

University of Nevada, Reno

**Effects of Living Arrangements on Risky Sexual Behavior of Greek-Letter
Organization Members at the University of Nevada, Reno**

A thesis submitted in partial fulfillment
of the requirements for the degree of

Bachelor of Arts in Psychology and the Honors Program

by

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May, 2018

UNIVERSITY

OF NEVADA

RENO

THE HONORS PROGRAM

We recommend that the thesis
Prepared under our supervision by

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entitled

**Effects of Living Arrangements on Risky Sexual Behavior of Greek-Letter
Organization**

Members at the University of Nevada, Reno

be accepted in partial fulfillment of the
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BACHELOR OF ARTS, PSYCHOLOGY

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May, 2018

Abstract

Self-selection into Greek-letter organizations (GLOs) and engagement in risky sexual behavior (RSB) are examples of what emerging adults participate in while attending college. GLO members engage in risky behaviors at higher rates than non-GLO counterparts. Past research finds living arrangements of GLO members to increase engagement in risky drinking and drug use. Limited research exists on how living arrangements influence RSB of GLO members. Through development of a comprehensive survey, analyses and comparisons were conducted on University of Nevada, Reno (UNR) undergraduates ages 18-25 by examining demographic factors and identifiers; living arrangements and roommate composition and influence; campus involvement in GLOs; risk taking attitudes; sexual behaviors; and alcohol and drug use. The results of this study enhance the understanding of how living arrangements affect RSB of GLO members at UNR and reveal potential gaps in related research. The results may influence and assist development of more specific and effective survey tools, in addition to how higher education administrators and public health officials improve and tailor health initiatives for students on and off campus.

Acknowledgements

The production of this thesis was made possible with the continuous and generous support of several individuals. They invested their advice and time in the development, revision, and completion of this project.

First, I would like to thank the Dr. Tamara Valentine and the Honors Program for the unique opportunities they offer to undergraduate students at the University of Nevada, Reno. Participating in a thesis project as an undergraduate student helps students prepare for networking, research, and professional work before and after graduation. My hope for future Honors students is that they take advantage of all the leadership, academic, and professional opportunities made available through the Honors Program.

Second, I would like to thank the Office of Undergraduate Research for awarding me the Honors Undergraduate Research Award. It was an honor to have my proposal recognized and to be chosen as a recipient for this prestigious award. Monetary funds were spent on subscriptions to Survey Monkey, Constant Contact, and for a temporary license for STATA software. Therefore, survey construction and dissemination, as well as data collection and analysis, were made possible by this funding.

Lastly, I would like to thank my mentor, Dr. Lisa Thomas, for her patience, expertise, and encouragement throughout this entire process. Her continual investment in my research interests, partnered with support of my mental health and endeavors outside of the project, made for a strong and reliable support system. I appreciate your dedication not only to your work in the Orvis School of Nursing but also to the success and well-being of any student who seeks you out for guidance. It was a privilege and an honor to work with you, and no words describe how grateful I am for your support and empathy.

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Ch. 1: Introduction

Background and Significance

The theory of emerging adulthood identifies the period after adolescence but before adulthood and typically refers to college-attending persons ages 18 to 25 (Arnett, 2000). During these ages, people explore multiple parts of their identity, one of which is love and sexual behavior (Arnett, 2000). Part of that exploration often results in what is called hook-up culture, a situation in which people agree to engage sexually without commitment ties, which potentially contributes to risky sexual behavior (RSB). Hook-up culture and RSB are more modern descriptions of what this form of identity exploration has become. With identity exploration also comes influences from self-selected friends and peer groups, and this study focuses on Greek-letter organizations (GLOs). While the terms “fraternity” and “sorority” refer to “more than three hundred and fifty national fraternity and sorority organizations classified as social fraternities” created in the mid- to late-nineteenth century (Torbenson & Parks, 2009, p. 15), the acronym “GLOs” is inclusive of all organizations with Greek letters in their titles, including multicultural fraternities and sororities, pre-professional and major-focused fraternities, and honor societies.

Research on GLO members reveals higher levels of engaging in risky behaviors than their non-affiliated counterparts (Barry, 2007 and Ragsdale, Porter, Mathews, White, Gore-Felton & McGarvey, 2012). Other research exposes correlations between risky alcohol and drug use in housing containing members of GLOs (Baer, 1994; Borsari & Carey, 1999; Brown-Rice & Furr, 2015; McCabe, Teter, Boyd, Knight & Wechsler, 2005; Sidani, Shensa & Primack, 2013; Wechsler, Kuh & Davenport, 2009;). In attempts

to find other effects of living arrangements on the risky behavior of GLO members, researchers swapped the dependent variable of alcohol and drug use with RSB and had inconsistent findings (Borsari & Carey, 1999; DeSimone, 2009; Ragsdale et al., 2012; Scott-Sheldon, Carey & Carey, 2008).

Problem Statement

Gaps and inconsistencies exist in the research concerning the effects of living arrangements on RSBs of GLO members. DeSimone (2009) reports fraternity membership through risky alcohol use has effects on unplanned and unprotected sex but does not make any connections with the living arrangements of those involved in these sexual encounters. Another study claims GLO members exhibit identical levels of risky behavior regardless of residence, but the authors believe members of a residence do play a role in RSB and need to be researched more (Scott-Sheldon et al., 2008). With continuous discrepancies in the literature and no consistent method to assess and survey the target population and factors of interest, results from previous studies do not clarify if a connection exists between living arrangements of GLO members and RSB. Researchers and psychologists need new, extensive, and comprehensive studies to verify their findings.

Purpose of Study

UNR was chosen as the target population for this research for four reasons. First, the university's students lived within a convenient and easily accessible proximity to the research being conducted. Second, the university is the state of Nevada's flagship institution of higher education, giving access to a larger student population to study. Third, a significant portion of the university's GLO population live in housing outside of

GLO-designated housing, which would allow me to investigate how housing affects RSBs and perceptions of RSBs. Finally, UNR is the only university in the state of Nevada with GLO-designated housing. These factors combined allowed me to investigate how living arrangements and GLO membership affect and influence RSB in an accessible population.

This study aimed to answer the following question: What factors cause living arrangements to influence RSB of GLO members at the University of Nevada, Reno (UNR)? To answer this question, previous data and findings are compared to the results of a comprehensive survey designed to collect the following data: demographic factors and identifiers; living arrangements and roommate composition and influence; campus involvement in GLOs; risk taking attitudes; sexual behaviors; and alcohol and drug use. To narrow the focus of the survey, the following examples of RSB were assessed: unprotected sex in the form of not using contraceptives; having multiple sexual partners between testing for sexually transmitted infections (STIs) and/or human immunodeficiency virus (HIV); lack of routine testing for STI/HIV; and having sex while under the influence of alcohol, prescription medication taken recreationally, and/or other substances. The survey was created using Survey Monkey and disseminated over a two-week period via the email marketing software Constant Contact to all undergraduate students at UNR, regardless of affiliation with GLOs. The use of Constant Contact allowed the thesis mentor to disseminate the survey to over 16,000 undergraduate students over a 48-hour timespan to reach all members of the target population while avoiding getting filed under the “Spam” folder.

The purpose of this research is to identify potential trends of increased RSB of GLO members with shared living arrangements, which parallel trends of increased alcohol and substance use of GLO members in similar housing. This research does not limit the search to these influences on RSB to GLO-designated housing like past studies (Borsari & Carey, 1999; DeSimone, 2009; Ragsdale et al., 2012; Scott-Sheldon et al., 2008). Rather, the survey aims to account for all forms of living arrangements that GLO members may encounter during emerging adulthood in college life. Identifying influences in all types of living arrangements aid higher education and public health administrators and officials improve and tailor health initiatives for different populations on and off campus. Overall, this study helps to bridge the data gap found in the research and lead future researchers to build better assessment tools and interventions to address the issues seen in GLOs and their heightened risky behaviors.

