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A Comparison of Sorority Women and Non-Sorority Women's Alcohol Use: Perception, Rate of Use, and Consequences

Betsy Zimmerman
Old Dominion University, betsygzimmerman@gmail.com

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A COMPARISON OF SORORITY WOMEN AND NON-SORORITY WOMEN'S ALCOHOL
USE: PERCEPTION, RATE OF USE, AND CONSEQUENCES

by

Betsy Zimmerman
B.A. 2009, Christopher Newport University
M.Ed. 2014, Georgia Southern University

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Approved by:

Alan Schwitzer (Director)

Shana Pribesh (Methodologist)

Amber Pope (Member)

ABSTRACT

A COMPARISON OF SORORITY WOMEN AND NON-SORORITY WOMEN'S ALCOHOL USE: PERCEPTION, RATE OF USE, AND CONSEQUENCES

Betsy Zimmerman
Old Dominion University, 2022
Director: Dr. Alan Schwitzer

While alcohol use and Greek Life on college campuses have often become synonymous, little is known about the rate of use or the consequences of use for sorority women specifically. Gender has been identified as a risk factor relating to substance use on college campuses; however, there is a gap in the literature concerning compounding factors that influence substance abuse, such as membership in a Greek-lettered organization. With approximately 300,000 college women involved in Greek-lettered organizations annually (NPC, 2019), little is known about the impact of alcohol use for sorority women on college adjustment. An exploration of the perception of alcohol use, the rate of alcohol use, and the consequences of use was conducted using the framework of Baker and Siryk's Model of Adjustment (1981) for sorority women. This ex-post facto design used control group matching to explore the impact of sorority membership status on college adjustment. The data was analyzed using a one-way univariate analysis of variance, a one-way multivariate analysis of variance, and a one-way multivariate analysis of covariance. The results indicated that when compared to non-sorority members, sorority members had higher levels of perceived of alcohol use, an increase in behavioral outcomes, and alcohol-related academic consequences. Overall, sorority membership had no impact on overall mental health outcomes. Sorority membership status on overall outcomes was mediated by perception of alcohol use and alcohol use.

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This dissertation is dedicated to the women in academia who came before me and paved the way, to the clients who have trusted me with their journey, and to my partner, Dan, for helping me to believe that anything is possible.

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SUMMARY.....	51
V. DISCUSSION.....	54
REVIEW OF THE STUDY.....	54
UNDERSTANDING THE IMPLICATIONS OF THE RESULTS.....	56
LIMITATIONS AND IMPLICATIONS FOR FUTURE RESEARCH.....	61
CONCLUSION.....	65
REFERENCES.....	66
APENDICES.....	73
A. RESEARCH DOCUMENTATION.....	73
VITA.....	76

List of Tables

Table	Page
1. Research Questions, Variables, and Analyses.....	22
2. Description of Matched Factors.....	24
3. Demographics of Participants.....	27
4. RQ1: Univariate Analysis of Variance of the Effects of Greek Status on Perception of Alcohol Use.....	43
5. Correlations Between Dependent Variables.....	44
6. RQ2: One-Way MANOVA Results.....	46
7. RQ2, Model 2: One-Way ANOVA Results for Outcomes.....	47
8. RQ3: Means, Adjusted Means, Standard Deviations and Standard Errors for the Four Outcome Measures for Sorority Membership Status.....	49
9. RQ3: One-Way MANCOVA Results.....	50
10. RQ3: One-Way MANCOVA Tests.....	50
11. RQ3, Model 2: One-Way ANCOVA Results.....	51

CHAPTER ONE

INTRODUCTION

Statement of Problem

In this chapter, the researcher has provided a brief outline of this study. First, the purpose of the study and statement of problem is discussed. Next, an overview of the theoretical orientation used to design the study is considered. Then, a description of the research design and research questions are explored. Finally, this chapter includes a review of the limitations of this proposed study, definition of relevant terms, and a summary of the chapter.

Purpose of Study

College students find themselves away from home for the first time, and often struggle to find their place within the college community. One way a student finds his or her place within the new environment is by becoming involved in the campus culture (Astin, 1999). For some students, becoming involved in a Greek-lettered organization provides both structure and an in-group that allows students to feel further connected to campus while exploring other aspects of their identity development (Astin, 1999; Torres, Jones, Renn, 2009). Although student bonding can serve as a protective factor for student engagement and retention, it can also lead students to become beholden to a new organization and the external pressure to engage in activities that align with the structure and belief of that organization (Giordano & Caswell, 2012; Hirschi, 1969).

Students can also become involved in different groups on campus by joining Greek-lettered social organizations on campus. Organizations such as these are considered social organizations and can help students to network and meet others in the campus community and the larger community. This is not to say that membership in these organizations do not also bring

with them other issues or concerns (Giordano & Creswell, 2012). For instance, Greek-lettered organizations have a history of being considered the living-example of substance abuse on college campuses (Perkins, Zimmerman, & Janosik, 2011), and this social stigma is further exacerbated through media. Student members in social Greek-lettered groups are often highly visible on campus and are involved in other organizations or activities. Importance is often given to people in positions of power and influence; this remains true for members of fraternities and sororities that hold a position of influence on their respective campuses (Perkins, Zimmerman, & Janosik, 2011). As these students are highly visible on campus, their behaviors, beliefs, and perceptions are highly observable on campus which can impact or potentially influence the larger campus community.

Significance of Study

College students overall continue to utilize alcohol at higher levels than any other substance (Sasso & Schwitzer, 2016). Additionally, students with membership in Greek-lettered organizations continue to use alcohol at higher rates than their identified peers, and have a higher BAC level as compared to unaffiliated students (SAMHSA, 2015), which generally highlights the different drinking culture that is present within Greek-lettered Organizations. With the increase in college enrollment, and Greek-life involvement, over 300,000 sorority women are impacted annually (National Panhellenic Conference, 2019). While extensive research exists in working with college students overall on adjustment outcomes, and even students (both male and female) who are members of Greek-lettered organizations, there is limited research that addresses the impact of sorority membership status on social norms and college adjustment. This study has implications for national governing councils of sororities, student affairs

administrators, and college counseling centers. The proposed study will utilize quantitative data to add to the growing literature on sorority women, alcohol use, and college adjustment.

Overview of Theoretical Framework

Two theories served as guides for this research. First, Baker and Siryk's Model of Adjustment (1981) which focuses on student's adjustment to college across four different domains: academic adjustment, social adjustment, attachment to the institution, and personal-emotional adjustment. In particular, this study focused on academic adjustment as evidenced by student's self-reported GPA, social adjustment as it relates to student's sorority membership status, and personal-emotional attachment through examination of student behavioral outcomes and student mental health outcomes. Social Norms Theory (Perkins & Berkowitz, 1986) also served as a guiding factor for the study as student perception of alcohol use and actual rate of alcohol use influence students' academic outcomes, mental health outcomes, and student behavioral outcomes.

Research Questions and Hypotheses

This study aimed to answer the following research questions:

Question One

To what extent do sorority members differ from similar non-sorority members in perception of alcohol use?

Hypothesis One

Sorority members will have higher rates of perception of alcohol use than similar non-sorority members.

Question Two

To what extent do sorority members differ from similar non-sorority members in behavioral outcomes, mental health outcomes, and academic outcomes?

Hypotheses Two

2A. Sorority members will have higher rates of behavioral outcomes/occurrences and mental health outcomes/occurrences when compared to similar non-sorority members.

2B. Sorority members will have lower academic outcomes/occurrences than similar non-sorority members.

Question Three

To what extent do sorority members differ from similar non-sorority members in behavioral outcomes, mental health outcomes, and academic outcomes when mediated by perception of alcohol use, and alcohol use?

Hypothesis Three

Sorority members will experience an increase in behavioral outcomes/occurrences, an increase in mental health outcomes/occurrences, and a decrease in academic outcomes/occurrences than similar non-sorority members when mediated by perception of alcohol use, and alcohol use.

Description of Research Design

This study was a non-experimental, ex post-facto, matched samples design. As this study utilized existing data, and accessed by the researcher at a later time, this study is considered a causal-comparative study as this researcher could not control or guarantee the cause or groupings of variables of the archival data (Creswell & Creswell, 2018; Field, 2018). The archival data used in this study were gathered over different periods of time, with different participants, across

140 different college and university campuses during the spring 2018 and fall 2018 academic semesters (Field, 2018). The researcher utilized a one-way univariate analysis of variance (ANOVA) to explore the independent relationship between perception of alcohol use and sorority membership status. Next, a MANOVA was utilized to account for the variance to assess multiple dependent variables (behavioral outcomes, mental health outcomes, and academic outcomes). Finally, a MANCOVA was utilized to examine the interactions between sorority membership status, and academic adjustment/outcomes while being adjusted for other variables such as alcohol use, perception of alcohol use (social adjustment), mental health outcomes (emotional adjustment), and behavioral outcomes (personal adjustment) (Field, 2018).

Limitations

This study utilized archival data collected by the American College Health Association (ACHA), an organization invited by colleges and universities to assess the overall health of the student body on their respective campuses. The data was collected four years ago, pre-COVID, which describes a potentially different campus culture and environment than is present during the pandemic. The timeline of the study had the potential for compounding factors such as campus crisis, environmental changes, and attrition to the research program/request. Further, this study focused on only 4-year public institutions that are paid members of ACHA, and who invited ACHA to complete this study on their respective campuses. Due to the design of the study, it may be difficult to generalize the results to other colleges and universities. And finally, this study relied on self-report which is inherently biased in nature (Creswell & Creswell; Field, 2019).

Definition of Terms

The following terms may be useful in understanding the following study:

1. *Fraternity*: social organization at a 4-year institution of higher learning consisting of only male-identified students.
2. *Sorority*: social organization at a 4-year institution of higher learning consisting of only female-identified students.
3. *Greek-lettered Organization (GLO)*: any organization that is considered social in nature and is designated with Greek letters in their name and founding.
4. *Academic Adjustment*: a student's academic outcomes include GPA and overall standing at the university level.
5. *Social adjustment*: a student's adjustment to their social environment and guided by Social Norms Theory (Perkins & Berkowitz, 1981).
6. *Personal adjustment*: a student's potential negative outcomes related to personal responsibility.
7. *Emotional adjustment*: a student's overall level of mental health and help seeking behaviors.
8. *Mental Health Outcomes*: any impact on mental health to include an increase of symptoms, an increase in experience of stressors, or involvement with a professional for the purpose of mental health services.
9. *Behavioral Outcomes*: any personal negative outcomes or consequences experienced by an individual.
10. *Substance Use*: use of any mood-altering substance.
11. *Substance Abuse*: misuse or overuse of any mood-altering substance.
12. *National Panhellenic Conference*: national governing council of 26 sororities.

