\eta p^2 = .43$. In addition, the SACQ Personal-Emotional Adjustment subscale, revealed no significant main effect of time, $F(2,12) = 1.50$, $p = .28$, $\eta p^2 = .19$.

The SCS-R results revealed a significant main effect of time, $F(2,12) = 11.00$, $p = .002$, $\eta p^2 = .64$. Pairwise comparisons using Bonferroni correction revealed that participants who continued in the D&D group for eight weeks demonstrated significantly greater social connection from time 1 to time 3, $p = .011$. The CSSS results revealed a significant main effect of time, $F(2,12) = 7.0$, $p = .010$, $\eta p^2 = .54$. Pairwise comparisons using Bonferroni correction revealed that participants who continued in the D&D group for eight weeks demonstrated

significantly greater stress reduction from time 1 to time 3, $p = .043$. Meanwhile, the RSES results revealed that there was no significant main effect of time, $F(2,12) = 3.9$, $p = .052$, $\eta p^2 = .39$. Figures 4-8 illustrate the dependent variables demonstrating significant changes over time for the D&D participants who remained in the study for 8 weeks. The open-ended questions asked of participants in the D&D group in the post-survey about D&D's influence on other social activities and adjustment to college revealed a variety of common themes (Table 10). Responses included being able to step out of their comfort zones, growing closer to other group members, influencing personal lives, and fostering connections with friends and family. Participants reflected on how playing D&D has not only enhanced their social interactions but also led to increased communication and bonding both within and outside the gaming sessions. Responses discussing the influence on their adjustment to college mention a positive impact of engaging in activities or events on personal growth, social connections, and overall well-being. Also, participants wrote about how D&D has helped them become more comfortable around strangers and peers, facilitated interactions with people they wouldn't have otherwise engaged with, reduced stress, increased feelings of accomplishment and happiness, fostered new friendships and friend groups, provided an enjoyable escape from everyday stresses, and encouraged self-expression and communication skills development.

Exploratory Analysis

Linear regression analysis was used to test if past experience with TTRPGs, self-reported creativity, or BPI scales for extroversion, agreeableness, or openness significantly predicted effectiveness of the intervention for D&D participants in regard to change in the dependent variables. With regard to RSES scores, results of the regression indicated the predictors did not significantly predict change in self-esteem among D&D participants, $F(5, 12) = 1.12$, $p = .40$, $R^2 = .32$, $R^2_{Adjusted} = .03$. These variables also did not significantly predict change in college stress (CSSS) among D&D participants, $F(5, 12) = 1.33$, $p = .32$, $R^2 = .38$, $R^2_{Adjusted} = .09$.

In terms of the SACQ subscales, the predictors did not significantly predict change in academic adjustment, $F(5, 12) = 1.40$, $p = .30$, $R^2 = .37$, $R^2_{Adjusted} = .10$, social adjustment, $F(5, 12) = .43$, $p = .82$, $R^2 = .15$, $R^2_{Adjusted} = -.20$, personal-emotional adjustment, $F(5, 12) = .72$, $p = .63$, $R^2 = .23$, $R^2_{Adjusted} = -.09$), or institutional adjustment among D&D participants, $F(5, 12) = .57$, $p = .72$, $R^2 = .19$, $R^2_{Adjusted} = -.15$). Moreover, these variables did not significantly predict change in social connection (SCS-R) among D&D participants, $F(5, 12) = 1.50$, $p = .26$, $R^2 = .38$, $R^2_{Adjusted} = .13$.

CHAPTER 5

CONCLUSIONS

The present study investigated the effects of participation in Dungeons and Dragons on various outcomes among first-semester, first-year college students including social connection, perceived stress, self-esteem, and adjustment to college. The findings revealed significant differences between the D&D group and the comparison group in terms of positive changes in college stress and adjustment to college. Specifically, there was a significant decrease in D&D participants' stress and an increase in their personal-emotional adjustment to college, as compared to the comparison group of first-semester, first-year college students.

In addition, D&D participants who continued for the full eight weeks demonstrated a significant positive effect on their social connection, and social and institutional adjustment to college, but only when comparing those measures from the beginning (time 1) to the end (time 3) of their eight weeks of D&D participation. However, there were no significant differences between the D&D group and the comparison group in terms of self-esteem and the SACQ academic adjustment subscale.

These findings partially support the hypothesis that engaging in D&D gameplay can positively influence adjustment to college and reduce perceived stress among first-year college students. Thus, the study contributes to the understanding of the potential benefits of incorporating D&D into interventions aimed at promoting college adjustment and well-being.

The results of this study align with and extend previous research demonstrating the positive effects of D&D gameplay on various psychological and social outcomes. Previous studies have highlighted the therapeutic potential of D&D in promoting social skills, emotional expression, and problem-solving abilities among diverse populations, including children,

adolescents and individuals with mental health concerns (Rosselet & Stauffer, 2013; Zayas & Lewis, 1986). The findings further support the notion that D&D can serve as a valuable tool for facilitating social connection and enhancing emotional well-being, particularly during transitional periods such as the transition to college (Abbott et al., 2022; Adams, 2011).

In addition, these results could address the findings of psychological distress caused by first-year students transitioning to college (Larcombe, 2016). Specifically, the findings that D&D facilitated college adjustment could help relieve feelings of stress caused by this transition process. Furthermore, the results gathered from the extended group demonstrated greater social connection that could alleviate feelings of loneliness that would eventually lead to burnout and negative effects on academic motivation and academic performance (Stoliker & Lafreniere, 2015).

Despite the promising finding, several limitations should be considered when interpreting the results of this study. First, the relatively small sample size may limit the generalizability of the findings and increase the risk of Type II error. Additionally, the lack of a randomized controlled design and the absence of long-term follow-up assessments limit the ability to establish causal relationships between D&D participation and the observed outcomes. Furthermore, the reliance on self-report measures may introduce the potential for biases (particularly participant expectations) to influence results. However, it should be noted that, in response to questions on the post-survey about the purpose of the study, only a few participants in the D&D group speculated about the effect of participation in the group on one or more of the dependent variables of interest. Also, the additional benefits that occurred (i.e., additional significant findings) for the extended group could be due to a self-selection bias. In other words, participants who benefitted from the D&D experience the most were most likely to remain in the

group and are, therefore, perhaps different from the other D&D group members (and, college students in general). Despite these limitations, this study provides valuable preliminary evidence supporting the potential benefits of D&D gameplay for college students' well-being.

Further research should aim to address the limitations of the current study by employing larger samples, randomized controlled designs, and longer follow-up periods to assess the sustained effects of D&D participation on college adjustment and perceived stress. Additionally, qualitative research methods, such as in-depth interviews could help elucidate the subjective experiences and perceptions of participants regarding the impact of D&D on their social and emotional well-being. The next step would be to compare the efficacy of D&D as an intervention, as compared to another group activity. D&D has also been increasingly played online since the COVID-19 pandemic, so it would also be beneficial to examine the benefits of D&D through an online format.

From a practical standpoint, educators, counselors, and mental health professionals may consider integrating D&D or similar tabletop role-playing games into college orientation programs, counseling services, or peer support groups to foster social connection, resilience, and coping skills among incoming students. Astin and Tinto speak to the importance of revamping first-year experiences to focus on collaborative learning. In addition, the authors emphasized the importance of diverging away from traditional pedagogical approaches to better promote motivation and behavior. That is why providing opportunities for students to engage in collaborative storytelling and problem-solving activities in a supportive and inclusive environment may help mitigate the negative effects of stress and loneliness associated with the college transition. Additionally, promoting awareness and destigmatizing leisure-based

interventions such D&D could help increase their acceptance and accessibility as adjunctive tools for promoting mental health and well-being among college populations.

In summary, while further research is needed to fully understand the therapeutic potential of D&D gameplay for college students, the findings suggest that incorporating recreational activities such as D&D into college support services may offer a promising avenue for promoting social connection, reducing stress, and enhancing adjustment to the college environment. By harnessing the immersive and collaborative nature of tabletop role-playing games, educators and mental health professionals can empower students to cultivate resilience and thrive in the face of academic and interpersonal challenges.

References

Abbott M.S, Stauss K.A, Burnett A.F. Table-top role-playing games as a therapeutic intervention with adults to increase social connectedness. *Social Work with Groups.* 2022;45(1):16–31. doi: 10.1080/01609513.2021.1932014.