Ch. 2: Literature Review

Theory of Emerging Adulthood

Even though the term “emerging adulthood” was not created until 2000, psychologists have described this phase of development as early as 1950. As presented in *Identity: Youth and Crisis*, Erik Erikson’s (1968) work on psychosocial development references eight stages ranging from infancy to adulthood without any set of age ranges tied to each stage. The transition into adolescence from childhood is marked by new identifications that “force the young individual into choices and decisions which will, with increasing immediacy, lead to commitments for ‘life’” (p. 155). Each society differs in how long adolescence lasts, with some allowing for “sanctioned intermediary periods” consisting of “prolonged immaturity and provoked precocity” (p. 156). This period of latency contains a psychosexual moratorium in which young individuals participate in technical and social schooling deemed appropriate to their respective cultures (p. 156). This theory of a libido period between adolescence and adulthood does not allow for a second delay called “prolonged adolescence” (p. 156). Instead, a “psychosocial moratorium” is observed and comprised of two components: 1) “the sexually matured individual is more or less retarded in his psychosexual capacity for intimacy and in the psychosocial readiness for parenthood” and 2) “the young adult through free role experimentation may find a niche...which is firmly defined and yet seems to be uniquely made for him” (p. 156).

Daniel Levinson (1978) in *The Season of a Man’s Life* acknowledged similarities between his concept of a novice phase and Erikson’s psychosocial moratorium. Over the

three periods of the novice phase which take place from ages 17-33, young individuals face four major tasks: creating a dream or plan which can be integrated into the life structure, building relationships with mentors, developing an occupation, and “[f]orming love relationships, marriage and family” (Levinson, 1978, p. 90). Levinson (1978) agrees with Erikson that this shift into adulthood is not a delay of adolescence but rather “an intrinsic part of adulthood” (p. 71). Kenneth Keniston’s (1971) theory of youth in *Youth and Dissent: The Rise of a New Opposition* echo Erikson and Levinson, recognizing that “[m]illions of young people today are neither psychological adolescents nor sociological adults; they fall into a psychological no man’s land, a stage of life that lacks any clear definition” (p. 3). Keniston’s (1971) writing and research reflect the political atmosphere of the time, capturing the “tension between self and society” (p. 8) and “refusal of socialization” (p. 9) seen in movements dominated by younger generations.

This relatively new term “emerging adulthood” arose in Jeffrey Arnett’s (2000) *Emerging Adulthood: A Theory of Development from the Late Teens Through the Twenties*. Arnett (2000) recognizes Keniston’s (1971) use of the word “youth” as a reason why developmental scientists did not continue to investigate the transition from late adolescence to early adulthood (p. 470). Due to its ambiguity and limited focus on the activity of young individuals during the heightened social and political activism of the late 1960s and early 1970s, Keniston’s (1971) “youth” overpowered research interests explored in Arnett’s (2000) theory of emerging adulthood. Arnett (2000) also recognizes early scholars and researchers attempting to tie characteristics like role experimentation to adolescence rather than emerging adulthood (Hall, 1904 and Parsons, 1942).

With trends of delay in marriage and parenthood rising in the latter-half of the twentieth century, many young individuals in late adolescence and their early- to mid-twenties do not exhibit roles of long-term adulthood (Arnett, 2000). For many young individuals, the period of late adolescence to mid-twenties consists of enrolling in and completing degrees of education and vocational training pertinent to achieving established long-term goals related to careers and incomes (Chisholm & Hurrelmann, 1995). Upon completing this period, young individuals make choices with lifelong implications. Therefore, the theory of emerging adulthood encompasses the characteristics and experiences young individuals have from ages 18-25: “relative independence from social roles and from normative expectations” and “identity explorations in the areas of love, work, and worldviews” (Arnett, 2000, p. 473).

Emerging Adulthood and Risky Behavior

In their explorations of love and physical intimacy, emerging adults experiment more with sexual intercourse than adolescents (Michael, Gagnon, Lauman & Kolata, 1995). While emerging adults engage in more serious and romantic relationships, a more recent and prevalent trend among emerging adults at the collegiate level is engaging in hook-up culture. Sexual encounters with “no strings attached” are reinforced by social norms (England, Shafer & Fogerty, 2008; Paul & Hayes, 2002; Paul, McManus, & Hayes, 2000). College students tend to lack a universal definition for hook-ups, but three characteristics encompass the nature of a hook-up: there is no explicit, romantic relationship that exists between the parties involved; there is a lack of discussion on what sexual activities will occur during the encounter; and commitments to future intimate relations of any kind are not solidified (Stinson, 2010; Bogle, 2008).

Engaging in this new concept of hook-ups is the rise of risk behavior during emerging adulthood (Arnett, 2000). A range of these risk behaviors include RSB like unprotected sex, substance use, and risky driving behaviors like driving over the speed limit or driving a vehicle while under the influence of alcohol (Arnett, 1992; Bachman, Johnston, O'Malley, & Schulenberg, 1996). Engaging in risky behaviors is related to identity exploration in which emerging adults wish to acquire as many experiences as they can now that they are not limited by parental or guardian supervision and before adulthood responsibilities restrict their freedom (Arnett, 2000). Without having parents or guardians to monitor every decision made, and without restricting roles of adulthood, emerging adults pursue experiences more freely whether they are related to risky behavior or not (Arnett, 2000). In the absence of parental supervision and marital and parental responsibilities, the opportunities to explore and experiment with risky behaviors, particularly RSB, and the influences of friends, peers, and self-selected groups are present and dangerous.

Emerging Adulthood and Membership in GLOs

For emerging adults beginning college and in search of peers and groups who share similar values and ideologies, GLOs often serve this purpose for college students. These organizations have “socially learned rules [which] govern group life, a shared way of viewing and talking about oneself, a social structure complete with a history and rituals, and a set of beliefs and assumptions to endorse” (Arnold & Kuh, 1992; as cited in Borsari & Carey, 1999, p. 32). Several benefits are experienced from joining GLOs, including long-lasting friendships and connections, involvement in philanthropic events and efforts, and development of commendable personal values (Flanagan, 2014). With all

these elements and benefits residing in a single group, these organizations are convenient and easily accessible to emerging adults looking for avenues to establish college lifestyles (Borsari & Carey, 1999). Future members of fraternal organizations depend more on peer relationships (Wilder, Hoyt, Surbeck, & Wilder, 1986) and display higher levels of social orientation than other students who choose not to join (Marlowe & Auvenshine, 1982). Overall, students who join GLOs are more open to the social impacts and influences of these organizations (Borsari & Carey, 1999).

Accompanying these social impacts and influences is the increased exposure and engagement in risky behaviors (Barry, 2007; Borsari & Carey, 1999; Brown-Rice & Furr, 2015; Ragsdale et al., 2012). In a systematic literature review of 18 cited studies and 33 examined studies overall published between the years of 1984 and 2003, Barry (2007) argued:

fraternity and sorority members are a subgroup of college-aged individuals who consume alcohol in greater quantities, underscore and misperceive the risk associated with their alcohol abuse, and emulate a social environment and culture in which drinking alcohol is a key part of life. (p. 312)

Ragsdale et al. (2012) found positive correlations between Greek membership and “binge drinking and frequent binging and with experience of alcohol-related injury, physical fights, DUI, sexual victimisation, unwanted sex and unprotected sex” (p. 336).

Emerging Adulthood and Living Arrangements

A demographic area that ties into the explorations of emerging adulthood and the influence of peers and groups like GLOs is residential status while attending college (Arnett, 2000). Students have a wide variety of choices when it comes to housing: on-

campus residence halls; off-campus student housing, apartments, homes, and GLO-designated houses; and parent, guardian, or a family member's residence. Frequent changes in residential status speak to the exploratory nature and instability of emerging adulthood (Arnett, 2000). As health and safety issues arise with risky behaviors of GLO members, one body of research focuses on students living in Greek housing or with Greek members in other settings and how these living arrangements affect the risky behaviors of GLO members (Borsari & Carey, 1999; Wechsler et al., 2009; Baer, 1994; Sidani et al., 2013; McCabe et al., 2005).