13. *Binge Drinking*: SAMHSA (2015) defined binge drinking as consuming more than 4-5 drinks in a sitting, and heavy alcohol use consuming more than 5 drinks in a sitting.

Conclusion

This chapter provided an introduction of this current study. First, it began with the overview of the problem of the study. Next, there was a discussion on the purpose and significance of the study's exploration of sorority membership on various outcomes. Further, an overall review of the research questions and design was provided. Next, the chapter discussed various relevant terms for this study. The following chapters will provide a summary of the literature, a more detailed description of this study's design, and a review of the results. Finally, a discussion of the findings will be considered with a discussion of this study's implications, limitations of the study, and recommendations for future research.

CHAPTER TWO

REVIEW OF THE LITERATURE

In this chapter, the researcher has reviewed the literature related to adjustment to college, Greek-lettered organization affiliation, alcohol use among college students, both in general and as it relates to sorority women, and Social Norms Theory. A historical overview of social Greek-lettered organizations on college campuses will be reviewed, with specific focus on the development of sororities. Next, alcohol use among college students in general will be discussed with a focus on students with social Greek-letter affiliation. Finally, the researcher will conclude with a summary of the current proposed study and the related research questions and hypotheses.

Adjustment to College

Adults face transitions at different stages of life. Schlossberg (1981) suggests that adjustment or transition in one's life can cause different amounts of stress. Adjustment can occur at different periods of time in someone's life, and there are different factors that can influence a person's level of adjustment. The individual's current environment and level of support from his or her support network influences the level of stress experienced during the transition. These factors are important when considering a student's transition to the college environment.

Adjustment to college is not often a linear process and has several components. Baker and Siryk (1981) created the Student Adjustment to College Survey (SACQ) to assess the following four different domains: academic adjustment, social adjustment, attachment to the institution, and personal-emotional adjustment. The academic adjustment subscale is used to measure students' commitment to their academic work, and overall commitment to attaining their academic goals. Social adjustment, according to Baker and Siryk (1984) described the manner in which students become involved in organizations on campus (e.g., Greek-lettered

organizations, residence hall positions, and other campus organizations). A student's attachment to their institution is described as the manner in which a student feels connected to their college or university. Baker and Siryk's (1984) model also suggest that a student's personal-emotional adjustment while in college can be measured as the student's ability to manage stressors experienced while adjusting to college.

Historical Overview of Greek-Lettered Organizations

The origins of what are considered today's Greek-lettered organizations can be traced back to the mid 18th century. The Flat Hat Club (or F.H.C. Society), was founded in 1750 at the College of William & Mary (Binder, 2003) and is considered to be the first recorded secret fraternity. Following this, Phi Beta Kappa was chartered in 1776 in Williamsburg, VA, and is considered the first Greek-lettered organization (Current, n.d.). Although this organization was not considered a social Greek-lettered organization, it is said to be the grandfather organization from which the Kappa Alpha Society was founded in 1825 at Union College (Tarleton, 1993), Sigma Phi was founded in 1827 (History of Sigma Phi, n.d.) and Delta Phi was also founded in 1827 (Brubacher and Rudy, 1976).

During the mid-1800s when women were permitted to attend colleges, similar organizations were founded to serve as comparable organizations for women (Binder, 2003). The first women's organizations were established as women's fraternities as there was no Greek word that could be directly translated to describe a comparable organization for women. A more focused review of what are now considered to be sororities will be described next.

History of Sororities

After women were introduced into the college environment and permitted to obtain a college education, it was not until the 1830s when the number of women enrolled reached similar

numbers as the enrollment of men. At this time, most women were attending designated seminary programs that were specifically designed for women and were structured to last approximately 3 years (Geiger, 2000).

As secret societies began to grow for men, similar organizations for women were formed. In 1851, The Adelphean Society (later known as Alpha Delta Pi in 1913), and in 1852, The Philomathean Society (later known as Phi Mu Fraternity in 1904) were founded at Wesleyan College in Macon, GA (The History of Phi Mu Fraternity, 2019). Wesleyan College was the first college established with an express mission to educate and grant college degrees to women. The aforementioned organizations were considered to be women's fraternities as the comparable organizations to the already established men's organizations. It was not until 1874 when Gamma Phi Beta was founded as the first Greek lettered sorority for women (Explore the Legacy, 2019).

Current Involvement of Women in Sororities

As of 2017, a total of 16.8 million students were enrolled as undergraduate students in colleges and universities across the United States (National Center for Education Statistics, 2019). Overall, involvement in some form of Greek life while enrolled in college has continued to climb over the past 15 years (Greek Life Statistics, n.d.). According to the most recent national report from the National Panhellenic Conference (NPC) (National Panhellenic Conference, 2019), over 380,000 college women are currently members of social sororities within the Panhellenic Conference, with over 130,000 women joining sororities in the past academic [2018-2019] year (National Panhellenic Conference, 2019).

Sorority Women and College Adjustment

There are many challenges students can face as they transition into their college environment (Schlossberg, 1981). One factor that can contribute to a student's adjustment to the

college setting is the social well-being and connectedness to the campus or larger community (Baker & Siryk, 1981). One way in which female college students find their connection to others, and the university or college as a whole, is to join social organizations. Previous research suggests that sorority involvement also increases the chance that students will become involved in more organizations on campus (Asel, Seifert, & Pascarella, 2015, Astin, 1977). It is also suggested that as sorority women adjust to college, there are also gains in their social and emotional connections and adjustment (Asel, Seifert, & Pascarella, 2015; Pike, 2000). Although sorority membership status has not been shown to alter a student's engagement in the classroom, overall sorority membership has been shown to impact the student's overall connection with other students in their respective community (Asel, Seifert, & Pascarella, 2015).

College Students and Alcohol Use

As college students are transitioning to college and forming new bonds and affiliations, their relationship to others and ideas often changes. For example, college students arrive to campus with internal factors, such as belief systems, that influence their behavior. As students begin making connections to others on campus, external factors are then introduced (Giordano & Cashwell, 2012). These external factors, such as friend groups on campus and association with living on college campuses, among other factors, serve as protective factors that deter students from engaging in what is considered in that community to be delinquent behavior. During this period of transition, college students are developing their own identity, and that can occur within the context of group membership (Hensley, 2001; Torres, Jones, Renn, 2009). Along with the protective factors, there are some risk-factors that are also associated with college student bonding and development.

The environment and larger culture of the campus community not only promotes alcohol use but promotes high-risk alcohol behaviors. SAMHSA (2015) defined binge drinking as consuming more than 4-5 drinks in a sitting, and heavy alcohol use as consuming more than 5 drinks in a sitting. The bonds created by students to the campus community are closely associated with binge drinking behaviors (Bishop, 2000). Along with the adjustment to campus life brings with it an increase in stress and anxiety for new students. Anxiety is considered one of the risk factors associated with drinking behaviors and college students (Smith, Bowdring & Geller, 2015).

Alcohol remains the most widely used substance amongst college students (Sasso & Schwitzer, 2016). This trend continues with the current public health concerns of substance use in the United States. The National Survey on Drug Use and Health (NSDUH) found 37.9% of college students participated in binge drinking behaviors, compared to 32.6% of non-collegiate counterparts. Further, researchers identified 12.5% of college students used alcohol heavily as compared to 8.5% of the general population in the same age range (SAMHSA, 2015). Starting with President Clinton, the United States began a movement to universalize the nationally accepted limit for public intoxication, and the National Highway Traffic Safety Administration (NHTSA) continues to have one nationally recognized measurement of sobriety for operating a motor vehicle. This measurement has become the standard by which each state measures overall intoxication for adults above legal drinking age since 1991 (NHTSA, 2000). The average BAC level of college students remains above the legal limit of .08, and is on average higher for Greek-affiliated students when compared to students who are not affiliated with Greek-lettered organizations (Smith, Bowdring & Geller, 2015). This demonstrates that there is a different drinking culture for college students, but more specifically for students involved within the

Greek community. The associated assumptions held by students surrounding the alcohol consumption rates and relationship to alcohol of other students also influences the way college students consume alcohol (Terry, Gerry & Carey, 2014). This leads to questions about other identifying markers for college-age students in Greek-lettered organizations, such as gender.

Greek Affiliated Students and Alcohol Use

Gender is clearly identified as a risk factor relating to substance use on college campuses; however, there is a gap in the literature concerning compounding factors that influence substance abuse, such as membership in a Greek-lettered organization. Although the use of alcohol is not unique to a college experience, images of problematic or dangerous alcohol use (i.e. binge drinking) is closely associated with college students (Smith & Berger, 2010). Greek students, either fraternity or sorority members, identify that drinking is a part of their organizational culture, which is representative of Greek Life serving as its own subcultural group (Perkins, Zimmerman, & Janosik, 2011; Palmer, 1928). Although alcohol use is common among college students, students who are members of social Greek-lettered organizations also have alcohol use patterns that surround certain events (Juth, Thompson, & Nodes, 2010). Factors that are specific to sorority and fraternities that influence alcohol use include recruitment events/weekends, organizational sponsored booths and exhibits during sporting events, and in general, weekends; all of which are impacted by the weather. Not only is alcohol use related to the aforementioned situations, but increased alcohol use also then leads to an increase in consequences from that behavior.

Greek-lettered organizations have their own set of standards and norms associated with their membership which can influence their members' behaviors, and therefore, any potential consequences that stem from this behavior. Consequences which are directly related to alcohol

use, or alcohol-related problems, are more heavily influenced by gender than any other factor (DeMartini & Carey, 2009; Larimer, Turner, Mallett, & Geisner, 2004; Pedrelli, Collado, Shapero, Brill, & MacPherson, 2016). Furthermore, women use alcohol to cope with different feelings and situations than men, and do so at higher rates. Women with an increased rate in alcohol use (e.g., binge drinking behaviors) can also experience other health related issues that are specific to experiences of women. Just as Greek students have a specific set of guidelines and norms, it is more specific for women. There is a need for further research focused on the experiences of sorority women. Gendered stereotypes exist in the way men and women consume alcohol. However, Pianie and Safer (2008) discovered when comparing males and females of the same ethnicity, the difference in alcohol consumption rates (e.g., rate of use in a sitting) disappeared. Though previous research has distinguished fraternity and sorority members apart, it appears sorority women have rarely been studied as their own sub-cultural group.