Abyeta, S., & Forest, J. (1991). Relationship of Role-Playing Games to Self-Reported Criminal Behaviour. Psychological Reports, 69(3_suppl), 1187–1192. https://doi.org/10.2466/pr0.1991.69.3f.1187

Adams, A. S. (2013). Needs Met Through Role-Playing Games: A Fantasy Theme Analysis of Dungeons & Dragons. *Kaleidoscope: A Graduate Journal of Qualitative Communication Research*, *12*, 69–86.

Astin, A. W. (1984). Student involvement: A developmental theory for higher education. Journal of College Student Personnel, 25(4), 297–308.

Bayram, N., & Bilgel, N. (2008). The prevalence and socio-demographic correlations of depression, anxiety and stress among a group of university students. Social psychiatry and psychiatric epidemiology, 43(8), 667–672. https://doi.org/10.1007/s00127-008-0345-x

Bebeau M. J. & Thoma S. J. (2003). Guide for DIT-2. Unpublished Manuscript, University of Minnesota.

Ben-Ezra, M., Lis, E., Błachnio, A. et al. Social Workers' Perceptions of the Association

    Between Role Playing Games and Psychopathology. Psychiatr Q 89, 213–218 (2018).

    https://doi.org/10.1007/s11126-017-9526-7

Bisconer, S. W., & McGill, M. B. (2023). Undergraduate students and the COVID-19-19

    pandemic: A look-back at first-year constructs of psychological adjustment, implications

    for clinicians and college administrators. Professional Psychology: Research and

    Practice, 54(1), 83–92. https://doi.org/10.1037/pro0000490

Blackmon W. D. (1994). Dungeons and Dragons: the use of a fantasy game in the

    psychotherapeutic treatment of a young adult. American journal of psychotherapy, 48(4),

    624–632. https://doi.org/10.1176/appi.psychotherapy.1994.48.4.624

Bormann, E. G. (1972). Fantasy and rhetorical vision: the rhetorical criticism of social reality. Q.

    J. Speech 58, 396–407. doi: 10.1080/00335637209383138

Carroll, J. L., & Carolin, P. M. (1989). Relationship between Game Playing and Personality.

    Psychological Reports, 64(3), 705–706. https://doi.org/10.2466/pr0.1989.64.3.705

Carter, R., & Lester, D. (1998). Personalities of players of Dungeons and Dragons. Psychological

    reports, 82(1), 182. https://doi.org/10.2466/pr0.1998.82.1.182

CBS News. (2020, Feb 26). *What was the Satanic Panic?* [Video]. Youtube.

  https://www.youtube.com/watch?v=plEImKEIRm8

Chung, T. S. (2013). Table-top role playing game and creativity. Thinking Skills and Creativity,

  8, 56–71.

Copeland, W. E., McGinnis, E., Bai, Y., Adams, Z., Nardone, H., Devadanam, V., Rettew, J., &

  Hudziak, J. J. (2021). Impact of COVID-19-19 pandemic on college student mental

  health and wellness. Journal of the American Academy of Child & Adolescent

  Psychiatry, 60(1), 134–141. https://doi.org/10.1016/j.jaac.2020.08.466

Davis, M. H. (1983). Measuring individual differences in empathy: Evidence for a

  multidimensional approach. Journal of Personality and Social Psychology, 44, 113–

  126.

Dear, W. (1984). The Dungeon Master | The Disappearance of James Dallas Egbert III (1st

  edition). Houghton Mifflin.

DeRenard, L. A., & Kline, L. M. (1990). Alienation and the game Dungeons and Dragons.

  Psychological reports, 66(3 Pt 2), 1219–1222.

  https://doi.org/10.2466/pr0.1990.66.3c.1219

Douse, N. A., & McManus, I. C. (1993). The personality of fantasy game players. *British*

Journal of Psychology, 84(4), 505–509.

https://doi.org/10.1111/j.2044-8295.1993.tb02498

Eisenberg, D., Gollust, S. E., Golberstein, E., & Hefner, J. L. (2007). Prevalence and correlates

of depression, anxiety, and suicidality among university students. The American journal

of orthopsychiatry, 77(4), 534–542. https://doi.org/10.1037/0002-9432.77.4.534

Elharake, J. A., Akbar, F., Malik, A. A., Gilliam, W., & Omer, S. B. (2022). Mental Health

Impact of COVID-19-19 among Children and College Students: A Systematic Review.

Child psychiatry and human development, 1–13. Advance online publication.

https://doi.org/10.1007/s10578-021-01297-1

Frimer, J. A., & Walker, L. J. (2009). Reconciling the self and morality: An empirical model of

moral centrality development. Developmental Psychology, 45,1669-1681.

Goffman, E. (1961). Encounters : two studies in the sociology of interaction /. Bobbs-Merrill.

Hotez, E., Gragnani, C. M., Fernandes, P., Rosenau, K. A., Wang, K., Chopra, A., Chow, K.,

Chung, A., Khorasani, L., & Kuo, A. A. (2022). A mixed methods investigation of

college student mental health during the first year of the COVID-19-19 pandemic.

Journal of American college health : J of ACH, 1–8. Advance online publication.

https://doi.org/10.1080/07448481.2022.2089842

Hughes, G. (2021, July 3). COVID-19-19: 'Dungeons and Dragons got us through lockdown'.

BBC News. https://www.bbc.com/news/uk-wales-57636378

Jaffe, R. (1981). Mazes and Monsters (1st edition). Delacorte Press (USA) & Hodder &

Stoughton Ltd. (UK).

Larcombe, W., Finch, S., Sore, R., Murray, C.M., Kentish, S.E., Mulder, R.A., Lee-Stecum, P.,

Baik, C., Tokatlidis, O., & Williams, D.A. (2016). Prevalence and socio-demographic

correlates of psychological distress among students at an Australian university. Studies in

Higher Education, 41, 1074 - 1091.

Leithart, P. J., & Grant, G. (1987) A Christian Response to Dungeons and Dragons: The

Catechism of the New Age, Second edition; Fort Worth, TX: Dominion Press.

Lin, S.-H., & Huang, Y.-C. (2014). Life stress and academic burnout. Active Learning in Higher

Education, 15(1), 77–90. https://doi.org/10.1177/1469787413514651

Lis, E., Chiniara, C., Biskin, R., & Montoro, R. (2015). Psychiatrists' perceptions of role-playing

games. Psychiatric Quarterly, 86(3), 381–384. https://doi.org/10.1007/s11126-015-9339-5

Raaper, R. and Brown, C. (2020), "The COVID-19-19 pandemic and the dissolution of the

university campus: implications for student support practice", Journal of Professional

Capital and Community, Vol. 5 No. 3/4, pp. 343-349.

https://doi.org/10.1108/JPCC-06-2020-0032

Rammstedt, B. & John, O. P. (2007). Measuring personality in one minute or less:

A 10 item short version of the Big Five Inventory in English and German. Journal of

Research in Personality, 41, 203‑212.

Rest J. R., Narvaez D., Thoma S. J., Bebeau M. J. (1999b). Postconventional Moral Thinking: A

Neo-Kohlbergian Approach, Mahwah: Lawrence Erlbaum Press.

Rivers, A., Wickramasekera, I. E., 2nd, Pekala, R. J., & Rivers, J. A. (2016). Empathic Features '

and Absorption in Fantasy Role-Playing. The American journal of clinical hypnosis,

58(3), 286–294. https://doi.org/10.1080/00029157.2015.1103696

Rosenthal, G. T., Soper, B., Folse, E. J., & Whipple, G. J. (1998). Role-play gamers and National

Guardsmen compared. Psychological reports, 82(1), 169–170.

https://doi.org/10.2466/pr0.1998.82.1.169

Rosselet, J. G., & Stauffer, S. D. (2013). Using group role-playing games with gifted children

and adolescents: A psychosocial intervention model. *International Journal of Play*

Therapy, 22(4), 173–192. https://doi.org/10.1037/a0034557

Simón, A. (1987), Emotional stability pertaining to the game of Dungeons & Dragons. Psychol.

Schs., 24: 329-332. https://doi.org/10.1002/1520-6807(198710)24:4

Stoliker, B.E., & Lafreniere, K. (2015). The Influence of Perceived Stress, Loneliness, and
Learning Burnout on University Students' Educational Experience. College student
journal, 49, 146-160.

Tinto, V. (1999). Taking Retention Seriously: Rethinking the First Year of College. NACADA
Journal, 19, 5-9.