Effects of Living Arrangements on Risky Behavior of GLO Members

One risky behavior of GLO members assessed in relation to living arrangements is alcohol use. Borsari and Carey (1999) name five major themes in literature starting in 1980 concerning fraternity drinking. One major theme is the physical environment of the fraternity house, recognizing that most "socialization and drinking in the Greek system occurs in a fraternity house" (Borsari & Carey, 1999, p. 34). Consistent findings show that those who live in fraternity houses are more likely to abuse alcohol than other students who live elsewhere (Wechsler et al., 2009; Baer, 1994). Borsari and Carey (1999) claim fraternity members engage in enabling and pro-alcohol environments for four reasons: lack of adult supervision and constraints; increased opportunities to drink at parties; high tolerance of intoxication and drunken behavior; and increased care and protection from consequences for those who become too sick or impaired from drinking. Borsari & Carey (1999) only assessed the risky behavior observed in social fraternity houses which house male GLO members. Brown-Rice & Furr (2015) conducted a study on wet and dry fraternity houses and dry sorority houses at a Midwestern university

during the 2012-2013 academic year. Using the Alcohol Use Disorders Identification Test-Consumption (AUDIT-C), which is used as a valid screening test for binge drinking, the study found that “[r]egardless of whether Greek houses have a dry or wet status, drinking levels appear to be high and exceed what is considered safe on the AUDIT-C for both men and women living in Greek housing” (p. 360).

Another risky behavior of GLO members influenced by their living arrangements is smoking and other illegal drug use. One study compares involvement in GLOs, living arrangements, and hookah tobacco smoking and found the percentage of Greek resident members smoking marijuana, hookah, and cigarettes outweighed their Greek non-resident member and non-Greek counterparts (Sidani et al., 2013). When assessing illicit use of prescription drugs, McCabe et al. (2005) found usage rates for stimulants like Ritalin, Dexedrine, and Adderall were highest for GLO members who live in GLO-designated houses. According to these studies, risky behaviors of GLO members tend to occur more often when their living arrangements coincide with GLO-designated housing.

Effects of Living Arrangements on RSB of GLO Members

As mentioned previously, RSB is another form of risky behavior emerging adults engage in while attending college. A comparison of multiple studies finds discrepancies in whether the influence of living arrangements on engagement and perceptions of RSB of GLO members are significant or not (DeSimone, 2009; Ragsdale et al., 2012; Scott-Sheldon et al., 2008). Contrary to the trends found with Greek resident members and risky alcohol and drug use (Borsari & Carey, 1999; Wechsler et al., 2009; Baer, 1994; Sidani et al., 2013; McCabe et al., 2005), DeSimone (2009) states “[r]esidents of fraternity housing are less likely than students living off-campus...to engage in unsafe

sex” (p. 348). Due to a control implemented in the study, DeSimone (2009) found fraternity residences only house 21% of members. Therefore, observing only GLO members who live in GLO-designated housing ignores the majority of GLO membership. Without considering the entire GLO membership, data cannot support the claim that GLO-designated housing influences membership effects like engaging in risky behavior. None of the methods used in the study considers Greek members with other living arrangements outside of GLO-designated housing. Including GLO non-residents in the sample size offers a larger sample to assess and determine if living arrangements outside of GLO-designated housing influence members’ risky behavior, especially when it comes to RSB.

In terms of RSB, Ragsdale et al. (2012) and Scott-Sheldon et al. (2008) echo similar findings to DeSimone (2009). Ragsdale et al. (2012) found Greek students are “less likely to engage in unprotected sex as compared to non-Greek students” (p. 336). In fact, Ragsdale et al. (2012) concludes “the main effect of gender is more important than Greek membership” when RSB is concerned (p. 336). Scott-Sheldon et al. (2008) state there are “no differences in health behaviors among Greeks who were or were not living in [GLO-designated] housing” (p. 6) but are unsure about the extent of these findings about risky behaviors and whether the results are influenced by the small sample size of students living in Greek housing used, the social network of GLOs regardless of housing, or another unknown factor. Even though Ragsdale et al. (2012) and Scott-Sheldon et al. (2008) do not support Borsari & Carey’s (1999) findings, Scott-Sheldon et al. (2008) urge for future research to examine how much influence Greek housing has on risky health behaviors.

Current University Data and Research

In the past year, a study conducted at the university of Nevada, Reno (UNR) assessed health behaviors of undergraduate students, and one focus of the study was sexual health (Christensen, 2017). Thirteen-percent ($n/N = 281/2045$) of the responses to the comprehensive health behavior survey identified as being a member of a GLO. Of all the questions asked by the survey, 18.3% ($n/N = 11/60$) of the questions were dedicated to sexual health. The study fails to discuss any data pertaining to sexual behaviors of GLO members, including how the data correlate with residential data collected in the demographics portion of the survey. If those sets of data were analyzed, one could have expanded upon a potential link between living arrangements and RSB of GLO members.

With the presented background information, in addition to the findings and pitfalls of previous research, this current study looks to assess how identity explorations of emerging adults in GLOs and the living arrangements of GLO members affect their engagement in RSB. The survey designed to investigate these intersections is interested to find whether a correlation exists between where GLO members live, who GLO members live with, and the RSB of GLO members. The research aims to focus on RSB of GLO members since the population falls into the category of emerging adults who attempt to self-select into social groups which exhibit similar risky behaviors and mindsets. While current studies are beneficial, data are still lacking on how much RSB of GLO is affected by living arrangements. This research seeks to fill this gap in the literature.

Ch. 3: Methodology

Research Design

This study followed procedures and dissemination methods, as well as methods of data collection and analysis, utilized in a previous study conducted at the target university (Christensen, 2017). This research employed a retrospective cohort design, which compares one group exposed to the same factor to another group of equivalent participants not exposed to the same factor. In this study, GLO membership was the factor which separated the participants into two comparable groups. In addition, data from UNR participants were compared to a variety of studies conducted on individuals like those at UNR but at different institutions of higher education. Variables identified in this study are based on responses to demographic, health behavior, and risk perception survey items. The survey developed for this study was author-developed. See Appendix A for a full copy of the survey.

Research Question

The following research question was utilized to guide this study: What factors cause living arrangements to influence RSB of GLO members at UNR?

Sample and Recruitment

UNR was chosen as the target population for this research for four main reasons. First, efficient research is guaranteed through the proximity and accessibility of respondents. The research team's connection with the students and resources on the UNR campus gives the research a better chance of collecting valuable and reliable data than seeking respondents at another university in a different city and/or state. Second, UNR is Nevada's land-grant institution and therefore one of the largest institutions of higher

education in the state of Nevada. In this role, UNR services students from all parts of Nevada. UNR's position as a Tier 1 institution also draws in students from different parts of the United States and different countries. Third, personal observations reveal GLO members at UNR reside in multiple forms of living arrangements besides GLO-designated housing. The variety in living arrangements and roommate composition (i.e. GLO member and/or non-GLO member roommates) that GLO members choose to reside in offers data which are comparable to research performed specifically on GLO-designated housing. Lastly, all GLO-designated housing in the state is located solely within proximity and in affiliation with the UNR campus. The University of Nevada, Las Vegas (UNLV) is the only other institution of higher education in Nevada with a comparable amount of GLOs, but their lack of GLO-designated housing leaves UNR as the sole state university in which data can be collected on all traditional forms of GLO member living arrangements. The combination of these factors allowed the study to investigate and analyze how RSB is affected by living arrangements and GLO membership in an accessible population.

Prior to its dissemination, the author-developed survey received exemption from the UNR institutional review board (IRB). See Appendix B for the IRB exemption letter. Population sampling of all eligible undergraduate students attending the target university was used to recruit participants for the study. Eligible participants included part- and full-time undergraduate students ages 18 to 25 who were enrolled at the university for at least one semester. While the focus of the study is to identify the effects on living arrangements on RSBs of GLO members, both GLO and non-GLO members were encouraged to participate to create a large sample size and counterparts to the target

population to serve as a control group. Potential participants were identified via a list of names and email addresses from the UNR Admissions and Records department and contacted about participation in the study using Constant Contact. The thesis project advisor was given permission and access to this list of first and last names and email addresses of all undergraduate students; the student researcher for this project did not have any access to this list or the Constant Contact account used to disseminate the survey. In addition, social media posts with a link to and description of the survey were posted in select Facebook groups of student groups at the target university which the student author had access and posting rights to (i.e. Nevada Greek; Blue Key, Nevada Chapter; Kappa Sigma Nevada, General Group). Using goodness of fit contingency tables with an alpha error of 0.05 ($df = 20$), an a priori power analysis (G*Power 3.1.9.2) determined the following: a sample size of at least 123 participants was needed to detect a large effect size, at least 342 participants for a medium effect size, and at least 3,074 for a small effect size. With these statistical measures in place prior to data analysis, chi square tests (X^2) were used to compare and examine variables for statistical significance. Due to a limited timeframe allowed for this study and a need to allow for invalid participant responses, the recruitment goal for the population sampling was at least 1,000 eligible participants.