Sorority Women and Alcohol Use

A multitude of complications can arise from use or misuse of alcohol; however, women have a higher risk for complications due to biological differences that change the way in which women process alcohol (Pianie & Safer, 2008). While previous research exists on alcohol use in college women and within Greek-lettered organizations, there is a dearth of research focusing directly on the experiences of sorority women. Women's decisions regarding alcohol may be in response to "unique social and environmental factors" that are shared between women of a specified group (e.g., sorority membership) and thus will impact their perceived social norms, (Likis-Werle, & Borders, 2017, p. 100; Palmer, 1928). The perceived use of others around them (e.g., initiated sorority sisters/members) is the largest influence on women's alcohol use (Larimer, Turner, Mallett, & Geisner, 2004). The current rate of use and relationship to alcohol is

likely to predict the alcohol use and relationship to alcohol in the future for women. Women are more impacted by attitudes and beliefs than men; however, programmatic efforts in college counseling centers are based on addressing an individual's perceptions of behavior, which neglects to meet the needs of women on campus, specifically sorority women on campus and the specific norms of their cultural group.

Sorority Women, Alcohol, and College Adjustment

Some statistics show that membership in a Greek-lettered organization does change the relationship to alcohol. For example, Grunner (2012) found that 40.9% of unaffiliated college females drank alcohol at abusive rates, whereas 62.4% of sorority women consumed alcohol at abusive rates. Although alcohol use has historically been connected to membership in a Greek-lettered organization, it was generally considered that men drank at higher rates than women. More recent research has shown the change in alcohol use between men and women is closer than ever before (Asel, Seifert, & Pascarella, 2009). Additionally, DeSimone (2007) found that the relationship between alcohol and membership in a Greek-lettered organization remains true for both fraternity and sorority members.

As women are joining sororities, and consuming alcohol, there are also impacts occurring in relation to their adjustment in the college setting. Even more than male college students, females look for more social connections to feel better connected to their university or college (Wessel & Salisbury, 2017). As women are looking to create meaningful relationships with others that will subsequently allow them to create a stronger connection to the institution, women-only organizations such as sororities often have a larger impact than other organizations on campus on their social and academic life (Lewis & Clemens, 2008). Memberships to certain organizations play a role in the students' development of their own acceptable norms for

behavior. Next, Social Norms Theory will be explored to assist in explaining the role sororities play in female students' perceptions and beliefs.

Social Norms Theory

Social Norms Theory suggests there are different types of norms that can relate to and potentially explain the reasons behind behavior (Perkins & Berkowitz, 1986). The use of “injunctive norms” can be explained as the “attitudes or what people feel is right based on morals and beliefs”, and “descriptive norms” which are described as “what people actually do” (Berkowitz, 2005, p. 7). By utilizing the framework of Social Norms Theory, this researcher aimed to understand the impacts of the perceptions of alcohol use and its impacts on the lives of sorority women. With the use of the Social Norms Theory, it can be assumed that women of a specific organization will place a higher importance on the perceived drinking procedures of their organizations, over the perceived norms of other groups, such as the campus population (Bruce & Keller, 2007). Likewise, Bruce and Keller also found that members of a person's reference group will most likely be the largest source of influence for any one individual (2007). By examining the individualized lived experiences through an in-context perspective, we can understand the description and experience of a sorority woman with alcohol.

Social Norms Theory purports that membership into a smaller, explicitly gender-specific group, has a larger impact on group member behaviors (Lewis & Clemens, 2008). Furthermore, the adoption of external beliefs, namely beliefs of friends, has a strong influence on one's actions (Giordano & Cashwell, 2014). Sororities, by construct, are organizations that have a collective membership body and can be identified by ascribing to the same set of values and goals. It could be argued that the closeness of the members of a sorority make it more plausible that other undisclosed norms would prescribe certain behaviors as acceptable or favorable. With the role of

Social Norms Theory as a guiding frame of this study, the research team aims to determine if sorority membership status will impact perception and beliefs moving forward.

The Current Study

Alcohol use in college and university settings has remained a constant throughout history. More recently, studies have focused on the use and misuse of alcohol by members of Greek-lettered organizations (Hevel, Martin, Weeden, & Pascarella, 2015), and there are no longer large differences between the way fraternity men and sorority women utilize alcohol (Asel, Seifert, & Pascarella, 2009; DeSimone, 2007). Membership in a Greek-lettered organization, explicitly a gender-specific organization, is a large contributing factor to sorority women's adjustment to college; especially in consideration that members of these organizations tend to adopt the beliefs of their reference group (Lewis & Clemens, 2008; Giordano & Cashwell, 2014). Social Norms Theory will be used as a theoretical framework, guiding the research questions, development and research design construction.

This study examined the rate perceptions of alcohol use, rate of alcohol use, and consequences of alcohol use for female members of social Greek-lettered organizations, while specifically looking at the population of sorority women attending 4-year institutions. By utilizing this quantitative sample, the results of this study can inform the way college counseling centers and student affairs professionals provide services on their campuses via primary, secondary, and tertiary interventions for a population that has not been historically studied.

This approach is advantageous and often used in the public health administration field (Diclemente, 1999). From a preventative standpoint, student affairs and mental health professionals can provide primary interventions to promote awareness and aim to reduce the number of problematic behaviors within the Greek-lettered community. As a secondary

intervention, the information can be used to assist mental health professionals and student affairs professionals to identify those students who may have problematic relationships with alcohol, and provide targeted services to reduce the prevalence of those at risk on campus. Further, this information can be utilized by mental health providers on college campuses to reduce the impact of the behavior by providing treatment services to those in need.

Through previous research, Smith and Berger (2010) identified a gap in research wherein women's experiences were not explicitly researched. Given that much of the research has focused either on the Greek-lettered organization membership or on men in the Greek system, there is a need for further research focused on the experiences of sorority women. In a recent study, Likis-Werle and Borders (2017) identified women's decisions regarding alcohol may be in response to "unique social and environmental factors" (p. 100). In addition, they found the shared experiences of women who are members of a specified group (i.e. a sorority) will impact their perceived social norms (Likis-Werle & Borders, 2017). Overall, there is a dearth in the literature as it relates to the impact of sorority membership and perception of alcohol use, and alcohol use on college women's adjustment and outcomes.

Research Questions

The researcher examined the following research questions in this study:

Question One

To what extent do sorority members differ from similar non-sorority members in perception of alcohol use?

Question Two

To what extent do sorority members differ from similar non-sorority members in behavioral outcomes, mental health outcomes, and academic outcomes?

Question Three

To what extent do sorority members differ from similar non-sorority members in behavioral outcomes, mental health outcomes, and academic outcomes when mediated by perception of alcohol use, and alcohol use?

Conclusion

In this chapter, a review of relevant literature and theoretical underpinnings was provided to establish the need and design for the study focusing on sorority women's adjustment and academic outcomes while adjusting for alcohol use and other confounding factors. Next, an outline of the methodology for this study will be discussed.

CHAPTER THREE

METHODOLOGY

In this chapter, the researcher has provided an overview of the research method and design used in this study.

Purpose and Research Questions

The purpose of this study was to examine the influences of sorority status membership on alcohol use, perception of alcohol use, student behavioral outcomes, mental health outcomes, and academic outcomes. The following are the research questions that guided the research study:

Question One

To what extent do sorority members differ from similar non-sorority members in perception of alcohol use?

Hypothesis One

Sorority members will have higher rates of perception of alcohol use than similar non-sorority members.

Question Two

To what extent do sorority members differ from similar non-sorority members in behavioral outcomes, mental health outcomes, and academic outcomes?

Hypotheses Two

2A. Sorority members will have higher rates of behavioral outcomes and mental health outcomes.

2B. Sorority members will have lower academic outcomes than similar non-sorority members.

Question Three

To what extent do sorority members differ from similar non-sorority members in behavioral outcomes, mental health outcomes, and academic outcomes when mediated by perception of alcohol use, and alcohol use?

Hypothesis Three

Sorority members will experience an increase in behavioral outcomes/occurrences, an increase in mental health outcomes/occurrences, and a decrease in academic outcomes/occurrences than similar non-sorority members when mediated by perception of alcohol use, and alcohol use.

Research Design

This study was a non-experimental, ex post-facto, matched samples design. As this information was previously gathered, and accessed by the researcher at a later time, this study is considered a causal-comparative study as this researcher cannot control or guarantee the cause or groupings of variables as this study will be using archival data (Creswell & Creswell, 2018; Field, 2018). The archival data used in this study were gathered over different periods of time, with different participants, across 140 different college and university campuses during the spring 2018 and fall 2018 academic semesters (Field, 2018).

Overall, the dataset used in this study used probability sampling, more specifically stratified random sampling (Creswell & Creswell, 2018). Each university used in this study ($n = 140$) served as a separate grouping, and within each group all participants had the same probability of being included in the study. This study and sample are not representative of all college and university students in the United States. Further, the data used in this study will be cross-sectional as the data were gathered at different periods of time across different college

campuses (Creswell & Creswell, 2018). The participants in the larger dataset are only representative of the student population of the 140 participating locations during the spring 2018 and fall 2018 semesters.

Table 1

Research Questions, Variables, and Analyses

Research Question	Independent Variable	Dependent Variables	Proposed Analysis
1. To what extent do sorority members differ from similar non-sorority members in perception of alcohol use?	Sorority membership status	Alcohol use	Univariate Analysis of Variance
2. To what extent do sorority members differ from similar non-sorority members in behavioral outcomes, mental health outcomes, and academic outcomes?	Sorority membership status	Behavioral Outcomes, Mental Health Outcomes, Academic Outcomes	One-Way Multivariate Analysis of Variance
3. To what extent do sorority members differ from similar non-sorority members in behavioral outcomes, mental health outcomes, and academic outcomes when mediated by perception of alcohol use, and alcohol use?	Sorority membership status Covariates: Perception of alcohol use, Alcohol Use	Behavioral Outcomes, Mental Health Outcomes, Academic Outcomes	One-Way Multivariate Analysis of Covariance

As this study was a non-randomized design, a matched control group was implemented to address the confounding variables in each research question. The utilization of matched control groups allowed the research design to mimic random assignment. All participants who identified themselves as female were sorted based on their self-identified ethnicities. All matched control groups were created in separate datasets, and then appended into the larger data set to control for

ethnicity as a matching variable. The variables utilized to match participants on similar attributes is described below in Table 2.