Winerman, L. (2017, September 1). By the numbers: Stress on campus. *Monitor on
Psychology*, *48*(8). https://www.apa.org/monitor/2017/09/numbers

Wolfe, W. L. (2021). Dispositional Gratitude Affects College Student Stress and Depression
from COVID-19-19 Pandemic: Mediation through Coping. North American Journal of
Psychology, 23(4), 723.
https://link.gale.com/apps/doc/A688214331/AONE?u=anon~90384830&sid=googleScho
lar&xid=21f25350

Wright, J. C., Weissglass, D. E., & Casey, V. (2020). Imaginative Role-Playing as a Medium for
Moral Development: Dungeons & Dragons Provides Moral Training. Journal of
Humanistic Psychology, 60(1), 99–129. https://doi.org/10.1177/0022167816686263

Zayas, L. H., & Lewis, B. H. (1986). Fantasy roleplaying for mutual aid in children's groups: A
case illustration. Social Work with Groups, 9(1), 53–66.

Appendix A: Consent Form - D&D Group

GEORGIA
SOUTHERN
UNIVERSITY

Georgia Southern University

Department of Psychology

Informed Consent
For
College Student Experiences and Adjustment During the First Semester

1. Researchers: Alexander Peralta (Experimental Psychology | Masters Student) is the primary
investigator of this study. He will be mentored by a Professor at Georgia Southern University, Dr.
Wendy Wolfe (Psychology Department). We are conducting this investigation to understand
individual and group decision making using table-top role-playing games.

2. Purpose of the Study: The purpose of this research is to examine group and individual decision
making in first-year college students, and gather information about variables influencing group
dynamics and adjustment to college.

3. Procedures to be followed: You will select the weekly time slot when you will be able to
attend the in-person group game sessions and then you will complete a survey in Qualtrics. The
survey has been anonymized such that no identifying information is collected about respondents.
However, you will be prompted to create a code name (known only to you) that will allow your
initial survey responses to be connected to later survey responses. The survey asks about your
demographic information, experiences with college life, and about other aspects of yourself (e.g.,
personality traits) and preferences (e.g., recreation experiences). You will then attend five
one-hour group game sessions across the next five weeks, and finally you will take a follow-up
survey consisting of most of the same measures as the initial survey. In addition you will have

the optional opportunity to continue the game for an additional five weeks followed by another survey consisting of the same measures as the first follow-up survey.

4.Discomforts and Risks: This study includes little to no risk and is comparable to risks experienced on a daily basis. However, table-top role-playing games often deal with fantasy violence that could make individuals feel uneasy, and it is possible for participants to feel some level of embarrassment since such games require them to participate in some form of role-play throughout the course of the game. If you end up experiencing any significant distress due to participating in the study, contact the Counseling Center if you wish to seek assistance (912-478-5541) Since the study is in-person precautions will be taken in accordance with current Georgia Southern policies to reduce the risk of the spread of communicable diseases (including COVID-19-19). You have the right to request specific COVID-19-19 safety measures and we will accommodate as many as possible. We will tell you before you begin participation in any measures we cannot accommodate. Consenting to participate in this research indicates your acknowledgement of the risk of disease transmission. You also acknowledge your requirement to notify the researchers in the event that you test positive for COVID-19 within 5 days prior, are symptomatic prior to or at the time of participation or receive a positive COVID-19 test within 5 days after participation.

5. Benefits: a. The benefits to you as a participant include increased insight into decision making and problem solving in a group setting. b. The benefits to society include getting a better understanding of the decision making and problem solving processes as part of adjustment to college life in first-year students.

6. Duration/Time required from the participant: six-hours across a five week period.

7. Statement of Confidentiality: Only those directly involved in the study will have access to your data. Weekly session reminders will be sent to participants' university email. Survey data collected from the pre-survey, post-survey, and the weekly absorption surveys will be identified via codenames that you generate for yourself. All anonymized data downloaded for analysis will be maintained on a password protected computer. When the study results are published, no identifiable information will be used when discussing any results and data. You will not be identified by name in the data set or any reports using information obtained from this study, and your confidentiality as a participant in this study will remain secure.

8. Future use of data: Deidentified or coded data from this study may be placed in a publicly available repository for study validation and further research. You will not be identified by name in the data set or any reports using information obtained from this study, and your confidentiality as a participant in this study will remain secure. Subsequent uses of records and data will be subject to standard data use policies which protect the anonymity of individuals and institutions.

9. Right to Ask Questions: You have the right to ask questions and have those questions answered. If you have questions about this study, please contact Alexander Peralta at 912-484-5023 and ap22412@georgiasouthern.edu. For questions concerning your rights as a research participant, contact Georgia Southern University Institutional Review Board at 912-478-5465 or irb@georgiasouthern.edu.

10. Compensation: If you participate in this study you will receive six research participation credits (1 hour: total survey completion time plus five 1-hour in-person game sessions) that will be awarded through sona-systems and can be used to fulfill introduction to psychology course requirements. In addition, First-Year Experience (FYE) instructors will likely also incentivize student participation via course credit in some form of extra/course credit.

11. Voluntary Participation: You have every right to not participate in this research, and you may end your participation at any time by telling the person in charge. In addition you don't have to answer any questions you do not want to answer. There will be no penalty for deciding not to participate in the study; you may decide at any time that you don't want to participate any further and may withdraw without penalty or retribution. Your willingness to participate will not negatively impact your course grade nor jeopardize your current or future relationship with Georgia Southern University.

12. Because the validity of the results of the study could be affected if the purpose of the study is fully divulged to you prior to your participation, the full purpose and hypothesis of the study cannot be explained to you at this time. You will have the opportunity to receive a complete explanation of the study's purpose following your participation in the study.

There is one exception to confidentiality that we need to make you aware of. In certain research studies, it is our ethical responsibility to report situations of child or elder abuse, child or elder neglect, or any life-threatening situation to appropriate authorities. However, we are not seeking this type of information in our study, nor will you be asked questions about these issues.

13. You must be 18 years of age or older to consent to participate in this research study, and be a first year college student attending your first semester in college. You will be given a copy of this consent form to keep for your records.

This project has been reviewed and approved by the GSU Institutional Review Board under tracking number H24001. Title of Project: College Student Experiences and Adjustment During the First Semester Principal Investigator: Alexander W. Peralta, (912) 484-5023, ap22412@georgiasouthern.edu, Research Advisor: Wendy Wolfe, 912-344-2955, wlwolfe@georgiasouthern.edu .

Appendix B: Consent Form - Non-D&D Group

GEORGIA SOUTHERN UNIVERSITY

Georgia Southern University

_____

Department of Psychology

_____

Informed Consent

for

College Student Experiences and Adjustment During the First Semester: A Survey Study.

1. Researchers: Alexander Peralta (Experimental Psychology | Masters Student) is the primary investigator of this study. He will be mentored by a Professor at Georgia Southern University, Dr. Wendy Wolfe. We are conducting this investigation to examine college student experience throughout their first semester of college.

2. Purpose of the Study: The purpose of this research is to examine social development of first-year college students throughout their first semester of college.

3. Procedures to be followed: You will complete a survey in Qualtrics. The survey has been anonymized such that no identifying information is collected about respondents. However, you will be prompted to create a code name (known only to you) that will allow your initial survey responses to be connected to later survey responses. The survey asks about your basic demographic information and current/past table-top role-playing experiences. You will also complete questionnaires assessing variables related to social development and college adjustment, in general. You will complete a second survey five weeks later with similar items as the initial survey. Each survey is expected to take no more than 30 minutes to complete.

4.Discomforts and Risks: This study includes little to no risk and is comparable to risks experienced on a daily basis. However, it is possible that reflecting on your college experience could bring upon feelings of stress and anxiety.

5. Benefits:
     a. The benefits to you as a participant include increased insight into your social
     development and adjustment to college.
     b. The benefits to society include getting a better understanding of the
     adjustment period of first-year college students and the variables that influence
     college adjustment.

6. Duration/Time required from the participant: one hour across five weeks.

7. Statement of Confidentiality: Only those directly involved in the study will have access to your data. In addition, any identifiable information will be concealed. All anonymized data downloaded for analysis will be maintained on a password protected computer. When the study is published no identifiable information will be used when discussing any results and data. You will not be identified by name in the data set or any reports using information obtained from this study, and your confidentiality as a participant in this study will remain secure.

8. Future use of data: Deidentified or coded data from this study may be placed in a publicly available repository for study validation and further research. You will not be identified by name in the data set or any reports using information obtained from this study, and your confidentiality as a participant in this study will remain secure. Subsequent uses of records and data will be subject to standard data use policies which protect the anonymity of individuals and institutions.