Human Subjects Protection

To protect human subjects who participated in this study, the survey received IRB exemption prior to the dissemination of the survey. Prior to filling out the survey, students received the welcome letter explaining the purpose of the study, who is eligible to participate, the anonymity of the survey results, and a statement explaining

continuance with the survey implies their consent to participate in the study and completion of the survey constituted informed consent. See Appendix C for the welcome letter. Data were collected through Survey Monkey, which allows researchers the option to track IP addresses of respondents. This study did not collect IP addresses from participants to preserve anonymity of responses. Students interacted and completed the survey without having any identifiable information or IP address attached to their response record.

Instrumentation

An author-developed survey collected data used to identify the effects of living arrangements on RSBs of GLO members at UNR and other significant trends in the target population. The survey was comprised of 56 questions divided into six sections: (1) demographic information in terms of age, sex and gender, sexual orientation, race, relationship status, enrollment status and year in school, grade point average (GPA), college affiliation (e.g. College of Liberal Arts), status with the United States Armed Services, participation in organized college athletics, and current residence (i.e. “Where do you currently live” and “How many other students live with you in your primary residence”) (questions 1-15); (2) living arrangements in terms of roommates’ influence (e.g. “My roommates influence my level of alcohol use”) (question 16); (3) campus involvement in terms of GLO membership, categories (i.e. Interfraternity Council fraternity, Panhellenic Council sorority, Multicultural Greek Council fraternity or sorority, pre-professional or major-focused fraternity, honor society) and focus areas (i.e. social, academic, service, culture, professional) of respondent and roommates (questions 17-26); (4) risk taking questions via the Knowles Risk Taking Questionnaire (e.g.

whether they agree or disagree with the statement: “Being a little reckless is good for you”) (question 27); (5) sexual behaviors (e.g. number and sexual orientation of sexual partners, frequency and type of sexual acts, use of contraceptives and protective barriers during sex, and STI and HIV screening, diagnosis, and treatment) (questions 28-36); and (6) alcohol and substance use (questions 37-56).

Questions from the American College Health Association-National College Health Assessment II (ACHA-NCHA-II) (2017) were adapted and edited in sections 1 (questions 3-10 and 12-14), 3 (question 17), 5 (questions 28-36) and 6 (questions 45, 48, 51 and 54) due to the ACHA-NCHA-II’s comprehensive structure and relevance to emerging adults, as well as the possibility to compare data from the surveyed university to national data. Questions that expand upon existing ACHA-NCHA-II (2017) questions and compensate for demographics and material not covered by ACHA-NCHA-II (2017) questions were added. Most of Christensen’s (2017) survey also used questions from the ACHA-NCHA-II. To prevent redundancy and a lack of interest from potential participants, as well as to fit the research question of this study, questions from this survey which overlapped with Christensen’s (2017) survey were adapted or expanded upon. For example, Christensen’s (2017) survey asked “Are you a member of a social fraternity or sorority?” whereas this survey uses the term “Greek-letter organization” and specific details about membership (i.e. GLO category and focus area and membership in terms of number of GLO memberships, hours per week spent participating in GLO, and leadership positions held).

Section 4 covers risk propensity and aversion using the Knowles Risk-Taking Questionnaire (RTQ) (Knowles, 1976). Originally created to address problems with

describing risk taking behavior using data from gambling experiments, the RTQ consists of “variables which assess the willingness to approach or avoid risk” (Knowles, 1976, p. 251). RTQ supports strong consistency between motivational measure of risk and willingness to engage in risk taking situations. Approval was obtained from Knowles (personal communication, November 27, 2017) via email communication to utilize the questionnaire to assess risk taking behavior. Wording of the original questionnaire was edited for this study. The purpose of using this questionnaire was to analyze consistencies in an individual’s engagement in risk taking behaviors (Knowles, 1976). Question 16 consists of 20 statements total scored on a 5-point Likert scale ranging from 1 “Strongly Agree” to 5 “Strongly Disagree.” The 11 risk-avoidant items are scored directly while the 9 risk motivated items are scored reversely and subtracted from 6. The scores for each item are added together, meaning a higher total score indicates greater likelihood in engaging in risk taking behavior. Total scores for this instrument range from the lowest possible score of 20 (low risk taker) to the highest possible score of 100 (high risk taker). The initial use of this tool showed an internal consistency measured at $r_{20} = 0.85$ for a sample of 146 undergraduates, which meant the scores on similar items were related and statistically significant (Knowles, 1976). However, in the same study Knowles (1976) claimed “the RTQ tends to be uncorrelated with sex ($r = -.13$, $n = 136$; $r = -.04$, $n = 166$)” (p. 310). While the Knowles (1976) study involved undergraduates as participants, no data on age were reported. Knowles (1976) continued to state age “may be related to decreases in the willingness to approach risk situations rather than to changes in the cautiousness of risk strategies chosen” (p. 301). Amanda Stallings (2016) used RTQ in a UNR study to focus on how susceptible young adults are to sustain traumatic brain

injuries when engaging in risk taking behavior. While trends between responses of participants ages 18 to 24 and participants ages 25 or older were identified, the overall scores were not compared to RSB of respondents. Therefore, use of the RTQ in this study differs from previous studies. The RTQ is used in terms of age outlined in the theory of emerging adulthood and risky behaviors (i.e. RSB and alcohol and drug use) of respondents.

The first part of section 6 (questions 37-41) utilized the screening tool known as the Alcohol Use Disorder Identification Test (AUDIT). Originally, the AUDIT served “as a screening instrument for hazardous and harmful alcohol consumption” and “provide[d] a simple method of early detection of hazardous and harmful alcohol use in primary health care settings” (Saunders, Aasland, Babor, De La Fuente, & Grant, 1993, p. 791). The AUDIT was chosen for this study based on its increased reliability when used to screen college students for risky, binge drinking behaviors. (DeMartini & Carey, 2012; Dhalla & Kopec, 2007; Olthuis, Zamboanga, Ham, & Van Tyne, 2011). The empirical guidelines used to score the AUDIT display developments in identifying at-risk drinking patterns among observed populations (DeMartini & Carey, 2012). Babor, Higgins-Biddle, Saunders & Monteiro’s (2001) scoring and interpretation guidelines state each response is scored on a range from 0-4, and scores from all responses are added together to determine the participant’s level of risky alcohol use. Babor et al. (2001) determined a cut off score of 8 as an indicator of risky drinking with scores higher than 8 indicating potential harmful drinking and likely dependence. DeMartini & Carey (2012) confirmed the effectiveness of using the cutoff score of 8 in terms of sensitivity and specificity. When analyzed in terms of detecting at-risk drinking, sensitivity is “the proportion of

actual at-risk drinkers who are identified as being at risk” and specificity is “the proportion of not-at-risk drinkers who are identified as not-at-risk” (DeMartini & Carey, 2012). The AUDIT yields 82% sensitivity and 78% specificity when using a cut off score of 8 (DeMartini & Carey, 2012). Questions 37 and 38, along with the first item in question 39 (i.e. “How often do you have six or more drinks on one occasion?”) test for consumption patterns and constitute a briefer screening known as the AUDIT-C. Responses to the AUDIT-C are scored the same way responses to the AUDIT are, but the highest score on the AUDIT-C is 12. DeMartini & Carey (2012) also assessed the effectiveness of the AUDIT-C in screening for at-risk binge drinking in both females and males since the AUDIT-C proved to perform better than the AUDIT when screening female participants and equally as well as the AUDIT when screening male participants. In the case of female participants, DeMartini & Carey (2012) found using the cutoff score of 5 produced 82% sensitivity and 82% specificity. In the case of male participants, using a cutoff score of 7 resulted in 80% sensitivity and 88% specificity. AUDIT and AUDIT-C scores of participants in this study are analyzed in comparison to age, current residence, roommates’ influence on level of alcohol use, and RSB.