Table 2

Description of Matched Factors

Covariate	Description	Coding
Socioeconomic Status/Employment	Students who work part-time work less than 20-hours a week. Students who work full-time work more the 21-hours a week.	0=full-time 1=part-time
Year In School	Freshman and sophomore students indicated being first- or second-year undergraduate students. All other students indicated being a third, fourth, or fifth or more undergraduate student, graduate/professional, not seeking a degree or other.	0=not 1st or 2nd year undergraduate 1=1st or 2nd year undergraduate
Enrollment Status	Full-time students are students who indicated they were enrolled in full-time credits at their institution. Not fulltime students are students who indicated either being part-time or other at their institution.	0=not fulltime students 1=fulltime students
Transfer Status	Recent transfer students are students who indicated transferring to the college or university in the last 12 months. All other students are indicated as not being recent transfers.	0=not transferred in the last 12 months 1=transferred in the last 12 months
Age	Years since date of birth	0=25 years old or more 1=24 years old or less
Residence On/Off Campus	Students who live on-campus indicated living in campus residents halls, fraternity or sorority housing, or other college/university housing. Students who live off-campus indicated living in their parent/guardian's home, other off-campus housing, or other.	0=off-campus 1=on-campus
International Status	International students are students who indicated as international, and non-international students are students who did not indicate they were international students.	0=not international 1=international

This study utilized an ex-post facto causal comparative design; therefore, random assignment cannot be utilized. However, utilizing matched control groups was utilized to reduce selection bias as the researcher is unable to randomly assign sorority membership status in this study. By utilizing matched factors, this study equated both groups (sorority women and non-sorority women) based on selected covariates (socioeconomic status, year in school, ethnicity, transfer status, and age) that can contribute to the individual's academic outcomes. This design allowed the researcher to examine the role of sorority status membership as an independent variable in a mimicked randomized environment (Field, 2018).

Human Subjects Review

This study was submitted to and reviewed by the Old Dominion University Education Human Subjects Review Committee at Old Dominion University for exempt status prior to any data analyses. This study was approved as exempt status from human subjects review. The exempt letter is in Appendix A.

Participants

The ACHA is contacted by various colleges and universities in the United States and asked to survey the students from their respective campuses. Each college or university was given the opportunity to author the material(s) used to recruit their students to engage in the study (American College Health Association, 2019). Then, the initiating college or university is asked to provide the email addresses of each student to ACHA. Next, ACHA contacts each student via email using the recruitment email wording established by each institution. If the organization is not permitted to provide student email addresses, ACHA will provide unique links for each student to the initiating school. Every student who is enrolled at that college or

university is eligible for the study as the email address utilized to contact the students is provided by the organization (American College Health Association, 2019).

Overall, the dataset used in this study uses probability sampling, more specifically stratified random sampling (Creswell & Creswell, 2018). Each university used in this study ($n = 140$) served as a separate grouping, and within each group all participants had the same probability of being included in the study. This study and sample are not representative of all college and university students in the United States. The participants in the larger dataset are only representative of the student population of the 140 participating locations during the spring 2018 and fall 2018 semesters.

The initial sample received from ACHA ($n = 114,359$) is representative of the institutions included in the study within the spring 2018 and fall 2018 semesters, but this sample is not generalizable to all college students, or all sorority women and non-sorority women attending 4-year institutions in the United States. With consideration of the inclusion criteria of this specific sample (participants who identify as women, who attend a four-year public institution) for the population of this study, the total sample of sorority women included 8,865 participants, a total of matching non-sorority women included 7,189 participants. After utilizing matched control groups, the total sample was 16,054. Table 3 depicts overall participant demographics.

Power Analysis

This researcher utilized G*Power 3.1 to determine the minimal sample size needed for statistically significant results in a MANCOVA. With a .80 minimum power level, a medium effect size (f^2) of .25, a .05 error probability (α), and a power (β) of .95, the power analysis suggests a sample size of 400. The final sample size, ($n = 16,054$) exceeded these requirements.

Instrumentation

For this study, the quantitative archival data used was collected by utilizing the ACHA-NCHA IIc which has been tested and shown to be both valid and reliable (ACHA, 2013). This instrument is utilized nationally by ACHA, and as an organization ACHA administer the ACHA-NCHA IIc on each campus which increases the fidelity of questionnaire utilization and implementation (ACHA, 2013). The questionnaire assesses the student's perception of alcohol use on their campus, and participant's self-reported actual rate of daily, weekly, and monthly alcohol consumption. Furthermore, as this questionnaire allows participants to self-identify as a member of social Greek-lettered organization, which allows for cross-comparisons between students who identify as both female and members of a social Greek-lettered organizations.

The instrument used for the quantitative portion of this study is the ACHA-NCHA IIc. Reliability and validity tests were conducted on the ACHA-NCHA II, with the only differences between the two surveys being demographic questions that were edited to provide more inclusive language options. A principal component analysis was completed and repeated with a standardized alpha result over .7, which is considered to be a strong result for a scale measure (ACHA, 2013). Construct validity was found after being evaluated over two periods of data collection, and results were consistent.

NCHA IIc

Data for this study was collected by ACHA across 140 college/university campuses during the fall 2018 and spring 2018 academic semesters. This archival data is beneficial for this study design as it allows the researcher to examine the relationship between sorority status across adjustment domains while examining academic outcomes, mental health outcomes, and behavioral outcomes.

Controlled Matched Variables. The researcher utilized the following variables as matching criteria for controlled factor matching as each variable contributes to student outcomes.

Socioeconomic status. Individual's level of financial need as evaluated by the number of hours each participant needs to work in order to support herself.

Year in school. Participants' academic year/academic ranking at the time of data collection.

Ethnicity. Ethnicity reported by individual participant at the time of data collection.

Transfer status. Student transfer status (1-transferred to institution, 0-did not transfer to institution).

Age. Age of individual participant at the time of data collection.

Variables used. In this study, the following variables were utilized to address adjustment across the sample.

Social adjustment. Variables used to explore this domain of adjustment were perception of alcohol use, and rate of alcohol use.

Personal adjustment. Variables used to explore this domain includes behavioral outcomes (e.g., legal consequences, university consequences, other personal consequences within relationships) related to drinking behaviors.

Emotional adjustment. Variables used to explore this domain include mental health related outcomes (e.g., presence of any mental health diagnosis, and utilization of campus or community resources related to mental health needs).

Behavioral Outcomes

The researcher assessed behavioral outcomes by using question 16A, B, C, D, E, F, G, H, and I from the Alcohol, Tobacco, and Other Drugs section of the NCHA IIc. Question 16 asks participants to indicate any consequences they have experienced in the last 12 months while drinking alcohol. The following issues were listed: did something you later regretted, forgot where you were or what you did, got in trouble with the police, someone had sex with me without my consent, had sex with someone without their consent, had unprotected sex, physically injured yourself, physically injured another person, and seriously considered suicide. For each consequence/behavior, the participant had the option to select one of the following options: N/A don't drink, no, yes. The researcher selected this question as it directly asks participants to indicate overall behaviors that occurred when the participant was drinking alcohol.

Mental Health Outcomes

The researcher assessed mental health outcomes by using question 33A, B, C, D, E, F, G, H, I, J, K, and L from the Mental Health section of the NCHA IIc. Question 33 asks participants to indicate any experiences that have been traumatic or difficult to handle in the last 12 months. The following issues were listed: academics, career-related issue, death of a family member or friend, family problems, intimate relationships, other social relationships, finances, health problem of a family member or partner, personal appearance, personal health issue, sleep

difficulties, and other. For each concern, the participant had the option to select one of the following options: no, yes.

Academic Outcomes

The researcher assessed academic outcomes by using question 45A from the Impediments to Academic Performance section of the NCHA IIc. Question 45A asks participants to select how alcohol use has impacted their academic performance in the last 12 months. The following response options were provided: this did not happen to me/not applicable, I have experienced this issue but my academics have not been affected, received a lower grade on an exam or important project, received a lower grade in the course, received an incomplete or dropped the course, or significant disruption in thesis, dissertation, research, or practicum work. The researcher selected question 45A from the NCHA IIc as it directly asks about impediments to academic performance due to alcohol use.

The researcher also assessed academic outcomes by using question 63 from the demographic characteristics section of the NCHA IIc. Question 63 asks participants to indicate their approximate cumulative grade average. The following response options were provided: A, B, C, D/F, N/A. The researcher selected this question as it directly asks about participants' overall grade point average.

Perception of Alcohol Use

The researcher assessed perception of alcohol use by using question 9A5 from the Alcohol, Tobacco, and Other Drugs section of the NCHA IIc. Question 9A5 asks participants to indicate their perception of the use of alcohol (beer, wine, liquor) in the last 30 days. The following response options were provided: never used, have used, but not in the last 30 days, 1-2 days, 3-5 days, 6-9 days, 10-19 days, 20-29 days, or used daily. The researcher selected question

9A5 from the NCHA IIc as it directly asks about participants' perception of frequency of alcohol use at their school in the last 30 days.

The researcher also assessed perception of alcohol use by using question 12 from the Alcohol, Tobacco, and Other Drugs section of the NCHA IIc. Participants were asked to indicate their perception of how many drinks of alcohol the typical student at their school had the last time they "partied"/socialized. The participants were asked to enter their perception as an open response.

Alcohol Use

The researcher assessed participant alcohol use by using question 8A5 from the Alcohol, Tobacco, and Other Drugs section of the NCHA IIc. Question 8A5 asks participants to indicate their use of alcohol (beer, wine, liquor) in the last 30 days. The following response options were provided: never used, have used, but not in the last 30 days, 1-2 days, 3-5 days, 6-9 days, 10-19 days, 20-29 days, or used daily. The researcher selected question 9A5 from the NCHA IIc as it directly asks about participant's frequency of alcohol use at their school in the last 30 days.

The researcher also assessed participant alcohol use by using question 10 from the Alcohol, Tobacco, and Other Drugs section of the NCHA IIc. Participants were asked to indicate how many drinks of alcohol they had the last time they "partied"/socialized. The participants were asked to enter their perception as an open response. The researcher selected question 10 from the NCHA IIc as it directly asks participants to indicate the amount of alcohol consumed the last time they "partied"/socialized.

Additionally, the researcher assessed participant alcohol use by using question 13 from the Alcohol, Tobacco, and Other Drugs section of the NCHA IIc. Participants were asked to indicate how many times they had 5 or more drinks of alcohol in a sitting in the last two weeks.

The following response options were provided: n/a, don't drink, none, 1 time, 2 times, 3 times, 4 times, 5 times, 6 times, 7 times, 8 times, 9 times, or 10 or more times. The researcher selected question 13 from the NCHA IIc as it directly asks participants to indicate how many times they consumed more than five drinks of alcohol in a sitting. This question asks participants' to include their involvement in binge drinking behaviors, which is indicated by research to be an especially dangerous or problematic behavior for women (Bishop, 2000; Paine & Safer, 2008; SAHMSA, 2015; Smith & Berger, 2010).

Data Analysis

The data analysis began with screening and cleaning of the data. Variables were labeled, created, defined, and screened for missing data or entry errors. Missing data and problematic data were addressed using common methods for addressing missing and problematic data (e.g., Winsorizing, replacing the missing value with a mean value, or utilizing SPSS to estimate missing values (Field, 2018).