9. Right to Ask Questions: You have the right to ask questions and have those questions answered. If you have questions about this study, please contact Alexander Peralta at 912-484-5023 and ap22412@georgiasouthern.edu. For questions concerning your rights as a research participant, contact Georgia Southern University Institutional Review Board at 912-478-5465 or irb@georgiasouthern.edu.

10. Compensation: If you participate in this study you will receive one hour of research participation credit (30 minute initial survey and 30 minute follow-up survey) that will be awarded through sona-systems and can be used to fulfill introduction to psychology course requirements. In addition, FYE instructors will likely also incentivize student participation via course credit in some form of extra/course credit.

11. Voluntary Participation: You have every right to not participate in this research, and you may end your participation at any time by telling the person in charge. In addition you don't have to

answer any questions you do not want to answer. There will be no penalty for deciding not to participate in the study; you may decide at any time that you don't want to participate any further and may withdraw without penalty or retribution. Your willingness to participate will not negatively impact your course grade nor jeopardize your current or future relationship with Georgia Southern University.

12. Because the validity of the results of the study could be affected if the purpose of the study is fully divulged to you prior to your participation, the purpose and hypothesis of the study cannot be explained to you at this time. You will have the opportunity to receive a complete explanation of the study's purpose following your participation in the study.

There is one exception to confidentiality that we need to make you aware of. In certain research studies, it is our ethical responsibility to report situations of child or elder abuse, child or elder neglect, or any life-threatening situation to appropriate authorities. However, we are not seeking this type of information in our study, nor will you be asked questions about these issues. All information will be treated confidentially.

13. You must be 18 years of age or older to consent to participate in this research study, and be a first year college student attending your first semester in college. You will be given a copy of this consent form to keep for your records.

This project has been reviewed and approved by the GSU Institutional Review Board under tracking number H24001. Title of Project: College Student Experiences and Adjustment During the First Semester: A Survey Study Principal Investigator: Alexander W. Peralta, (912) 484-5023, ap22412@georgiasouthern.edu, Research Advisor: Wendy Wolfe, 912-344-2955, wlwolfe@georgiasouthern.edu .

Appendix C: Consent Form: Extended Group

Georgia Southern University

Department of Psychology

Informed Consent

For

Extension: College Student Experiences and Adjustment During the First Semester

1. Researchers: Alexander Peralta (Experimental Psychology | Masters Student) is the primary investigator of this study. He will be mentored by a Professor at Georgia Southern University, Dr. Wendy Wolfe (Psychology Department). We are conducting this investigation to understand individual and group decision making using table-top role-playing games.

2. Purpose of the Study Extension: The purpose of this research is to examine group and individual decision making in first-year college students throughout a prolonged period of time, and gather information about variables influencing group dynamics and adjustment to college.

3. Procedures to be followed: After the completion of the initial five weekly sessions, there will be an optional opportunity to continue the game for an additional three weeks followed by another survey consisting of the same measures as the first follow-up survey.

4.Discomforts and Risks: This study includes little to no risk and is comparable to risks experienced on a daily basis. However, table-top role-playing games often deal with fantasy violence that could make individuals feel uneasy, and it is possible for participants to feel some level of embarrassment since such games require them to participate in some form of role-play throughout the course of the game. If you end up experiencing any significant distress due to

participating in the study, contact the Counseling Center if you wish to seek assistance (912-478-5541)

Since the study is in-person precautions will be taken in accordance with current Georgia Southern policies to reduce the risk of the spread of communicable diseases (including COVID-19-19). You have the right to request specific COVID-19-19 safety measures and we will accommodate as many as possible. We will tell you before you begin participation in any measures we cannot accommodate. Consenting to participate in this research indicates your acknowledgement of the risk of disease transmission. You also acknowledge your requirement to notify the researchers in the event that you test positive for COVID-19 within 5 days prior, are symptomatic prior to or at the time of participation or receive a positive COVID-19 test within 5 days after participation.

5. Benefits: a. The benefits to you as a participant include increased insight into decision making and problem solving in a group setting. b. The benefits to society include getting a better understanding of the decision making and problem solving processes as part of adjustment to college life in first-year students.

6. Duration/Time required from the participant: three-hours across a three week period and a 30 minute post-survey.

7. Statement of Confidentiality: Only those directly involved in the study will have access to your data. Weekly session reminders will be sent to participants' university email. Survey data collected from the pre-survey, post-survey, and the weekly absorption surveys will be identified via codenames that you generate for yourself. All anonymized data downloaded for analysis will be maintained on a password protected computer. When the study results are published, no identifiable information will be used when discussing any results and data. You will not be identified by name in the data set or any reports using information obtained from this study, and your confidentiality as a participant in this study will remain secure.

8. Future use of data: Deidentified or coded data from this study may be placed in a publicly available repository for study validation and further research. You will not be identified by name in the data set or any reports using information obtained from this study, and your confidentiality as a participant in this study will remain secure. Subsequent uses of records and data will be subject to standard data use policies which protect the anonymity of individuals and institutions.

9. Right to Ask Questions: You have the right to ask questions and have those questions answered. If you have questions about this study, please contact Alexander Peralta at 912-484-5023 and ap22412@georgiasouthern.edu. For questions concerning your rights as a research participant, contact Georgia Southern University Institutional Review Board at 912-478-5465 or irb@georgiasouthern.edu.

10. Compensation: If you participate in this study you will automatically be entered into a raffle to win a $100 gift card. If you elect not to participate in this study extension and would still like to be entered into the raffle, simply contact Alexander W. Peralta at ap22412@georgiasouthern.edu and state that you would like to be entered.

11. Voluntary Participation: You have every right to not participate in this research, and you may end your participation at any time by telling the person in charge. In addition you don't have to answer any questions you do not want to answer. There will be no penalty for deciding not to participate in the study; you may decide at any time that you don't want to participate any further and may withdraw without penalty or retribution. Your willingness to participate will not negatively impact your course grade nor jeopardize your current or future relationship with Georgia Southern University.

12. Because the validity of the results of the study could be affected if the purpose of the study is fully divulged to you prior to your participation, the full purpose and hypothesis of the study cannot be explained to you at this time. You will have the opportunity to receive a complete explanation of the study's purpose following your participation in the study.

There is one exception to confidentiality that we need to make you aware of. In certain research studies, it is our ethical responsibility to report situations of child or elder abuse, child or elder neglect, or any life-threatening situation to appropriate authorities. However, we are not seeking this type of information in our study, nor will you be asked questions about these issues.

13. You must be 18 years of age or older to consent to participate in this research study, and be a first year college student attending your first semester in college. You will be given a copy of this consent form to keep for your records.

This project has been reviewed and approved by the GSU Institutional Review Board under tracking number H24001. Title of Project: College Student Experiences and Adjustment During the First Semester. Principal Investigator: Alexander W. Peralta, (912) 484-5023, ap22412@georgiasouthern.edu, Research Advisor: Wendy Wolfe, 912-344-2955, wlwolfe@georgiasouthern.edu.

Appendix D: Demographic Questions

Age (in years)

_____

Current gender identity

   o Male (1)

   o Female (2)

   o Transgender Male (3)

   o Transgender Female (4)

   o Non-binary (5)

   o Other (6)

   o Prefer not to say (7)

What of the following best describe you?

   o American Indian or Alaska Native (1)

   o Asian (2)

   o Black or African-American (3)

   o Native Hawaiian or Pacific Islander (4)

   o White (5)

   o Hispanic/Latinx (6)

   o Biracial/Multiracial (7)

Appendix F: Pre-Survey D&D Open Ended Questions

Do you have any experience playing table-top role-playing games?

◯ No (1)

◯ Yes (2)

If yes, in what capacity have you played table-top role-playing games and how often?

	Never (1)	Sometimes (2)	About half the time (3)	Most of the time (4)	Always (5)
Dungeon Master(DM) / Game Master (GM) (1)	◯	◯	◯	◯	◯
Player Character (PC) (2)	◯	◯	◯	◯	◯

If yes, for how long (days, weeks, months, or years)?

_____

Are you currently participating in any ongoing social group activities (e.g., athletic team(s), video games, fitness class (crossfit), study groups)?

◯ No (21)

◯ Yes (22)

If yes, for how long (days, weeks, months, or years)?

_____

If yes, which ones?

_____

`Please rate your level of creativity.