Data Collection Procedure

Upon receiving exemption from the UNR IRB, this project’s thesis advisor obtained the master list of undergraduate students’ email addresses (N = 16,333) from the UNR Admissions and Records department. Through the use of Constant Contact, the survey was disseminated to all undergraduate students on 29 January 2018. A second email was sent on 5 February 2018, and data collection ceased on 11 February 2018. The responses were recorded using Survey Monkey. All technological mediums with Internet

connection could access the survey. Only eight questions required responses while the remaining questions were optional. The first two mandatory questions (1-2) served as screening tools to check respondents' eligibility to complete the survey. Participants needed to be over the age of 18 at the time of taking the survey and enrolled either part-time or full-time at the target university during the Fall 2017 semester. The other six mandatory questions (3-4, 9, 11 and 14-15) were included in the demographic focus area and collected data on age, sex assigned at birth, year in school, UNR major affiliation, and current residence and roommates. Open and continuous communication was encouraged and offered between respondents and the student and thesis advisor after the survey was disseminated and opened for response collection and inquiries.

Data Analysis

Descriptive and inferential statistics were used to analyze the data collected through Survey Monkey. Statistical analysis operated through the use of the STATA 13.1 statistical program. The data analysis included types of descriptive statistics (i.e. measures of frequency and measures of central tendency) and chi square analysis. Pearson's chi square analysis was used to compare demographic variables, living arrangements, campus involvement in GLOs, sexual behaviors, and alcohol and drug use to identify significant relationships within the total and subsets of the total undergraduate population. Means, standard deviations, and medians were calculated for questions which dealt with continuous values like age, in addition to being calculated for the total numerical scores collected from the RTQ and AUDIT and AUDIT-C screening tools. The RTQ measures a participant's consistency in engaging in risk taking behaviors (Knowles, 1976), which was relevant to this study's focus on emerging adults and their engagement

in RSB and other risky behaviors. In this study, the RTQ was used to determine trends and patterns between participants' RTQ scores and engagement in risky behaviors. RTQ used 20 items, with five answer choices for each item. The 9 risk motivated items were scored reversely while the 11 risk-avoidant items were scored directly. Therefore, a high score indicates risk motivation. Total scores for this instrument range from 20 (low risk taker) to 100 (high risk taker). The AUDIT is a screening tool which identifies patterns in alcohol use and potential alcohol use disorders. The AUDIT-C screens for consumption patterns which resemble binge drinking. Alcohol use, especially binge drinking, is a type of risky behavior emerging adults engage in, particularly at the collegiate level and in conjunction to other risky behaviors such as RSB. AUDIT and ADUIT-C scores and engagement in risky behaviors reported by participants were compared and analyzed to identify any trends or patterns. The AUDIT contained 10 items, and each item had five answer choices scored from 0 to 4. The AUDIT-C consisted of the first three questions of the AUDIT and followed the same scoring guidelines as the AUDIT. The participant's total scores for both alcohol use screening tools resulted from adding together the scores from all items and were compared to cutoff scores to determine riskiness of drinking behaviors and potential binge drinking.

Budget and Funding

Most of the monetary funds to support this study were provided by the UNR Office of Undergraduate Research through the Nevada Honors Undergraduate Research Award. Monetary funds were spent on subscriptions to Survey Monkey, Constant Contact, and for a temporary license for STATA software. Smaller purchases made to access relevant articles and sources were made by the author.

Ch. 4: Analysis

This study aimed to better the understanding and increase the collection of data on the living arrangements and risky behaviors of GLO members at UNR through identification of significant trends. The following research question guided this study:

What factors cause living arrangements to influence RSB of GLO members at UNR?

This chapter is comprised of descriptive findings from each survey item, with special attention to significant trends or patterns in data and how they compare to university-specific data and data from previously cited studies. Additional trends or patterns were also identified. See Appendix A for the full survey and raw data.

Description of Sample

For this study, the method of population sampling was used to collect the data. Once IRB exemption was obtained, a welcome letter outlining the purpose, eligibility, anonymity of results, and consent guidelines for the study was developed and embedded in an email and Facebook group posts. Two separate links to the survey were created to track survey responses from the email and Facebook group posts. The use of Facebook group posts was chosen as another method of reaching the target population due to the author's affiliation and posting rights with specific Facebook groups (i.e. Nevada Greek; Blue Key, Nevada Chapter; Kappa Sigma Nevada, General Group) frequented by GLO members at the target university. See Appendix C for the welcome letter which accompanied the link to the survey. This email was disseminated via Survey Monkey to a total of 16,333 undergraduate students attending UNR on 29 January 2018. The first Facebook group posts were made on 31 January 2018 to avoid interrupting the

dissemination of the first email over the span of three days. The Constant Contact emailing software tracked the email addresses of students who did not interact with the link sent in the first round of emails. If a student clicked on the link from the first email sent on 29 January 2018 but did not complete the survey, they were not included in the second round of emails. A second email including the same introductory letter and link to the electronic survey was sent out on 5 February 2018 to only those 14,780 students within the original list who did not open the survey link. The second Facebook group posts were made on 7 February 2018 to maintain a week in between the first and second postings. By 11 February 2018, a total of 2,049 responses were collected, with 2,003 responses from the email link and 46 responses from the Facebook group links. After analyzing the responses, 270 participants were omitted because they either fell out of the desired age range predetermined by the study's use of the theory of emerging adulthood, which was ages 18-25, or were not enrolled full-time or part-time at the target university during the Fall 2017 semester. The final sample consisted of 1,779 full-time and part-time UNR students between ages 18-25.

Demographics

The first section of the survey (questions 1-15) gathered descriptive findings on the demographics of participants. The demographics questions concerned age, sex assigned at birth, gender identity, sexual orientation, race/ethnicity, relationship status, enrollment status and year in school at UNR, GPA, college affiliation (e.g. College of Liberal Arts), status with the United States Armed Services, participation in organized college athletics, and living arrangements.

Age. The age of participants ranged from 18 to 25 years old, upholding the study's utilization of the emerging adulthood theory (Arnett, 2000). The study yielded a mean age of 20.0 ($SD=1.66$) and median age of 20. To facilitate data analysis with emerging adulthood and legality of alcohol and substance use in mind, the age range was split into two groups. The age range with the highest frequency was 18 to 20 years old, comprising 65.7% ($n/N = 1,169/1,779$) of responses. The remaining responses were grouped into the age range of 21 to 25 years old, making up 34.3% ($n/N = 610/1,779$) of responses. These frequencies yielded similarities with data collected for a UNR study (Christensen, 2017) in Spring 2017 and nationally for the Spring 2017 ACHA-NCHA-II. See Appendix D, Table D1 for comparisons.

Sex assigned at birth. Most participants, 73.0% ($n/N = 1,299/1,779$), identified as being female at birth, while 26.8% ($n/N = 476/1,779$) identified as being male at birth and 0.2% ($n/N = 4/1,779$) as being intersex. See Appendix D, Table D2 for comparisons to data collected for a UNR study (Christensen, 2017) in Spring 2017 and nationally for the Spring 2017 ACHA-NCHA-II. Future references to the terms "female" and "male" will be utilized when discussing participants' assigned sex at birth, not gender identity.

Gender identity. Of the participants who responded to the gender identity question, the two largest frequencies occurred for women at 70.7% ($n/N = 1,255/1,775$) and men at 26.6% ($n/N = 472/1,775$). For the purposes of data analysis, all other gender identities were grouped into a collective category labeled "Non-Cisgendered." The following Non-Cisgendered identities were selected by the remaining 2.7% ($n/N = 48/1,775$) of participants: trans man, non-binary, genderqueer, genderfluid, gender non-conforming, and another identity not listed as an option nor specified. No respondents

chose to identify as “trans woman” in this study. This data displayed similarities with data collected for a UNR study (Christensen, 2017) in Spring 2017 and nationally for the Spring 2017 ACHA-NCHA-II. (see Appendix D, Table D3 for comparisons). Future references to the terms “woman” and “man” will be utilized when discussing participants’ gender identity, not sex assigned at birth.