A separate analysis was utilized to address each research question. A univariate analysis of variance (ANOVA) was utilized to address Research Question One ("To what extent do sorority members differ from similar non-sorority members in perception of alcohol use?"), a multivariate analysis of variance (MANOVA) was utilized to address Research Question Two ("To what extent do sorority members differ from similar non-sorority members in behavioral outcomes, mental health outcomes, and academic outcomes?"), and a multivariate analysis of covariance (MANCOVA) was utilized to address Research Question Three ("To what extent do sorority members differ from similar non-sorority members in behavioral outcomes, mental health outcomes, and academic outcomes when mediated by perception of alcohol use, and

alcohol use?”). Assumption checking occurred before each analysis to ensure that the variables met the requirements for their respective analyses (Field, 2018).

Data Cleaning

This study utilized archival data. This researcher was not present at the time of data collection. In reviewing data, 9086 participants self-identified as women by self-selecting ‘female’ in the questionnaire. This means the participant selected that their gender identity was consistent with their sex at birth, and the participant selected ‘no’ for transgender in the questionnaire. Only .3% of the overall data was identified as missing. As the missing data does not exceed the 5% threshold, the researcher did not need to utilize common methods for addressing missing data (e.g., Winsorizing, replacing the missing value with a mean value, or utilizing SPSS to estimate missing values) (Field, 2018).

Subscales

To create the alcohol outcomes complexity subscale, the researcher first recoded the existing responses for items in question 16 in the NCHA II as follows: “N/A, don’t drink” and “no” (i.e., no consequences from alcohol use) from 1 and 2 to 0, respectively, and “yes” from 3 to 1. A totaled scale of 9 items created a severity score/subscale ranging from 0 to 9, with higher scores representing increased complexity of outcomes from alcohol use.

To create the mental health complexity subscale, first the researcher recoded responses for items in question 33 in the NCHA IIc. This allowed the researcher to evaluate the impacts on mental health. The responses were recoded as follows: “no” was recoded from 1 to 0, and “yes” from 2 to 1. A totaled subscale score that ranged from 0 to 12, with higher scores representing increased complexity of mental health outcomes.

To assess the participants perception of frequency of their own alcohol use, the researcher recoded the responses to item 8A5 in the NCHA IIc as follows: “never used” from 1 to 0, “have used, but not in the last 30 days” from 2 to 1, “1-2 days” from 3 to 2, “3-5 days” from 4 to 3, “6-9 days” from 5 to 4, “10-19 days” from 6 to 5, “20-29 days” from 7 to 6, and “used daily” from 8 to 7. To assess the participants’ perception of frequency of alcohol use of their peers on campus, the researcher recoded the responses to item 9A.5 in the NCHA IIc as follows: “never used” from 1 to 0, “have used, but not in the last 30 days” from 2 to 1, “1-2 days” from 3 to 2, “3-5 days” from 4 to 3, “6-9 days” from 5 to 4, “10-19 days” from 6 to 5, “20-29 days” from 7 to 6, and “used daily” from 8 to 7.

To assess the participants’ perception of frequency of the alcohol use of a typical student at their school, the researcher recoded the responses to item 9A5 in the NCHA IIc as follows: “never used” from 1 to 0, “have used, but not in the last 30 days” from 2 to 1, “1-2 days” from 3 to 2, “3-5 days” from 4 to 3, “6-9 days” from 5 to 4, “10-19 days” from 6 to 5, “20-29 days” from 7 to 6, and “used daily” from 8 to 7. To assess the participants’ perception of frequency of alcohol use of their peers on campus, the researcher recoded the responses to item 9A.5 in the NCHA IIc as follows: “never used” from 1 to 0, “have used, but not in the last 30 days” from 2 to 1, “1-2 days” from 3 to 2, “3-5 days” from 4 to 3, “6-9 days” from 5 to 4, “10-19 days” from 6 to 5, “20-29 days” from 7 to 6, and “used daily” from 8 to 7.

The researcher addressed the outliers from question 10. In this variable there were outliers where participants indicated consuming over 20 drinks during the last time participant “partied”/socialized. This was addressed through Winsorizing the data as is common to address variables that are not representative of the sample. All responses that indicated a participant

consumed more than 20 drinks during the last time she “partied”/socialized were winsorized to 20 (Field, 2018).

The researcher addressed the outliers from question 12. In this variable there were outliers where participants indicated their perception of typical students at their school consuming over 20 drinks during the last time participant “partied”/socialized. This was addressed through Winsorizing the data as is common to address variables that are not representative of the sample. All responses that indicated a participant consumed more than 20 drinks during the last time she “partied”/socialized were winsorized to 20 (Field, 2018).

The researcher recoded the responses from item 45A1 in the NCHA IIc (the impact of alcohol on academic performance in the last 12 months) as follows: “this did not happen to me/not applicable” from 1 to 0, “I have experienced this issue but my academics have not been affected” from 2 to 1, “received a lower grade on an exam or important project” from 3 to 2, “received a lower grade in the course” from 4 to 3, “received an incomplete or dropped the course” from 5 to 4, and “significant disruption in thesis, dissertation, research, or practicum work” from 5 to 4.

The researcher recoded the responses from item 13 in the NCHA IIc (frequency of consuming five or more drinks of alcohol in one sitting) as follows: “n/a, don’t drink” and “none” from 1 and 2 to 0 respectively, “1 time” from 3 to 1, “2 times” from 4 to 2, “3 times” from 5 to 3, “4 times” from 6 to 4, “5 times” from 7 to 5, “6 times” from 8 to 6, “7 times” from 9 to 7, “8 times” from 10 to 8, “9 times” from 11 to 9, and “10 or more times” from 12 to 10.

The researcher computed and recoded variables into dichotomous variables in order to utilize controlled group matching from NCHA IIc. The researcher computed a new variable

(AgeNew) from item NQ46. The responses were recoded as follows: all entries that were 25 or more=0. All entries that were 24 and less=1.

The researcher computed a new variable (Female) from item RNQ47. The responses were recoded as follows: “female” remained as 1, “male” 2 to 0, and “non-binary” from 3 to 0.

The researcher computed a new variable (freshsoph) from item NQ51. The responses were recoded as follows: “1st year undergraduate” remained as 1, “2nd year undergraduate” from 2 to 1, “3rd year undergraduate” from 3 to 0, “4th year undergraduate” from 4 to 0, “5th year or more undergraduate” from 5 to 0, “graduate or professional” from 6 to 0, “not seeking a degree” from 7 to 0, and “other” from 8 to 0.

The researcher computed a new variable (Fulltimestudent) from item NQ52. The responses were recoded as follows: “full-time” remained as 1, “part-time” from 2 to 0, and “other” from 3 to 0. The researcher computed a new variable (Transfer) from item NQ53. The responses were recoded as follows “yes” from 2 to 1, and “no” from 1 to 0.

The researcher computed a new variable (Ethnew) from item NQ54. The data was winsorized for outliers and compounding factors. Participants were asked to self-indicate their race/ethnicity. Participants who selected two or more identifiers were winsorized and recoded from the sum total of their responses to 6 for “biracial or multiracial”.

The researcher computed a new variable (international) from item NQ55. The responses were recoded as follows: “yes” from 2 to 1, and “no” from 1 to 0.

The researcher computed a new variable (oncampus) from item NQ58. The responses were recoded as follows: “on campus residence hall” remained as 1, “fraternity or sorority house” from 2 to 1, “other college/university housing” from 3 to 1, “parent/guardian’s home” from 4 to 0, “other off-campus housing” from 5 to 0, and “other” from 6 to 0.

The researcher computed a new variable (workspartime) from NQ60. The responses were recoded as follows: “0 hours” remained as 1, “1-9 hours” from 2 to 1, “10-19 hours” from 3 to 1, “20-29 hours” from 4 to 0, “30-39 hours” from 5 to 0, “40 hours” from 6 to 0, and “more than 40 hours” from 7 to 0.

Data Screening

Descriptive Statistics

To begin, the researcher explored various descriptive statistics to get a better understanding of the participants in this study. For example, although the participants in the study were matched via matched factors, there are still other variables that aid in describing the sample. Descriptive statistics on the following variables are included: student’s housing, student’s status as an international citizen, student’s work status, student’s university status as a full- or part-time student, college or university of attendance regional location, and institutional type were explored. Along with the descriptive statistics previously described, inferential statistics (e.g., univariate analysis of variance [ANOVA], multivariate analysis of variance [MANOVA] multivariate analysis of covariance [MANCOVA]) were investigated.

Univariate Analysis of Variance

In this study, univariate analysis of variance (ANOVA) was utilized to determine if sorority membership status influenced the differences in outcomes guided by Social Norms Theory (Perkins & Berkowitz, 1986), and Baker and Siryk’s Model of Adjustment (1981). The variables used in this analysis explored the influence of sorority membership status on an individual’s perception of alcohol use on the participant’s campus, the individual’s alcohol use,

individual student behavioral outcomes, individual mental health outcomes, and a student's academic outcomes, respectively to address research question one (To what extent do sorority members differ from similar non-sorority members in perception of alcohol use?)

Multivariate Analysis of Variance

In addition to descriptive statistics, and ANOVA, a multivariate analysis was used to address research question two (To what extent do sorority members differ from similar non-sorority members in behavioral outcomes, mental health outcomes, and academic outcomes?). As this research question utilizes one independent variable (sorority membership status), and multiple dependent variables (behavioral outcomes, mental health outcomes, and academic outcomes), MANOVA is best suited to assess the multiple dependent variables simultaneously. Additionally, the utilization of statistical control with controlled matching allowed for the inclusion of specific covariates into the analysis to account for more variance in the model (Field, 2018).

Multivariate Analysis of Covariance

In addition to descriptive statistics, and multivariate analysis, an analysis of covariance was used to address research question three (To what extent do sorority members differ from similar non-sorority members in behavioral outcomes, mental health outcomes, and academic outcomes when mediated by perception of alcohol use, stress/anxiety, and alcohol use?). As there is the use of one independent variable (sorority membership status) and multiple dependent variables (behavioral outcomes, mental health outcomes, and academic outcomes), with the use of covariates (perception of alcohol use and alcohol use), MANCOVA was the appropriate analysis to utilize. The utilization of statistical control with controlled factor matching allowed

for the inclusion of specific covariates into the analysis to account for more variance in the model (Field, 2018).

Matched Control Groups

Due to the nature of the study design, random assignment could not be utilized to sort participants into “control” and “treatment” groups as it relates to sorority membership. Matched control groups were utilized to allow for simulation of random assignment, which allows the research to analyze if sorority membership status influences adjustment to college across behavioral outcomes, mental health outcomes, and academic outcomes. With matched control groups, the researcher was able to locate an exact match from the match group (sorority women) to the unmatched group (non-sorority women). For this study, the following variables were utilized as match factors and were selected based on the current body of research indicating factors that impact student success and adjustment in the university setting. The variables selected and used in this study were: age, sex and gender (which is a combined variable per ACHA standards), year in school (i.e. underclassmen [freshman and sophomore students] or upperclassman [juniors and seniors], enrollment status (i.e. full time or part-time), recent transfer status, ethnicity, international student status, currently living environment (i.e., off-campus, on-campus, sorority housing), and financial concerns (i.e. working part-time at less than 19-hours weekly or full-time working 21 hours or more weekly).