0   10 20 30 40 50 60 70 80 90 100

Creativity Level	

In what aspects of your life are you allowed to express your creativity?

_____

Appendix E: Open Ended Questions - Post-Survey D&D Group

Q34 Has this study, in any capacity, influenced your other social group activities?

○ No (21)

○ Yes (22)

Q31 If so, in what way?

_____

Q35 Has this study, in any capacity, influenced your adjustment to college?

○ No (1)

○ Yes (2)

Q36 If so, in what way?

_____

Q38 What could the university have done to improve your adjustment to college?

_____

Q40 What could you have done to improve your adjustment to college?

_____

Q41 What do you think the hypothesis of this study was?

_____

Q42 What do you think the purpose of this study was?

_____

Q47 Why did you decide to extend your participation?

_____

Appendix G: Pre-survey Comparison Group Open Ended Questions

Do you have any experience playing table-top role-playing games?

◯ No (1)

◯ Yes (2)

If yes, in what capacity (Game Master, Player Character or both) and how often?

	Never (2)	Sometimes (3)	About half the time (4)	Most of the time (5)	Always (6)
Dungeon Master (DM)/ Game Master (GM) (1)	◯	◯	◯	◯	◯
Player Character (PC) (2)	◯	◯	◯	◯	◯

If yes, for how long (days, weeks, months, years)?

_____

 Are you currently participating in any ongoing social group activities (e.g., athletic team(s), video games, fitness class (crossfit), study groups)?

◯ No (1)

◯ Yes (2)

If yes, for how long (days, weeks, months, years)?

_____

If yes, which ones?

_____

Please rate your level of creativity.

0   10 20 30 40 50 60 70 80 90 100

Rate out of 1-100 ()	

In what aspects of your life are you allowed to express your creativity?

_____

Appendix H: Pre-Survey Open-Ended Questions

Do you have any experience playing table-top role-playing games?

◯ No (1)

◯ Yes (2)

If yes, in what capacity (Game Master, Player Character or both) and how often?

	Never (2)	Sometimes (3)	About half the time (4)	Most of the time (5)	Always (6)
Dungeon Master (DM)/ Game Master (GM) (1)	◯	◯	◯	◯	◯
Player Character (PC) (2)	◯	◯	◯	◯	◯

If yes, for how long (days, weeks, months, years)?

_____

Are you currently participating in any ongoing social group activities (e.g., athletic team(s), video games, fitness class (crossfit), study groups)?

○ No (1)

○ Yes (2)

If yes, for how long (days, weeks, months, years)?

_____

If yes, which ones?

_____

Please rate your level of creativity.

0   10 20 30 40 50 60 70 80 90 100

Rate out of 1-100 ()	

In what aspects of your life are you allowed to express your creativity?

_____

Appendix I: Intermittent Survey open-ended question

Please select your current level of interest in D&D so far.

	Not interesting at all (1)	Slightly interesting (2)	Moderately interesting (3)	Very interesting (4)	Extremely interesting (5)
D&D Campaign Interest (1)	○	○	○	○	○

How often can you visualize the environment described by the Dungeon Master (DM)?

	Never (1)	Rarely (2)	Sometimes (3)	Often (4)	Always (5)
D&D Campaign Absorption (1)	○	○	○	○	○

How would you describe your relationship with the other members in your group?

	Terrible (1)	Poor (2)	Average (3)	Good (4)	Delightful (5)
D&D Campaign Connectedness (1)	○	○	○	○	○

Appendix J: D&D Extension Survey Open-Ended Questions

In the past five weeks has this study influenced your other social group activities?

◯ No (21)

◯ Yes (22)

If so, in what way?

_____

In the past five week has this study influenced your adjustment to college?

◯ No (1)

◯ Yes (2)

If so, in what way?

_____

What could the university have done to improve your adjustment to college?

_____

What could you have done to improve your adjustment to college?

_____

What do you think the hypothesis of this study was?

_____

What do you think the purpose of this study was?

_____

Why did you decide to extend your participation?

_____

Appendix K: Debriefing Statement: Non-Extended D&D Group

First of all, thank you for your participation in this study. As was specified in the consent form you reviewed at the beginning of the survey, it is possible that if all details about the study were shared before your participation, that information may have affected your responses today and compromised the validity of the study. While this investigation examines decision making and problem solving of first-year college students, the primary interest to the researchers is how D&D, a table-top role-playing game, could be a brief Intervention in promoting social connection and adjustment to college, especially during first-year college students' transition period. Because it is important for the validity of the investigation that other participants are similarly unaware of all details of the study, we ask that you not share specifics about the study with other potential participants, or discuss the study where other potential participants may overhear. Final results will be available from the primary investigator, Alexander W. Peralta. In addition, you have the opportunity to enter a raffle for a chance to win a $100 amazon gift card. You may contact him at ap22412@georgiasouthern.edu to receive an email copy of the final report and the link to enter the raffle. Finally, all results are anonymous and will be grouped together; therefore individual results will not be available.

Appendix L: Debriefing Statement - Non - D&D Group

First of all, thank you for your participation in this study. As was specified in the consent form you reviewed at the beginning of the survey, it is possible that if all details about the study were shared before your participation, that information may have affected your responses today and compromised the validity of the study. While this investigation examines decision making and problem solving of first-year college students, the primary interest to the researchers is how D&D, a table-top role-playing game, could be a brief Intervention in promoting social connection and adjustment to college, especially during first-year college students' transition period. Because it is important for the validity of the investigation that other participants are similarly unaware of all details of the study, we ask that you not share specifics about the study with other potential participants, or discuss the study where other potential participants may overhear. Final results will be available from the primary investigator, Alexander W. Peralta. You may contact him at ap22412@georgiasouthern.edu to receive an email copy of the final report. All results are anonymous and will be grouped together; therefore individual results will not be available.

Appendix M: Debriefing Statement - D&D Group

First of all, thank you for your participation in this study. As was specified in the consent form you reviewed at the beginning of the survey, it is possible that if all details about the study were shared before your participation, that information may have affected your responses today and compromised the validity of the study. While this investigation examines decision making and problem solving of first-year college students, the primary interest to the researchers is how D&D, a table-top role-playing game, could be a brief Intervention in promoting social connection and adjustment to college, especially during first-year college students' transition period. Because it is important for the validity of the investigation that other participants are similarly unaware of all details of the study, we ask that you not share specifics about the study with other potential participants, or discuss the study where other potential participants may overhear. Final results will be available from the primary investigator, Alexander W. Peralta. In addition, you have the opportunity to enter a raffle for a chance to win an amazon gift card. You may contact him at ap22412@georgiasouthern.edu to receive an email copy of the final report and the link to enter the raffle. Finally, all results are anonymous and will be grouped together; therefore individual results will not be available.

Appendix N: Closing Statement- D&D Group

First of all, thank you so much for your participation so far. Your contribution to this study has made this study possible. The data collected from this study will provide future research with a background to derive and improve on this or other brief interventions for first-year college students and other vulnerable populations. The fact that you completed this study has demonstrated dedication and commitment to yourself and others from your group. That is why we want to allow you to expand our research and continue the collective narrative story you and your fellow adventures have created. You are integral in accomplishing the study's goal and stopping the hidden evil that may still be lurking in The Shadow Forest.

In addition, if you decide to extend your participation, you will be automatically entered into a raffle and have a chance to win a $100 Amazon gift card on top of the potential benefits of participating in the study.