Sexual orientation. Of the participants who responded to the sexual orientation question, most participants, 79.5% ($n/N = 1,411/1,774$) identified as straight/heterosexual. The second highest frequency was found in 8.9% ($n/N = 158/1,774$) of participants which identified as bisexual. Including those who identified as bisexual, the following sexual orientations were chosen by 20.5% ($n/N = 363/1,774$) of participants: gay, lesbian, queer, pansexual, questioning, asexual, and another identity not listed as an option nor specified.

Race/ethnicity. Of the participants who answered the race/ethnicity question and in descending order, the following identifications were chosen: white or Caucasian 65.1% ($n/N = 1,156/1,777$), Hispanic or Latino/a 12.44% ($n/N = 221/1,777$), Asian or Pacific-Islander 8.9% ($n/N = 158/1,777$) and biracial or multi-racial 8.9% ($n/N = 158/1,777$), black 2.4% ($n/N = 43/1,777$), another identity not listed as an option 1.2% ($n/N = 22/1,777$), and American Indian, Alaskan Native, or Native Hawaiian 1.1% ($n/N = 19/1,777$).

Relationship status. Of the participants who answered the relationship status question, 52.9% ($n/N = 939/1,775$) of participants were not in a relationship and 41.9% ($n/N = 744/1,775$) were in a monogamous relationship. The remaining participants were

in an open relationship 2.3% ($n/N = 40/1,775$), married 1.3% ($n/N = 23/1,775$), or defined their relationship status as “other” 1.6% ($n/N = 29/1,775$).

Academics. For the Fall 2017 semester, 95.6% ($n/N = 1,700/1,779$) of eligible participants were enrolled full-time (12 credit hours per semester or more) and 4.4% ($n/N = 79/1,779$) part-time (11 credit hours per semester or less). At the time of taking the survey, 29.0% ($n/N = 515/1,779$) of participants identified as first year undergraduates, 23.2% ($n/N = 412/1,779$) as second year undergraduates, 24.3% ($n/N = 433/1,779$) as third year undergraduates, 16.5% ($n/N = 293/1,779$) as fourth year undergraduates, and 7.1% ($n/N = 126/1,779$) as fifth or more year undergraduates. These frequencies of participants in this study are similar to those of the total undergraduate population at UNR. Of the 17,706 undergraduate students who attended UNR in Fall 2017, 25.3% were freshmen, 21.4% were sophomores, 23.6% were juniors, and 29.7% were seniors.

Approximate cumulative GPAs were reported by participants selecting one of the following options: 3.7 to 4.0 (34.9%, $n/N = 620/1,777$), 2.7 to 3.69 (56.7%, $n/N = 1,008/1,777$), 1.7 to 2.69 (7.5%, $n/N = 134/1,777$), and 1.69 or below (0.8%, $n/N = 15/1,777$). Participants identified the college under which their major fell. College of Liberal Arts (19.8%, $n/N = 353/1,779$), Division Health Sciences (17.9%, $n/N = 319/1,779$), and College of Science (15.7%, $n/N = 279/1,779$) were chosen at the three highest frequencies and accounted for a majority (53.4%, $n/N = 951/1,779$) of participants.

Current residence. The survey required participants to identify their current living space based on the following options: campus residence hall 27.0% ($n/N = 480/1,779$), fraternity or sorority house 1.8% ($n/N = 32/1,779$), other college-/university-

owned housing 5.2% ($n/N = 93/1,779$), parent/guardian's house 18.7% ($n/N = 333/1,779$), and other off-campus housing 47.3% ($n/N = 841/1,779$).

For the purposes of this study, the following collapsed groups were created: campus (dorm and Greek) 28.8% ($n/N = 512/1,779$) which includes residence halls and GLO-designated housing, off campus 52.5% ($n/N = 934/1,779$) which includes college/university and other off campus housing, and parent 18.7% ($n/N = 333/1,779$). These groupings were created based on the supervision and restrictions present in the respective residences and how the supervision and restrictions may affect behavior patterns of participants. Residence halls are monitored by hall staff who enforce department policies (e.g. quiet hours, alcohol use, guests). Majority of participants who lived in fraternity or sorority housing 87.5% ($n/N = 28/32$) identified as female and therefore most likely lived in sorority housing, which involves strict house rules (e.g. no parties, no guests in the bedrooms, no underage alcohol or illicit drug use) and a "house mom" to enforce these rules. Fraternity houses on this campus do not have these regulations or an adult living in the house to enforce the housing policies. Since off campus housing options do not have live-in staff or supervision, these housing options are supervised less regardless of the property being owned and rented out by the university, rented out by apartment complexes specified for college students, or managed by a homeowner or renting agency. Most participants identified they live in some form of off campus housing. The third group, living with a parent or guardian, identifies those who currently have parental supervision during this period of emerging adulthood. Since emerging adulthood signifies a time when college students move away from their parents and/or guardians and experiment with freedom (Arnett, 2000), data from these

participants were maintained to compare with participants who did not live with parents and/or guardians. The non-collapsed data set is available in Appendix A with the original survey results.

Differences between the current residence of GLO members ages 18-20 and ages 21-25 were statistically significant ($X^2 = 30.7, p < 0.05$), revealing GLO members ages 21-25 were more likely to choose off campus housing options (78.4%, $n/N = 76/97$) than GLO members ages 18-20 (47.3%, $n/N = 87/184$). These differences between GLO members in separate stages of emerging adulthood displayed a trend of GLO members selecting housing options which lack supervision and provide freedom as they get older. The same trend was found in non-GLO members of different age groups ($X^2 = 268.0, p < 0.05$).

The majority of participants in their second (57.5%, $n/N = 237/412$), third (70.9%, $n/N = 307/433$), fourth (77.1%, $n/N = 226/293$), and fifth or higher (82.5%, $n/N = 104/126$) year of undergraduate study reside in off campus housing options as opposed to participants in their first year of undergraduate study who reside off campus (11.7%, $n/N = 60/515$). As students progress through their collegiate experience, a trend for living in off campus housing options emerges ($X^2 = 723.6, p < 0.05$). Table 1 displays the distribution of year in undergraduate study by current residence of GLO members. If only GLO members who lived in GLO-designated housing were surveyed, this study would be limited to analyzing only 29.2% ($n/N = 82/281$) of respondents who identified as GLO members. The data in Table 1 display a trend of GLO members choosing to live in off campus housing options as they progress through their time in undergraduate study ($X^2 = 87.0, p < 0.05$). The same trend was found for non-GLO members ($X^2 = 632.4, p < 0.05$).

Table 1 – Distribution of Year in School by Current Residence of GLO Members

Year in School	Current Residence			Row Totals
	Campus (Dorm and Greek)	Off Campus	Parent	
1 st year undergraduate	40 (78.4%)	5 (9.8%)	6 (11.8%)	51 (100%)
2 nd year undergraduate	19 (25.0%)	43 (56.6%)	14 (18.4%)	76 (100%)
3 rd year undergraduate	16 (19.5%)	58 (70.7%)	8 (9.8%)	82 (100%)
4 th year undergraduate	7 (13.0%)	41 (75.9%)	6 (11.1%)	54 (100%)
> 4 th year undergraduate	0 (0.0%)	16 (88.9%)	2 (11.1%)	18 (100%)

Note: $X^2 = 87.0$, $p < 0.05$. Numbers in parentheses indicate row percentages.

Participants were asked to identify the number of roommates they lived with at the current time. The following results were collected: did not live with other students 26.2% ($n/N = 466/1,779$), 1 student 24.3% ($n/N = 432/1,779$), 2-3 students 32.6% ($n/N = 579/1,779$), 4-5 students 13.6% ($n/N = 242/1,779$), and 6 or more students 3.4% ($n/N = 60/1,779$).