Limitations

With each study design there are also study limitations as threats to both internal and external validity. To begin, the timeline of this study brings with it the potential for compounding factors such as maturation of participants, potential crises on campus, changes in the environment, and attrition in the research program. Although this study’s design is not a true

experimental design as students self-select into membership of Greek-lettered organizations, matching through matched factors was utilized to statistically control for this concern. Threats to internal validity for this study include experimental mortality, and instrumentation. This study was collected over a period of time when students could graduate and leave the college or university setting and remove themselves from the program. Another threat to validity (external) is population validity. The focus of this study is on 4-year public universities and colleges that invite and allow ACHA to complete this study on their respective campuses. Due to the specific restraints of this study, it may be difficult for the findings from this study to be generalizable to other university and college settings. Further, due to the project and study design, this study relied heavily on self-report data which can be biased in nature (Creswell & Creswell, 2018; Field, 2018).

Conclusion

This chapter reviewed the methodology for the current research study. In this overview, the following were reviewed: purpose of the study, research design, participants, the instrument used for data collection, data analysis procedure, and limitations to the study.

CHAPTER FOUR

RESULTS

The purpose of this study was to examine the influences of sorority status membership on alcohol use, perception of alcohol use, student behavioral outcomes, mental health outcomes, and academic outcomes. This study aimed to add to the body of research and literature on the effect of membership in Greek-lettered organizations on student outcomes. This study controlled for socioeconomic status, year in school, ethnicity, transfer status, and age, as these are factors that have been determined to influence college adjustment. This chapter reviews the results of the data analyses for this study. The researcher will begin by providing a detailed review of data cleaning, and data screening. Additionally, the researcher will provide the results of the assumption checking and statistical analysis for each research question.

Description of Analyses

The researcher utilized SPSS software version 27 and version 28 to analyze the data. A .05 alpha significance level was utilized for all analyses. Only female participants were utilized in this study.

Research Question 1: To What Extent Do Sorority Members Differ from Similar Non-Sorority Members in Perception of Alcohol Use?

This researcher utilized a univariate ANOVA to examine the relationship between sorority membership status and perception of alcohol use. Sorority membership status (Greek or Non-Greek) represented the independent variable while perception of alcohol use represented the dependent variable.

Results for perception of alcohol use are presented in Table 4. A one-way ANOVA was conducted to determine if perception of alcohol use was different for female students with

different membership statuses to Greek-lettered organizations. Participants were classified into two groups: non-sorority members ($n = 7189$) and sorority members ($n = 8865$). The assumption of homogeneity of variances was violated, as assessed by Levene's test for equality of variances ($p = .087$). Even with the violation, ANOVA techniques are robust enough to evaluate with standard error with a larger sample as described by the Central Theorem Limit (Field, 2018). Data is presented as mean \pm standard deviation.

Perception of alcohol was statistically significant between membership groups, $F = 331.500$, $p = .020$, though there is a weak effect size ($\eta^2 = .020$). The perception of alcohol use increased from non-sorority members females ($n = 7189$, $M = 4.58$, $SD = 2.63$) as compared to sorority females ($n = 8865$, $M = 5.33$, $SD = 2.60$). The group means had a statistically significant difference ($p < .05$). Therefore, we can reject the null hypothesis and accept the alternate hypothesis. The results indicate that sorority women's perception of alcohol use was higher than their peers. The overall weak effect size ($\eta^2 = .020$) suggests that sorority membership status can only account for 2% of the increase in perception of alcohol use. This suggests that sorority membership has a small impact on sorority women's higher perception of alcohol use.

Table 4

RQ1: Univariate Analysis of Variance of the Effects of Greek Status on Perception of Alcohol Use

Variable and Source	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>	η^2
GREEKSTATUS	2254.871	1	2254.871	331.500	<.001	.020
Error	109185.940	16052	6.802			

Note. Computed using alpha = .05.

Research Question 2: To What Extent Do Sorority Members Differ from Similar Non-Sorority Members in Behavioral Outcomes, Mental Health Outcomes, and Academic Outcomes?

This researcher utilized Pearson correlations on the dependent variables. Moderately correlated dependent variables can impact the interpretation of results (Field, 2018; Tabachnick & Fidell, 2019). All dependent variables were correlated at a statically significant level at $p < .001$; with most correlations being small or moderate. To note, there is a fairly strong correlation between academic consequences from alcohol and behavioral outcomes; this is expected as there are four variables that represent overall impact of sorority membership status.

Table 5

<i>Correlations Between Dependent Variables</i>				
Variable	1.(r ²)	2.(r ²)	3.(r ²)	4.(r ²)
1. MHComplexScale	-			
2. AcademicAlcoholConseq	.135(.02)	-		
3. ConsequencesComplexScale	.203(.04)	.442(.20)	-	
4. Approximate GPA	.183(.03)	.039(.002)	.026(.0007)	-

The researcher utilized a univariate MANOVA to examine the relationship of sorority membership status on behavioral outcomes, mental health outcomes, and academic outcomes. Sorority membership status (Greek or Non-Greek) represented the independent variable while behavioral outcomes, mental health outcomes, and academic outcomes represented the dependent variables. Results of this analysis are represented in Table 6.

Assumptions were first checked using Box's Test of Equality of Covariance. Box's Test demonstrated significance across the dependent variables ($F = 102.183$; $p < .001$). Due to $p < .001$, the assumption of homogeneity was violated. Due to the large sample size of the study, the

significance may be found by the test regardless (Field, 2018). A Levene's Test of Equality of Error Variances was conducted. Levene's Test, across all but one dependent variable, demonstrated significance for Behavioral Outcomes, Academic Outcomes due to Alcohol Use, and GPA at a $p < .001$ level, and Mental Health Outcomes were statistically significant at $p = .415$. Tabachnick and Fidell (2019) and Field (2018) caution that due to the difference in sample sizes it can be expected to have greater variances and covariances. Using Wilks' Lambda, the dependent variables differed at a statistically significant level with respect to the effect of sorority status membership, $\Lambda = .937$, $F(4, 15265) = 254.942$, $p < .001$.

A one-way MANOVA was run to determine the effect of sorority membership on overall student outcomes. Four measures of student outcomes were assessed: Behavioral Outcomes, Academic Outcomes due to Alcohol Use, GPA, and Mental Health Outcomes. When sorority members were compared to non-sorority members, sorority members demonstrated an increase in behavioral outcomes ($M = 1.29$, $SD = 1.47$; $M = .68$, $SD = 1.15$), mental health outcomes ($M = 3.77$, $SD = 3.04$; $M = 3.68$, $SD = 3.02$), and academic consequences to due alcohol ($M = .54$, $SD = .68$, $M = .31$, $SD = .57$, respectively). Non-sorority members demonstrated a higher overall reported GPA than sorority members $M = 1.76$, $SD = .83$; $M = 1.68$, $SD = .70$, respectively).

Although the results showed a statistically significant relationship, sorority membership status only accounted for 5% of the increase in the presence of behavioral outcomes and 3.3% of the increase in alcohol related academic consequences. This indicates that sorority membership had a limited impact on the increase of alcohol related behavioral concerns and alcohol related academic consequences. The results suggest that sorority membership had no impact on the increase of mental health outcomes. Although overall approximate GPA was higher for non-

members than for sorority members, the small effect size suggests that only .3% of the increase was impacted by sorority membership.

There was a statistically significant difference between sorority membership on the combined dependent variables, $F(4, 15265) = 254.942, p < .001$; Wilk's $\Lambda = .937$, partial $\eta^2 = .063$. In review of the combined MANOVA model, sorority membership accounted for a 6.3% of the overall increase in presence of behavioral, mental health, and academic outcomes for the participants.

Table 6

RQ2: One-Way MANOVA Results

Variable	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>Sig.</i>	ηp^2
ConsequencesComplexScale	1431.859	1	1431.859	802.376	<.001	.050
MHComplexScale	29.848	1	29.848	3.251	.071	.000
AcademicAlcoholConseq	209.007	1	209.007	523.070	<.001	.033
Approximate GPA	22.363	1	22.363	38.776	<.001	.003

Note. Computed using alpha = .05.

Follow-up univariate ANOVAs showed that behavioral outcomes ($F(1, 15268), p < .001$; partial $\eta^2 = .050$), academic consequences due to alcohol ($F(1, 15268), p < .001$; partial $\eta^2 = .033$), and approximate GPA ($F(1, 15268), p < .001$; partial $\eta^2 = .003$) were statistically significantly different between sorority members and non-sorority members. There was not a statistically significant difference in sorority membership on mental health outcomes $F(1, 15268), p = .071$; partial $\eta^2 = .000$. Table 7 below provides detailed results on the follow-up ANOVA. These results remain consistent with the larger model described above, indicating that sorority membership accounts for a limited impact on the overall differences between groups when measuring behavioral, mental health and academic outcomes.

Table 7

RQ2, Model 2: One-Way ANOVA Results for Outcomes

Variable	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>Sig.</i>	ηp^2
ConsequencesComplexScale	1431.859	1	1431.859	802.376	<.001	.050
MHComplexScale	29.848	1	29.848	3.251	.071	.000
AcademicAlcoholConseq	209.007	1	209.007	523.070	<.001	.033
Approximate GPA	22.363	1	22.363	38.776	<.001	.003

Note. Computed using alpha = .05.

Research Question 3: To What Extent Do Sorority Members Differ from Similar Non-Sorority Members in Behavioral Outcomes, Mental Health Outcomes, and Academic Outcomes When Mediated by Perception of Alcohol Use and Alcohol Use?

The researcher utilized a univariate MANCOVA to examine the relationship of sorority membership status on behavioral outcomes, mental health outcomes, and academic outcomes. Sorority membership status (Greek or Non-Greek) represented the independent variable while behavioral outcomes, mental health outcomes, and academic outcomes represented the dependent variables. This analysis utilized the covariates of perception of alcohol use and alcohol use.

Assumptions were first checked using Box's Test of Equality of Covariance. Box's Test demonstrated significance across the dependent variables ($F = 102.183$; $p < .001$). Due to $p < .001$, the assumption of homogeneity was violated. Due to the large sample size of the study, the significance may be found by the test regardless (Field, 2018). A Levene's Test of Equality of Error Variances was conducted. Levene's Test, across all but one dependent variable, demonstrated significance for Behavioral Outcomes, Academic Outcomes due to Alcohol Use, and GPA at a $p < .001$ level, and Mental Health Outcomes were statistically significant at $p =$

.248. Tabachnick and Fidell (2019) and Field (2018) caution that due to the difference in sample sizes it can be expected to have greater variances and covariances. There was homogeneity of regression of slopes, as assessed by the interaction term between perception of number of drinks, number of drinks, and sorority membership status. Using Wilks' Lambda, the difference in the dependent variables differ at a statistically significant level with respect to the effect of sorority status membership, $\Lambda = .976$, $F(4, 15263) = 93.256$, $p = .024$.