Table 1

Means and Standard Deviations for the all dependent variables for all three groups

Condition	Comparison		D&D		Extended D&D	
	M	*SD*	*M*	*SD*	*M*	*SD*
College Student Stress						
Time 1	33.10	8.03	34.83	8.46	35.57	10.11
Time 2	33.20	12.17	27.55	7.83	28.71	5.46
Time 3					27.71	6.99
Student Adaptation to College						
Time 1	255.70	85.06	303.55	68.89	311.00	49.20
Time 2	281.50	105.65	294.33	76.99	300.30	59.73
Time 3					260.42	38.08
SACQ Social Adjustment to College						
Time 1	76.80	33.67	91.77	26.57	100.85	12.68
Time 2	81.80	32.60	88.44	30.71	89.85	24.39
Time 3					72.14	15.50
SACQ Academic Adjustment to College						
Time 1	82.60	32.16	109.00	30.75	111.57	18.07
Time 2	87.00	35.18	104.94	26.05	112.14	14.57
Time 3					100.85	16.08
SACQ Personal-Emotional Adjustment to College						
Time 1	75.70	22.05	79.44	19.47	79.85	22.19
Time 2	84.90	32.55	76.77	20.15	78.14	20.02

Time 3					71.42	16.92

	SACQ Institutional Adjustment to College					
Time 1	50.60	31.44	55.11	20.61	52.00	8.90
Time 2	59.10	31.41	56.33	21.12	52.85	14.73
Time 4					38.85	9.80

	Social Connection Scale-Revised					
Time 1	77.05	23.60	72.08	15.65	65.28	11.68
Time 2	78.80	23.88	74.50	14.87	69.71	9.55
Time 3					82.85	7.53

	Rosenberg Self-Esteem Scale					
Time 1	25.80	9.96	28.00	8.18	30.00	8.88
Time 2	24.40	11.50	25.88	6.97	28.42	6.29
Time 3					25.85	8.25

Table 2

2 x 2 ANOVA Results for the CSSS

Source	*df*	*SS*	*MS*	*F*	*p*
Between groups	1	53231.24	53231.24	394.06	<.001
Within groups	1	165.60	165.60	6.47	.017
Time x Condition	1	174.959	174.959	6.838	.015

Note. CSSS = College Student Stress Scale

Table 3

2 x 2 ANOVA Results for the SACQ

Source	*df*	*SS*	*MS*	*F*	*p*
Between groups	1	4141371.81	4141371.81	333.66	<.001
Within groups	1	883.36	883.36	.943	.340
Time x Condition	1	3942.50	3942.50	4.21	.050

Note. SACQ = Student Adaptation of College Questionnaire

Table 4

2 x 2 ANOVA Results for the SACQ Personal-Emotional Adjustment Subscale

Source	*df*	*SS*	*MS*	*F*	*p*
Between groups	1	322638.17	322638.17	339.28	<.001
Within groups	1	137.20	137.20	1.40	.247
Time x Condition	1	452.629	452.629	4.63	.041

Table 5

2 x 2 ANOVA Results for the SACQ Academic Adjustment Subscale

Source	*df*	*SS*	*MS*	*F*	*p*
Between groups	1	472841.81	472841.817	285.05	<.001
Within groups	1	.381	.381	.002	.965
Time x Condition	1	229.81	229.81	1.21	.282

Table 6

2 x 2 ANOVA Results for the SACQ Social Adjustment Subscale

Source	df	SS	MS	F	p
Between groups	1	369001.60	369001.60	218.70	<.001
Within groups	1	8.93	8.93	.059	.810
Time x Condition	1	223.21	223.21	1.47	.236

Table 7

2 x 2 ANOVA Results for the SACQ Institute Adjustment Subscale

Source	df	SS	MS	F	p
Between groups	1	157194.21	157194.21	141.24	<.001
Within groups	1	303.82	303.82	2.16	.154
Time x Condition	1	170.25	170.259	1.21	.281

Table 8

2 x 2 ANOVA Results for the RSES

Source	*df*	*SS*	*MS*	*F*	*p*
Between groups	1	34825.17	34825.17	251.89	<.001
Within groups	1	39.63	39.63	2.26	.144
Time x Condition	1	1.63	1.63	.093	.763

Note. RSES = Rosenberg Self-Esteem Scale

Table 9

2 x 2 ANOVA Results for the SCS-R

Source	*df*	*SS*	*MS*	*F*	*p*
Between groups	1	293997.60	293997.60	456.05	.<.001
Within groups	1	55.80	55.80	1.10	.303
Time x Condition	1	1.43	1.43	.028	.868

Note. SCS-R = Social Connection Scale - Revised

Table 10

Responses to Opened-Ended Questions

D&D Influence on other Social Group Activities	D&D Influence on Adjustment to College
I've started hanging out with other participants as the study has given me a chance to get to know them and get to make new friends with similar interests and aesthetics.	I feel I fit in more since I now know more people have a group to chat with and hang out with.
There have been a few times where I had to plan around the study like when I want to hang out with friends or have dinner with them.	It's one of the only extracurricular activities I have partaken in. It's also helped me talk to more people and feel more connected to people I wouldn't have interacted with beforehand.
I have started hanging out with the people I was grouped up with.	It has made me less averse to social interaction.
Our new group has a group had a group chat now and we have been eating lunch together after each campaign. We all get along and can literally talk for hours. One member in particular I see often. I think we really get each other	Made me feel a bit more comfortable and at home
It has made me more outgoing	I think having a group to hang out with at college is nice and helps me to feel more connected here
It's made me open up and speak freely	This study was a way where I could let off some stress and meet amazing people
	It has help me to make friends

Figure 1

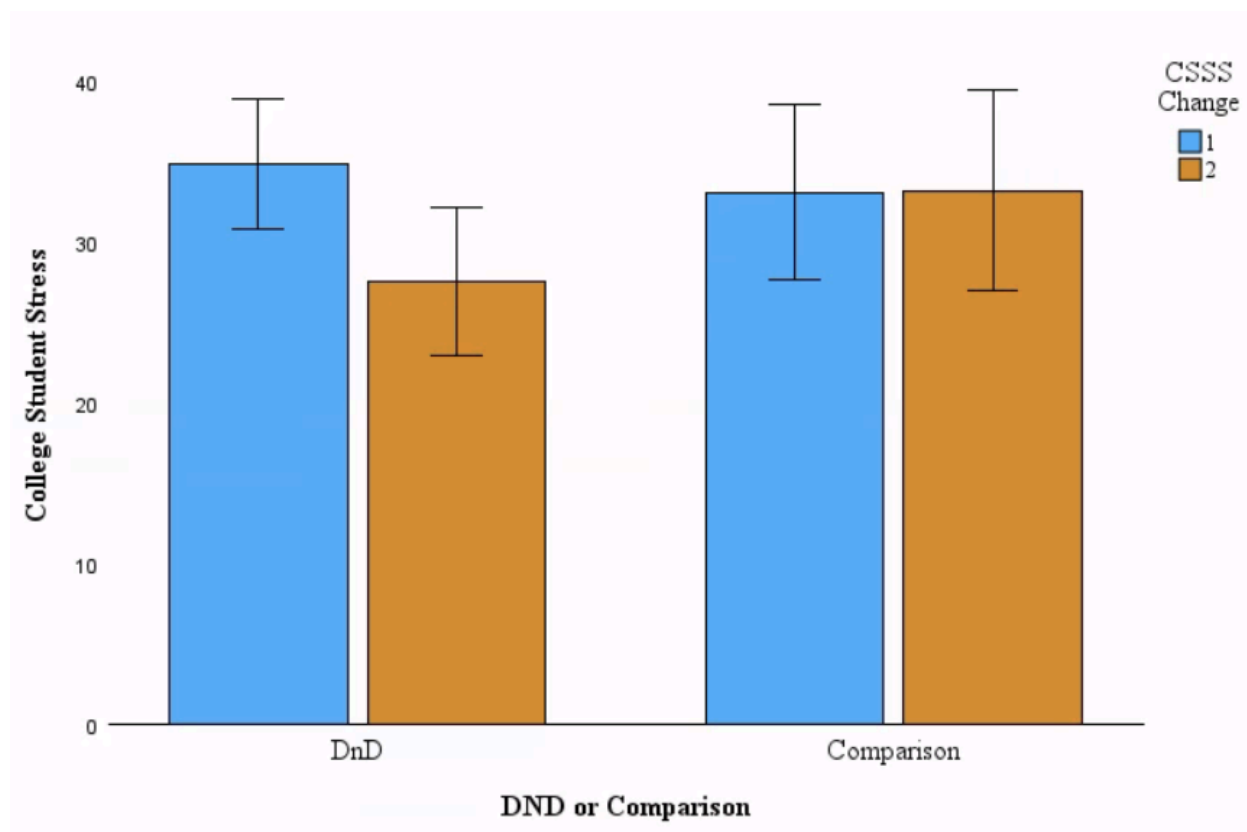*College Student Stress Differences Between D&D and Comparison Group*