Other. Other demographic survey items included involvement with the United States Armed Services and participation in organized athletics. The majority, 98.5% ($n/N = 1,748/1,775$), of participants were not members of the United States Armed Services. The remaining participants were in the National Guard/Reserves 1.1% ($n/N = 19/1,775$) and active duty 0.5% ($n/N = 8/1,775$). When asked about participation in organized athletics, participants identified with the following responses: no participation 80.9% ($n/N = 1,462/1,807$), university team 2.2% ($n/N = 40/1,807$), club sports 5.6% ($n/N = 102/1,807$), intramural sports 8.2% ($n/N = 149/1,807$), and other forms of participation 3.0% ($n/N = 54/1,807$).

Living Arrangements

The second focus area of the survey collected data on the living arrangements of the participants in terms of how they perceived the influence of their roommates. Under question 16, the five survey items were:

- 1) My roommates influence my level of alcohol use
- 2) My roommates influence my level of drug use
- 3) My roommates influence my level of nonprescription drug use
- 4) My roommates influence my view on birth control
- 5) My roommates influence my view on STI and HIV screening

Participants rated these statements on a scale of 1 to 5 (1 = Strongly Disagree, 5 = Strongly Agree). For the purposes of data analysis, “Strongly Disagree” and “Disagree” responses were collapsed into “Disagree” and “Strongly Agree” and “Agree” responses were collapsed into “Agree.” Participants also had the option to select “Neutral” if they felt the statement did not apply to their current living arrangements. While participants were given the option to choose their level of agreement, disagreement or neutrality, these collapsed groups were created to simplify the process of running chi square analyses when testing for statistical significance between variables. The non-collapsed data set is available in Appendix A with the original survey results.

Roommates’ influence on level of alcohol use yielded the highest frequency for “Agree” (29.0%, $n/N = 374/1,291$) across all five statements, followed by roommates’ influence on level of drug use 14.0% ($n/N = 181/1,292$). Roommates’ influence on level of alcohol use also yielded the lowest frequency for “Disagree” 54.6% ($n/N = 705/1,291$)

across all five statements, with the second lowest frequency in influence on view on STI and HIV Screening 71.9% ($n/N = 928/1,291$).

Current residence of all participants was compared with responses to the questions concerning roommates' influence, and statistical significance was identified for roommates' influence on level of alcohol use ($X^2 = 63.1, p < 0.05$), drug use ($X^2 = 19.1, p < 0.05$), and nonprescription drug use ($X^2 = 17.7, p < 0.05$). Respondents who resided in off campus housing options yielded the highest percentages for answering "Agree" to roommates' influence on level of alcohol use (36.5%, $n/N = 265/727$), drug use (17.2%, $n/N = 125/727$), and nonprescription drug use (7.4%, $n/N = 54/727$). Data from all participants in the study yielded a correlation between current residence and level of agreement with roommates' influence on level of alcohol, drug, and nonprescription drug use.

Responses from participants ages 18-20 and ages 21-25 to the questions on roommates' influence were not found to be statistically significant for roommates' influence on level of alcohol use ($X^2 = 5.1, p = 0.08$), level of drug use ($X^2 = 1.5, p = 0.47$), level of nonprescription drug use ($X^2 = 0.3, p = 0.86$), view on birth control ($X^2 = 0.7, p = 0.71$), or view on STI and HIV screening ($X^2 = 0.6, p = 0.74$). When GLO and non-GLO members ages 18-20 and ages 21-25 were examined, responses were not statistically significant for roommates' influence on level of alcohol use ($X^2 = 4.5, p = 0.10$; $X^2 = 2.4, p = 0.30$), level of drug use ($X^2 = 0.3, p = 0.87$; $X^2 = 1.1, p = 0.58$), level of nonprescription drug use ($X^2 = 1.3, p = 0.53$; $X^2 = 0.02, p = 0.99$), view on birth control ($X^2 = 1.8, p = 0.40$; $X^2 = 0.5, p = 0.78$), or view on STI and HIV screening ($X^2 = 0.1, p = 0.93$; $X^2 = 1.0, p = 0.61$). Statistical significance was found when participants ages 18-20

were examined based on current residence and roommates' influence on level of alcohol use ($X^2 = 61.9, p < 0.05$), drug use ($X^2 = 29.0, p < 0.05$), and nonprescription drug use ($X^2 = 24.3, p < 0.05$). Across all three questions about roommates' influence, participants ages 18-20 who resided in off campus housing had the highest percentages for choosing "Agree" (38.6%, $n/N = 150/389$; 20.1%, $n/N = 78/389$; 9.0%, $n/N = 35/389$). The same trend between current residence and roommates' influence on level of alcohol, drug, and nonprescription use did not surface for participants ages 21-25; see Tables 2, 3 and 4 for comparison of current residence of both age groups and roommates' influence on level of alcohol, drug, and nonprescription drug use. As displayed in Tables 2, 3 and 4, participants living in off campus housing options witnessed decreased levels of agreement with roommates' influence on level of alcohol, drug, and nonprescription drug use as age of participants increased.

Table 2 – *Distribution of Current Residence of Ages 18-20 and 21-25 by Roommates' Influence on Level of Alcohol Use*

Ages 18-20			
Roommates' influence on level of alcohol use	Current Residence		
	Campus (Dorm and Greek)	Off Campus	Parent
Disagree	308 (66.8%)	165 (42.4%)	39 (69.6%)
Neutral	62 (13.5%)	74 (19.0%)	11 (19.6%)
Agree	91 (19.7%)	150 (38.6%)	6 (10.7%)
Column Totals	461 (100%)	389 (100%)	56 (100%)
Ages 21-25			
Roommates' influence on level of alcohol use	Current Residence		
	Campus (Dorm and Greek)	Off Campus	Parent
Disagree	16 (69.6%)	166 (49.1%)	11 (45.8%)
Neutral	2 (8.7%)	57 (16.9%)	6 (25.0%)
Agree	5 (21.74%)	115 (34.0%)	7 (29.2%)
Column Totals	23 (100%)	338 (100%)	24 (100%)

Note: Ages 18-20: $X^2 = 61.9, p < 0.05$. Ages 21-25: $X^2 = 4.8, p = 0.30$. Numbers in parentheses indicate column percentages.

Table 3 – Distribution of Current Residence by Roommates' Influence on Level of Drug Use

Ages 18-20			
Roommates' influence on level of drug use	Current Residence		
	Campus (Dorm and Greek)	Off Campus	Parent
Disagree	370 (80.0%)	256 (65.8%)	43 (76.8%)
Neutral	46 (10.0%)	55 (14.1%)	10 (17.9%)
Agree	46 (10.0%)	78 (20.1%)	3 (5.4%)
Column Totals	462 (100%)	389 (100%)	56 (100%)
Ages 21-25			
Roommates' influence on level of drug use	Current Residence		
	Campus (Dorm and Greek)	Off Campus	Parent
Disagree	20 (87.0%)	257 (76.0%)	16 (16.7%)
Neutral	1 (4.4%)	34 (10.1%)	3 (12.5%)
Agree	2 (8.7%)	47 (13.9%)	5 (20.8%)
Column Totals	23 (100%)	338 (100%)	24 (100%)

Note: Ages 18-20: $X^2 = 29.0$, $p < 0.05$. Ages 21-25: $X^2 = 2.8$, $p = 0.59$. Numbers in parentheses indicate column percentages.

Table 4 – Distribution of Current Residence by Roommates' Influence on Level of Nonprescription Drug Use

Ages 18-20			
Roommates' influence on level of nonprescription drug use	Current Residence		
	Campus (Dorm and Greek)	Off Campus	Parent
Disagree	414 (89.8%)	308 (79.2%)	44 (78.6%)
Neutral	30 (6.5%)	46 (11.8%)	10 (17.9%)
Agree	17 (3.7%)	35 (9.0%)	2 (3.6%)
Column Totals	461 (100%)	389 (100%)	56 (100%)
Ages 21-25			
Roommates' influence on level of nonprescription drug use	Current Residence		
	Campus (Dorm and Greek)	Off Campus	Parent
Disagree	20 (87.0%)	290 (85.8%)	18 (75.0%)
Neutral	1 (4.4%)	29 (8.6%)	3 (12.5%)
Agree	2 (8.7%)	19 (5.6%)	3 (12.5%)
Column Totals	23 (100%)	338 (100%)	24 (100%)

Note: Ages 18-20: $X^2 = 24.3$, $p < 0.05$. Ages 21-25: $X^2 = 3.2$, $p = 0.53$. Numbers in parentheses indicate column percentages.