The results of the one-way MANCOVA analysis found there were statistically significant differences between sorority membership status on the combined dependent variables with the covariates of perception of alcohol use and alcohol use, $F(4, 15265) = 93.256$, $p < .001$, Wilk's $\Lambda = .976$, partial $\eta^2 = .024$. These results indicate when mediating for perception of alcohol use and alcohol use, sorority membership accounts for 2.4% of the difference in the presence of outcomes.

Overall, sorority members have a higher level of behavioral outcomes and academic consequences when perception of alcohol use and alcohol use introduced into the relationship. There was no change in approximate GPA for either group after the introduction of perception of alcohol use and alcohol use into the model. After introducing perception of alcohol use and alcohol use into the model, non-sorority members demonstrated a slightly higher level of mental health outcomes than sorority members, which indicates that perception of use and actual use of alcohol has a larger impact on non-sorority members than sorority members on overall mental health outcomes. These results are displayed in Table 8.

status, and all dependent variables when mediated by perception of alcohol and alcohol use, except when explored with mental health outcomes. These results are found in Table 11 below.

Although the results showed a statistically significant relationship between sorority membership status, behavioral outcomes, academic outcomes, and approximate GPA, the results indicated that sorority membership accounted for a limited amount of the increase when mediated by perception of alcohol use and alcohol use. The results suggested sorority membership accounted for 1.5% of the increase in behavioral outcomes when mediated by perception of alcohol use and alcohol use. Sorority membership only accounted for 1% of the increase in academic consequences due to alcohol when mediated by perception of alcohol use and alcohol use. Further, non-sorority membership accounted for .3% of the change in overall approximate GPA when mediated by perception of alcohol use and alcohol use. Finally, the results suggest sorority membership did not have an impact on mental health outcomes when mediated by perception of alcohol use and alcohol use.

Table 11

RQ3, Model 2: One Way ANCOVA Results

Variable	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>Sig.</i>	ηp^2
ConsequencesComplexScale	328.693	1	328.693	237.301	<.001	.015
MHComplexScale	10.605	1	10.605	1.167	.280	.000
AcademicAlcoholConseq	56.062	1	56.062	160.624	<.001	.010
Approximate GPA	24.622	1	24.622	42.730	<.001	.003

Note. Computed using alpha = .05.

Summary

The results of the three research questions provide a varying level of support for the hypotheses. The first research question examined the relationship between sorority membership status and perception of alcohol use. The results indicated that sorority members had a higher perception of alcohol use than their peers. Despite the statistically significant relationship found,

the results of the one-way ANOVA indicate that only 2% of the increase in perception of alcohol use can be explained by sorority membership.

Research question two explored the relationship between sorority membership status and behavioral outcomes, mental health outcomes, and academic outcomes. The one-way MANOVA depicted both statistically significant and non-significant results. Sorority membership had a statistically significant relationship on behavioral outcomes and alcohol-related academic outcomes, but it only explained 5% of the increase in behavioral outcomes and only 3.3% of alcohol related academic outcomes. Additionally, there was a statistically significant relationship between sorority membership status and overall approximate GPA, with non-sorority members having a higher overall approximate GPA. Again, the results indicated that despite the significant relationship statistically, a low amount (0.3%) of this increase could be explained by sorority membership status.

The third research question explored the relationship between sorority membership status and behavioral outcomes, mental health outcomes, and academic outcomes when mediated by perception of alcohol use and alcohol use through a one-way MANCOVA analysis. The results for this model indicated that sorority members have a higher level of behavioral outcomes and academic consequences when perception of alcohol use and alcohol use are introduced into the relationship. Unlike other models used, there was no change in approximate GPA for either group after the introduction of perception of alcohol use and alcohol use into this model. After introducing perception of alcohol use and alcohol use into the model, non-sorority members demonstrated a slightly higher level of mental health outcomes than sorority members, which indicates that perception of use and actual use of alcohol has a larger impact on non-sorority members than sorority members on overall mental health outcomes. This result does demonstrate

a relationship mediated by perception of alcohol use and alcohol use. As with the other results, sorority membership status only accounted for or explained a small amount of variance in overall outcomes.

CHAPTER 5

DISCUSSION

Chapter one described the statement of problem while describing the purpose and significance of the study, explored the theoretical framework that guided the study, an overall description of the study, and perceived limitations of the study. In chapter two, a review of the current literature was conducted to discuss college student adjustment. In part, this review included a history of Greek-lettered organizations, the involvement of women in these organizations, and the connection to alcohol use for these students. Chapter three outlined the research methodology with a focus on guiding framework, research questions, and instrumentation used in the study. The fourth chapter reviewed the results found through the completed research study for each of the three research questions. This chapter will provide a review of the study, a discussion of the results, and implications of the findings of this study for various offices across the university, and will close with limitations and recommendations for future research.

Review of the Study

The study was designed to explore the relationship between sorority membership status on perception of alcohol use, behavioral outcomes, mental health outcomes, and academic outcomes. Additionally, this study explored the impact of sorority membership status when mediated by perception of alcohol use and alcohol use on the aforementioned outcomes. The study aimed to explore these relationships through the following research questions: 1) To what extent do sorority members differ from similar non-sorority members in perception of alcohol use, 2) To what extent do sorority members differ from similar non-sorority members in behavioral outcomes, mental health outcomes, and academic outcomes, and 3) To what extent do

sorority members differ from similar non-sorority members in behavioral outcomes, mental health outcomes, and academic outcomes when mediated by perception of alcohol use, and alcohol use? A one-way ANCOVA was conducted to address the first research question, a one-way MANOVA was conducted to address the second research question, and a one-way MANCOVA was conducted to address the third research question. Controlled matches were utilized to examine the impact of sorority membership status on these outcomes. The total sample ($n = 16,054$) included a group of non-sorority women ($n = 7,189$) and sorority women ($n = 8,865$) from across various colleges and universities ($n = 140$). All participants were matched on the following covariate criteria: socioeconomic status/employment, year in school, enrollment status, transfer status, age, residence either on/off campus, and international status. To ensure true controlled matches, participants were matched within their self-identified ethnicity before re-combining the data for analysis. By utilizing this design, the role of sorority status membership as an independent variable was examined in a mimicked randomized environment (Field, 2018).

The results indicated while there is a statistically significant relationship between sorority membership status and perception of alcohol use, behavioral outcomes, and academic outcomes, there is not a statistically significant effect of sorority membership status on mental health outcomes. Further, the effect of sorority membership status on these outcomes and alcohol use did not exceed 6.5% in any model. This demonstrates that, while statistically significant, sorority membership status cannot be determined to have a large practical implication on the changes in behavioral outcomes, mental health outcomes, or academic outcomes.

Understanding the Implications of the Results

College student adjustment has often been impacted by various factors, but previously the direct impact of sorority membership has not been widely examined due to the nature of self-selected group membership. College women join groups and organizations at higher rates than males as they utilize social connections to feel more connected to their college and/or university environment (Wessel & Salisbury, 2017). With this consideration, it is important for college and university communities to understand the implications of sorority membership on student adjustment as it relates to behavioral outcomes, mental health outcomes, and academic outcomes. The results of this study has implications across the university community as it further reinforces the perception that sorority members have a higher level of alcohol related behavioral concerns. Studying the impact of sorority membership in this way yields implications for student affairs practitioners, university leaders, and sorority organizations.

Implications for Student Affairs Practitioners

Greek Life. Membership in a Greek-lettered organization is one way college and university students seek to make a connection with their new environment. Membership in a Greek-lettered organization can foster a sense of belonging for students (Giordano & Cashwell, 2012). Overall membership in Greek-lettered organizations has continued to climb over the past decade and half (Greek Life Statistics, n.d.). This indicates more and more college women will at some point explore membership in a Greek-lettered organization. Fraternity and Sorority Advisors (FSAs), along with other staff members whose roles are to support students involved in Greek-lettered organizations, can support students' social adjustment by providing explicit educational programming surrounding the impact of perceived and understood with-in group norms (Palmer, 1928) as this was demonstrated to have an impact on participants' alcohol related

outcomes and academic outcomes when compared to similar non-affiliated peers. FSAs can partner with other offices on campus to provide specific programming for Greek-lettered students that focuses on understanding the impact of their alcohol use on their lives.

As established through the grounding literature for this study, there is a long history of Greek-lettered organizations in higher education in the United States (Binder, 2003). Starting in late 2019 and early 2020, colleges and universities across the country began seeing “Abolish Greek Life” movements on their campuses. This movement began as an effort to reform Greek Life on a larger scale to address historical behaviors associated with certain organizations and campuses as it relates to some of the behavioral outcomes explored in this study (Dennon A, 2021 & Lautrup, J., 2020). While this movement can bring awareness to some concerns that are present in Greek-lettered organizations, this study suggests that involvement in sororities may serve as a protective factor for mental health concerns. Further, sorority membership accounts for a minimal amount of the increase in behavioral, mental health and academic concerns for sorority women indicating that sorority membership is not solely responsible for these between group differences.

In providing a primary intervention for student’s alcohol-related behavioral consequences and academic consequences, FSAs can assist in student retention and increase overall student health and adjustment. This will not only lead to an improvement in adjustment for these students, but serves as a vehicle for retention as the increased level of adjustment can lead to the retention of currently enrolled students (Baker & Siryk, 1984).

Counseling and Health Centers. As college students transition to their new homes and environments, they are likely to experience an increase in their level of stress (Schlossberg, 1981). University counseling centers and health centers are established on campus to provide

support services to students throughout their college tenure. Although many students choose to engage in services within these organizations, counseling and health centers can also proactively seek to engage with Greek-lettered women on their campuses. As membership in Greek-lettered organizations continue to rise, there will be more students within these groups that could benefit from focused educational programming.

As college students' bonds to their university increase, so does their use of alcohol (Bishop, 2000). Utilizing an outreach structure, university mental health and health professionals can provide targeted programming for Greek-lettered women focused on the impact of alcohol on their mental health and alcohol-related behavioral outcomes. College women's use of alcohol has continued to increase, which suggests an increase in the need for support of these students on campus as consequences that are directly related to alcohol are greatly impacted by sex/gender (DeMartini & Carey, 2009; Larimer, Turner, Mallett, & Geisner, 2004; Pedrelli, Collado, Shapero, Brill, & MacPherson, 2016). Furthermore, dedicated programming toward women (and specifically those that are members of Greek-lettered organizations) should be provided as research indicates that women's decisions surrounding alcohol may be influenced by their membership within a specific group or organization (Likis-Werle, & Borders, 2017).