Figure 2

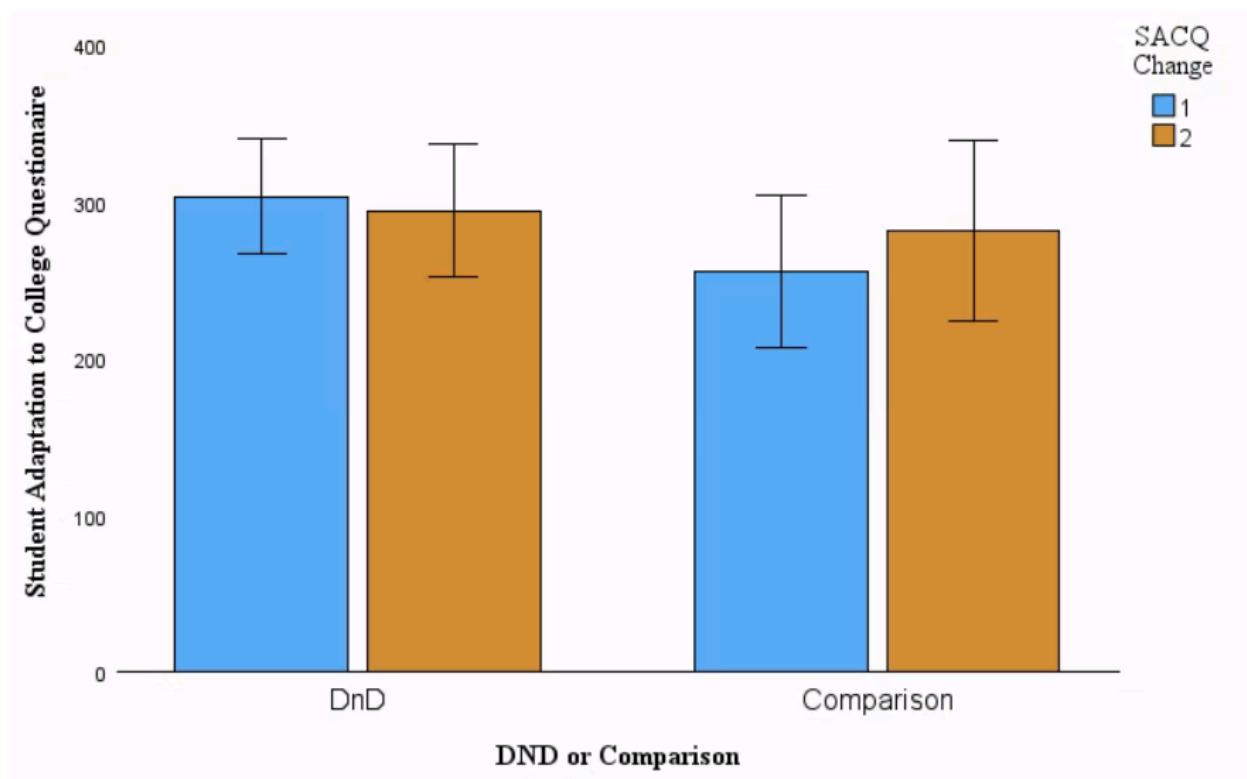*Student Adaptation to College Differences Between D&D and Comparison Group*

Figure 3

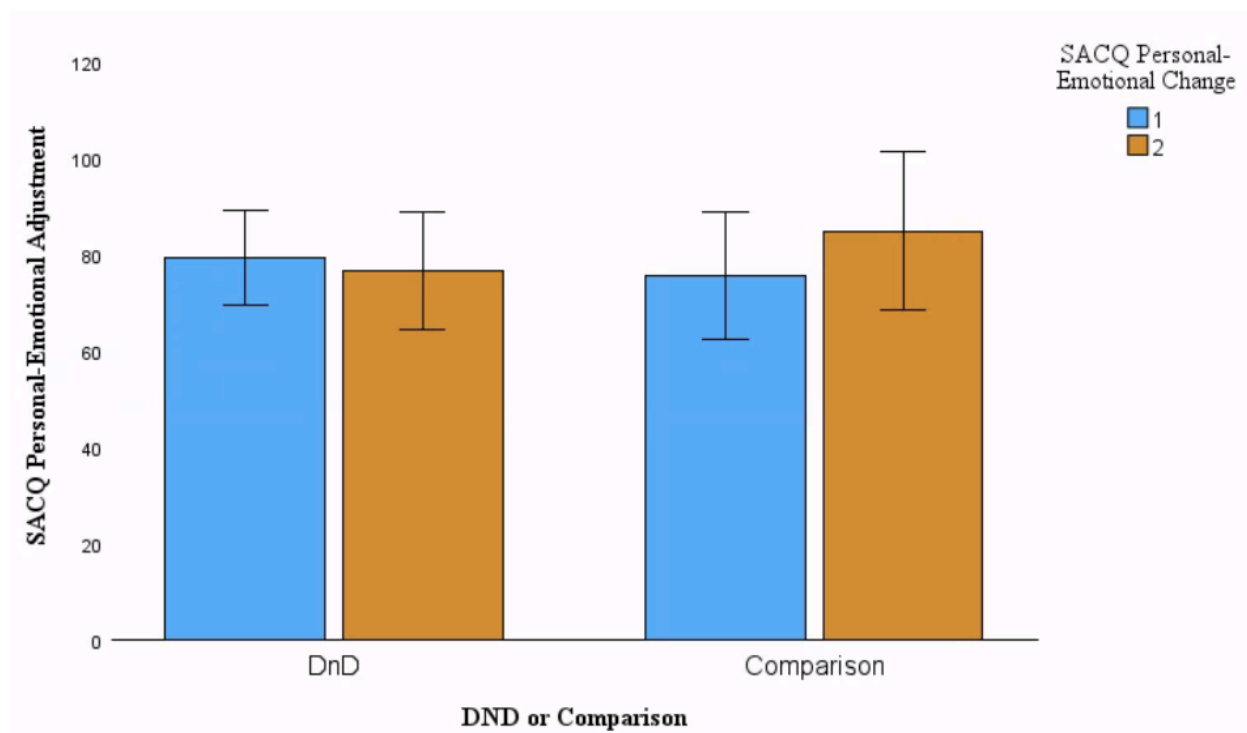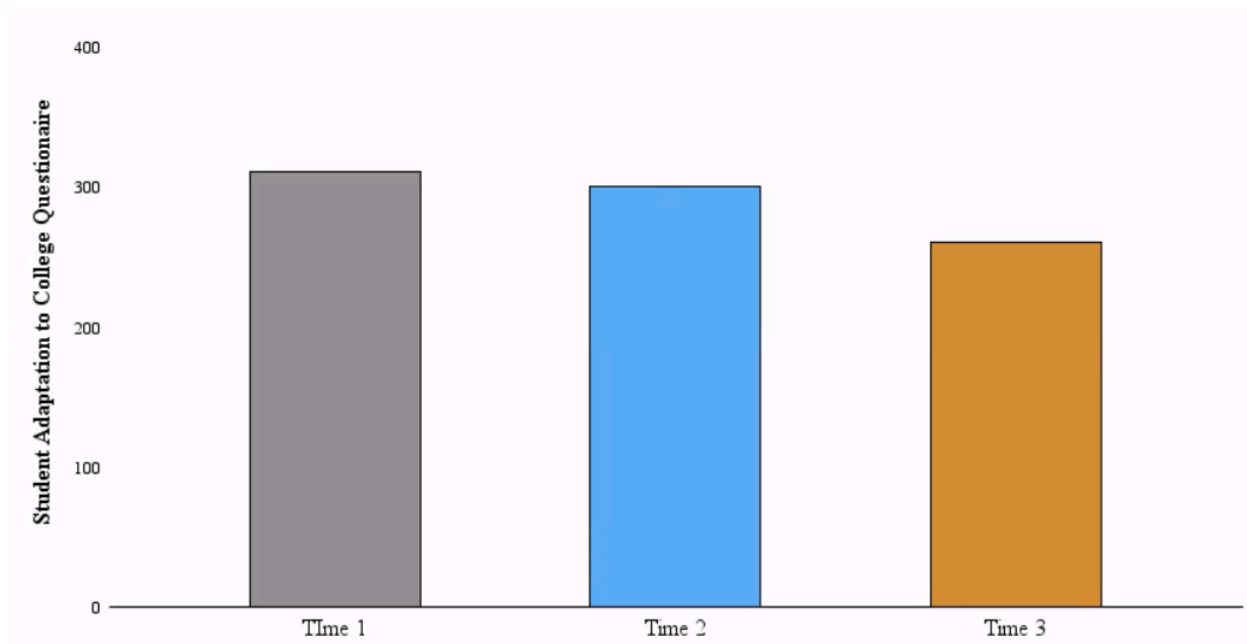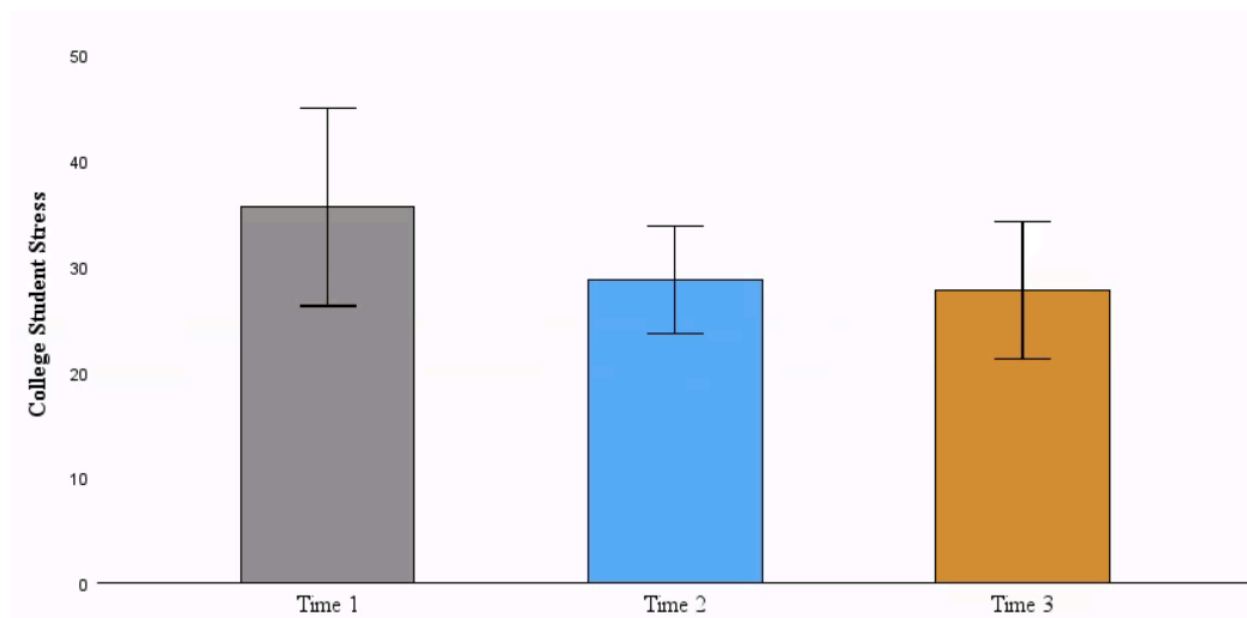*Personal-Emotional Adjustment Differences Between D&D and Comparison Group*