This study did not find a statistically significant relationship or impact between sorority membership and overall mental health outcomes. It should also be considered that membership to Greek-lettered organizations can be seen as a protective factor of both emotional and social adjustment (Baker & Siryk, 1984; Schlossberk, 1981). This would indicate that all students are impacted at similar rates regardless of organizational affiliation and could benefit from an increase in programming focused on stress management and the overall adjustment to the college environment. Non-affiliated students will not have the additional social supports and structures

that members of Greek-lettered organizations have as a direct result of their membership status and may need additional supports.

Other Student Affairs Professionals. As it has been established, college women, and specifically those that are members of Greek-lettered organizations, often have specific needs on their campuses. Other offices designated to support female students, such as Women's Centers, and offices that focus on programming related to alcohol and drug use can also provide additional support to sorority women. As seen in this study, the results reinforced the notion that sorority members should be targeted for group-specific education as sorority membership did demonstrate an increase in alcohol-related behavioral outcomes and alcohol-related academic outcomes. Further, members of Greek-lettered organizations have alcohol use patterns that are specific to organization-affiliated events (Juth et al., 2010). This provides a unique opportunity for partnerships between university offices and sororities to delivery this specific programming to their membership.

By tailoring the education to these students, concerns that are specific to their social norms can be met. This approach also allows other college and university personnel to work with these organizations to implement infrastructures for support in the future as opposed to providing tertiary or reactionary support to students in need. This will allow universities to engage in advanced planning for students needs which will support student affairs' staff members efforts to provide outcome-based programming.

Implications for University Leaders

Leadership on college and university campuses are often tasked with not only meeting student outcomes, but also meeting the needs of the university at large. Membership to Greek-lettered organizations can assist in student social and emotional adjustment (Baker & Siryk,

1984), which can also aid in an increase in student retention. Often, student affiliation with Greek-lettered organizations can be seen as a barrier for university programming. Administrators can utilize this affiliation to reach these particular students and their specific needs; therefore, administrators can further promote student development and student retention.

By nature, sororities are founded and established based on attracting members with similar values and beliefs, and an individual's friends' beliefs have a strong influence on a person's individual actions (Giordano & Cashwell, 2014). Further, sororities can be viewed as their own subcultural group based on their organizational culture (Perkins, Zimmerman, & Janosik, 2011; Palmer, 1928). With this knowledge, university leaders can aim to access these students differently while developing specific goals and programming meant to meet both student and university needs. As officials examine the need for these organizations on campus, it should be considered that while these organizations may bring with them specific behavioral concerns, it can also be seen as a protective factor for student retention. Historically, these organizations were seen to have a negative impact on student development, but this study indicates that sorority membership did not prove to have a large negative impact on behavioral, mental health, and academic outcomes.

Implications for Sororities and Sorority Membership

Greek-lettered organizations survive on campuses through recruitment efforts of current members. As current membership seeks to find new women to join their organization, sororities at large, and their local membership, can provide additional supports to women based on the current study's findings. As non-affiliated students join sororities, local and national organizations can provide specific education assisting students during their orientation to the group. As previously found by Grunner (2012), sorority women abuse alcohol at higher rates

than unaffiliated women, which should be considered as organizations recruit new members. While alcohol use is not specific to Greek-lettered organizations, these organizations do tend to utilize recruitment efforts that include alcohol (Juth et al., 2010). National organizations can provide programming surrounding the dangers of alcohol use as it relates to mental health and other behavioral consequences. Further, sororities, on a national level, can provide resources and encourage members to continue to evaluate the need for additional supports (e.g., mental health support/services and academic support/services) in a preventative manner. These educational programs can be divided by various needs based on student needs, (e.g., enrollment status, year in school, adjustment needs).

Limitations and Implications for Future Research

Limitations are present within any research study and should be considered when reviewing and interpreting results. Some of the limitations to this study were discussed in Chapter Three when the study design was reviewed.

Study Limitations

Participants in this study all attended four-year institutions which were members of ACHA, and data was collected through the use of the NCHA IIc instrument. This is a barrier to generalizability as data was only collected from 4-year public institutions which are paid members of ACHA. Further, these campuses invited ACHA to complete this study on their campus. Although the instrument itself has been determined to be valid and reliable (ACHA, 2015), there are still threats to internal and external validity. This study relied solely on self-report data which can be biased and influenced by bias-confirmation (Creswell & Creswell, 2019; Field, 2018).

There is no way to account for certain compounding variables such as student attrition in the research program, participant maturation, campus crises, and changes within the overall campus environment. For example, the data was collected four years ago, prior to the COVID pandemic. Copeland et al. (2021) suggest that college students' stress and overall mental health and well-being were impacted during the onset of COVID and the corresponding restrictions. As discussed in this study, in-group membership can be seen as a protective factor for potential mental health outcomes, and these supports were not always available to students during the onset of COVID restrictions. Schepis et al. (2021) found an increase in student alcohol use and engagement in binge drinking behaviors after the onset of COVID restrictions. This study determined that alcohol use, when identified as a mediating factor, has an impact in overall mental health outcomes for non-affiliated students.

In review of study design and data cleaning and screening, other limitations were present. As students were asked to self-select their results, data was cleaned for outliers and winsorized to account for these responses. Although this was done within evidenced based standards, it still serves as a potential limitation in the study (Creswell & Creswell, 2018). Due to the data being archival data, the researcher received data that was pre-cleaned in general, which may produce limitations as it was not conducted by this researcher. Additionally, in using archival data the researcher was unable to create variables within the study to measure other factors within this study. An additional external threat to validity of the study is researcher error when inferring data regarding participants in the study (Creswell & Creswell, 2018).

In review of the results of the data, overall effect sizes were small or weak (e.g., 0.003 to 0.063) which limits the generalizability of the results. This also limits the researcher's ability to determine the practical implications of the study (Creswell & Creswell, 2018; Field, 2018). As

such, the results could only determine that a small level of variance in outcomes (behavioral outcomes, mental health outcomes, and academic outcomes) were accounted for or explained by sorority membership status (Field, 2018).

Implications for Future Research

In part due to the limitations of this study, there are a few recommendations for future research. As this study used archival data, an instrument could be created to specifically measure certain variables and outcomes to evaluate variables in a more specific manner. The impact of the study was limited due to effect sizes, and this may increase generalizability of future studies. This study was limited to only female participants. The study could be replicated and focus on male participants and be more inclusive of all gender diverse individuals, and further replicated to focus on all participants who identify as members of Greek-lettered organizations. This would allow the comparison between participants to determine if sex or gender is a factor that should be considered in futures studies.

Although this study utilized race and ethnicity as a matching variable, exploring the rates of use, perceptions of use, and outcomes within specific race and ethnic groups was not explored. Examining within group differences of a sample can provide a richer description of potential compounding variables, while also providing a description of how various aspects of a person's identity may be a factor in their perception of and use of alcohol.

The study could be replicated with the inclusion of social supports as a mediating factor related to behavioral outcomes, mental health outcomes, and academic outcomes. The initial study utilized pre-COVID data. Duplicating the study with data collected during the early onset and continuation of the effects of COVID on campuses would also allow further exploration of the impact of social supports on Greek-affiliated student outcomes. Further research exploring

the relationship between post-COVID restrictions, student social supports, and alcohol use would allow further identification of the role social supports, or in-group membership, have on student overall mental health outcomes.

Another area of focus for future research would be to focus on incoming students who were enrolled in high school during COVID. These students may have different needs as they begin to transition into the college experience. New first-year students might seek in-group membership at different rates than previous first-year students. As seen in previous research, and in this study, in-group membership has an impact in overall student interactions and behaviors. These students will likely have unique needs than previous first-year students that were not in high school during the onset of COVID restrictions, and exploration of this impact on behavioral, mental health and academic outcomes would continue to add to the understanding of how social norms impact student behaviors.

This study explores the outcomes for sorority women; however, the lived experiences of students are not investigated in this study. Future research conducted from a qualitative lens can provide the lived experiences of sorority women, alcohol, behavioral outcomes, mental health outcomes, and academic outcomes in the context of their lived experiences. By gaining a better understanding of how sorority women perceive and interact with alcohol, it would allow sororities on a national level the ability to develop and provide programming to their membership.

Although this study explored the relationship between sorority membership status and outcomes, further research could include variables to account for students' access and use of available support services on campus. This factor would allow universities to determine which

resources students' view as accessible and beneficial. Further, this would allow for further exploration of current factors on overall student adjustment.

Conclusion

This study explored the impact of sorority membership on alcohol related behavioral outcomes, mental health outcomes, and academic outcomes within the framework of student adjustment. The study utilized controlled matched groups to further explore the impact of sorority membership on these outcomes to isolate the impact of sorority membership on specified outcomes. Findings from this study suggest that although there were statistically significant differences between the controlled groups, there is limited variance explained through these models. Results may imply that perception of alcohol use and alcohol use may mediate the relationship between sorority membership status and mental health outcomes and academic outcomes. Although limited variance was explained through these models, the results do suggest implications for college and university personnel and administrators, as well as for sororities on the national and local level.

Future research may be able to further examine the impacts of Greek-lettered affiliation through the creation of more specific scales to measure overall behavioral outcomes, mental health outcomes, and academic outcomes for both sorority and fraternity members. Results from this study can be utilized to inform university practices, implementation of resources, and presence of Greek-lettered organizations as sorority membership was not found to explain large amounts of variance in the differences between sorority and non-sorority members.

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APPENDIX A
RESEARCH DOCUMENTATION

American College Health Association Disclaimer

The findings, opinions, and final conclusions reported in this dissertation are those of the author, and do not represent the views, corporate opinions, or policies of the American College Health Association (ACHA). ACHA does not warrant or assume any liability or responsibility for the completeness, accuracy, or usefulness of any information presented within this dissertation.

Information on Darden College of Education and Professional Studies Exempt Research**Status**

From: Laura Chezan <no-reply@irbnet.org>
Sent: Tuesday, January 28, 2020 10:13 AM
To: Schwitzer, Alan M.
Subject: IRBNet Board Action

Please note that Old Dominion University Education Human Subjects Review Committee has taken the following action on IRBNet:

Project Title: [1537139-1] A Comparison of Sorority Women and Non-Sorority Women's Alcohol Use: Perception, Rate of Use, and Consequences
Principal Investigator: Alan Schwitzer, PhD

Submission Type: New Project
Date Submitted: December 9, 2019

Action: APPROVED
Effective Date: January 28, 2020
Review Type: Exempt Review

Should you have any questions you may contact Laura Chezan at lchezan@odu.edu.

Thank you,
The IRBNet Support Team