Figure 4

Student Adaptation to College Questionnaire Differences Across Eight Weeks for D&D Group

Assessment Over Weeks

Figure 5

College Student Stress Across Eight Weeks for D&D Group

Assessment Over Weeks

Figure 6

Social Connection Across Eight Weeks for D&D Group
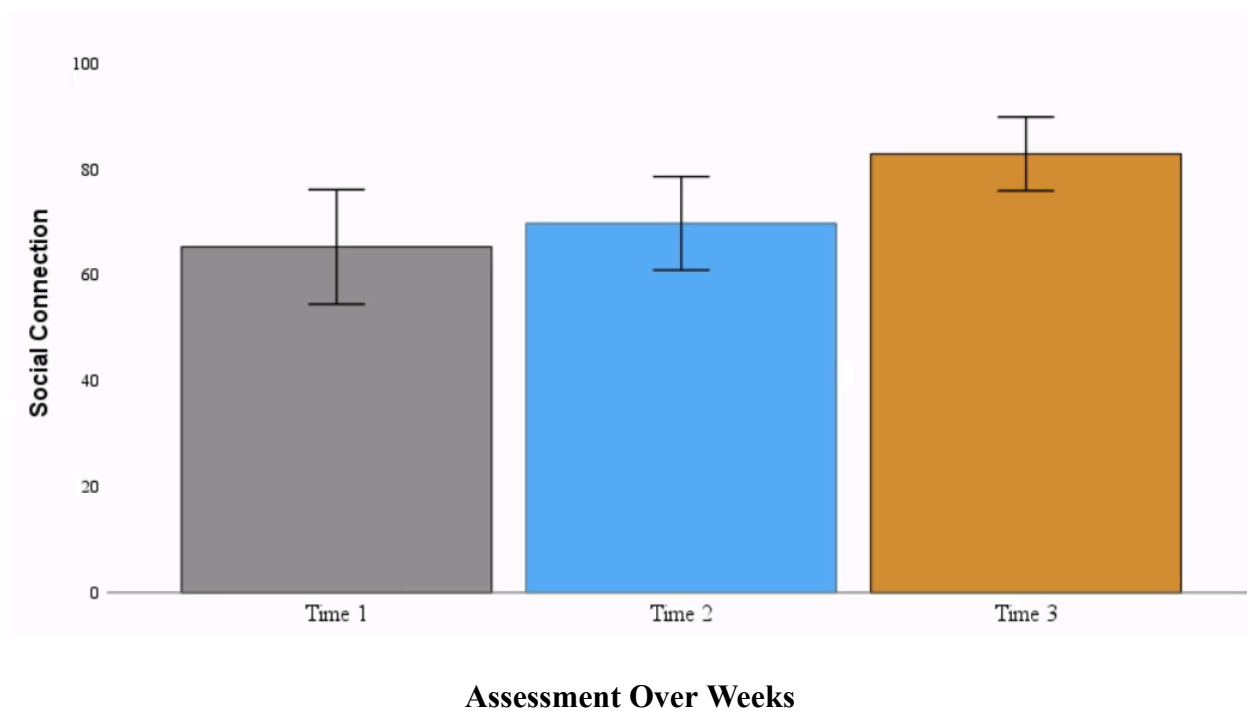

Assessment Over Weeks

Figure 7

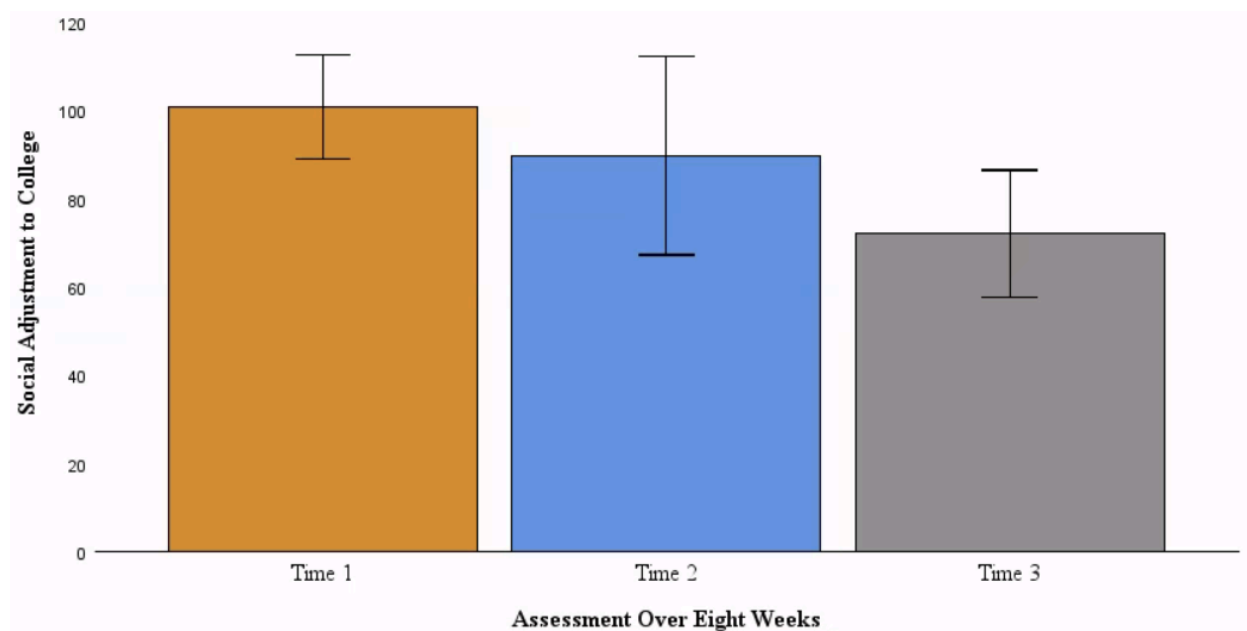*Social Adjustment to College Across Eight Weeks for D&D Group*

Figure 8

Institutional Adjustment to College Across Eight Weeks for D&D Group