When responses from GLO and non-GLO members were compared, no statistical significance was found for roommates' influence on level of alcohol use ($X^2 = 3.0, p = 0.22$), level of drug use ($X^2 = 0.3, p = 0.86$), level of nonprescription drug use ($X^2 = 0.5, p = 0.79$), view on birth control ($X^2 = 1.7, p = 0.43$), or view on STI and HIV screening ($X^2 = 3.3, p = 0.19$). For GLO members, statistical significance between current residence and roommates' influence was found for roommates' influence on GLO member's level of alcohol use ($X^2 = 16.5, p < 0.05$) but not drug use ($X^2 = 8.2, p = 0.08$) or nonprescription drug use ($X^2 = 4.7, p = 0.32$). The option "Agree" for roommates' influence on level of alcohol use was chosen by 37.7% ($n/N = 55/146$) of GLO members living off campus and 30.4% ($n/N = 24/79$) of GLO members living in residence halls or GLO-designated housing. For non-GLO members, statistical significance between current residence and roommates' influence was consistent for roommates' influence on level of alcohol use ($X^2 = 54.2, p < 0.05$), drug use ($X^2 = 14.4, p < 0.05$), and nonprescription drug use ($X^2 = 15.8, p < 0.05$), with non-GLO members living off campus yielding the highest percentages for all three statements (36.1%, $n/N = 209/579$; 17.3%, $n/N = 100/579$; 7.6%, $n/N = 44/579$).

Campus Involvement

The third focus area of the survey contained questions about GLO membership and involvement of both the participants and their roommates if applicable. If respondents were not affiliated with GLOs, a screening question directed them to the next focus area of the survey. A total of 281 (16%) participants identified as being a member of a GLO at the target university. Almost three-fourths of all GLO members were

females (72.2%, $n/N = 203/281$) Christensen (2017) also identified 281 (13%) participants as GLO members in the study but did not report the distribution of GLO members by sex.

Participants. GLO members were asked about the following demographics once they identified their membership in a GLO: number of GLOs they were a part of, the label under which their GLO fell (i.e. Interfraternity Council fraternity, Panhellenic Council sorority, Multicultural Greek Council fraternity or sorority, pre-professional or major-focused fraternity, honor society), the primary focus of their GLO (i.e. social, academic, service, culture, professional), and how many hours per week participants spent participating in events associated with the GLO.

A majority of GLO-affiliated participants, 91.0% ($n/N = 254/279$), identified membership in one GLO, with the remaining 9.0% ($n/N = 25/279$) of participants belonging to two or more GLOs. More than half of the participants (55.6%, $n/N = 155/279$) were a member of a Panhellenic Council sorority, which . More than half of participants also reported their GLOs under the following primary focuses: social (73.2%, $n/N = 205/280$), service (61.4%, $n/N = 172/280$), and academic (57.9%, $n/N = 162/280$). The highest frequencies for how many hours participants partook in GLO activities were 1-3 hours per week 48.9% ($n/N = 135/276$) and 4-6 hours per week 42.4% ($n/N = 117/276$). Most participants who identified as a GLO member either held one leadership position 35.7% ($n/N = 97/272$) or did not hold a leadership position at all 52.9% ($n/N = 144/272$).

Roommates. Of the 277 participants who identified as members of GLOs, 50.2% ($n/N = 139$) of participants live with other students who belong to GLOs. Participants in

GLOs reported living with 1 (41.3%, $n/N = 51/139$), 2-3 (36.2%, $n/N = 50/139$), 4-5 (0.7%, $n/N = 1/139$), and 6 or more (21.6%, $n/N = 30/139$) students who also identified as belonging to a GLO. More than half of the participants (64.0%, $n/N = 89/139$) identified their GLO roommates as members of a Panhellenic Council sorority. More than half of participants also identified social (82.0%, $n/N = 114/139$) and service (54.7%, $n/N = 76/139$) academic as the primary focuses for the GLOs their roommates were members of.

Comparisons were made between the number of GLO roommates GLO participants lived with and participants' level of agreement with roommates' influence on level of alcohol use, level of drug use, level of nonprescription use, views on birth control, and views on STI and HIV screening. Statistical significance between number of GLO roommates and roommates' influence was found only for roommates' influence on level of alcohol use ($X^2 = 15.6, p < 0.05$). Further investigation led to comparing number of GLO roommates and roommates' influence on level of alcohol use based on how many total roommates participants lived with. Statistical significance between number of GLO roommates and roommate's influence on level of alcohol use based on total number of roommates was found only for participants who lived with 2-3 roommates ($X^2 = 8.9, p < 0.05$). Of GLO members who lived with 2-3 other students, 33.3% ($n/N = 8/24$) of participants who identified 1 out of 2-3 roommates as a GLO member selected "Agree" for roommates' influence on level of alcohol use. Of GLO members who lived with 2-3 other students, 40.5% ($n/N = 15/37$) of participants who identified 2-3 out of 2-3 roommates as GLO members selected "Agree" for roommates' influence on level of alcohol use.

Risk Taking

The fourth focus area of the survey (question 27) utilized the Knowles Risk Taking Questionnaire to calculate participants' general risk propensity. The questionnaire consists of 20 statements on a 5-point Likert scale ranging from 1 "Strongly Agree" to 5 "Strongly Disagree." Total scores for this instrument range from 20 (low risk taker) to 100 (high risk taker). The 9 risk motivated items were scored reversely, and the 11 risk-avoidant items were scored directly. Therefore, a high score indicates risk motivation while a low score represents risk avoidance. See Appendix A for the complete survey which includes the questionnaire.

A total of 1,653 participants completed the questionnaire. The lowest score was 20 and the highest score was 89. The mean average score was 51.1 ($SD=10.03$), and the median score was 51. One standard deviation above the average RTQ score was used to establish the cutoff score for high risk propensity; the cutoff score for low risk propensity was one standard deviation below the average RTQ score. Based on data collected in this study, the following risky propensity ranges were established: low-risk propensity (scores 20-41), average risk propensity (scores 42-60), and high risk propensity (scores 61-89). A majority of participants, 65.9% ($n/N = 1,090/1,653$), scored within the range for average risk propensity. An almost equal percentage of participants scored within the low-risk propensity range (16.3%, $n/N = 269$) and the high-risk propensity range (17.8%, $n/N = 296$). No statistical significance was found between RTQ scores and GLO membership ($X^2 = 0.9, p = 0.62$), RTQ scores and age ($X^2 = 3.5, p = 0.17$), or RTQ scores and current residence ($X^2 = 0.9, p = 0.20$).

Sexual Behaviors

The fifth focus area of the survey (questions 28-36) collected data on sexual behaviors of participants. This section of questions asked participants about sexual partners, frequency and type of sexual behaviors, contraception methods and barrier use, STI and HIV screening, diagnosis, and treatment.

Sexual partners. The first question of this section screened for 531 participants (31.7%) who did not have any sexual partners within the last 6 months and sent those participants to the STI and HIV section of the survey. Of the remaining 1,143 participants (68.3%) who did have sexual partners within the last 6 months, 47.1% ($n/N = 789/1,674$) had one sexual partner, 14.9% ($n/N = 250/1,674$) had 2-3 sexual partners, 4.1% ($n/N = 68/1,674$) had 4-5 sexual partners, and 2.2% ($n/N = 36/1,674$) had 6 or more sexual partners. These results were similar to findings in the Christensen (2017) study. Of those participants who had sexual partners in the last 6 months, the majority, 85.1% ($n/N = 1,037/1,219$), of those sexual partners were identified by participants as heterosexuals. The remaining 14.9% ($n/N = 182/1,219$) of sexual partners were identified by participants as gay, lesbian, bisexual, queer, pansexual, questioning, asexual, or another sexual orientation.

When the number of sexual partners in the last 6 months and RTQ scores were compared, the results were statistically significant ($X^2 = 93.3, p < 0.05$). For participants who identified having no sexual partners and 1 sexual partner within the last 6 months, percentages decreased across the RTQ scores ranges from Low Risk Propensity to High Risk Propensity. For participants who identified having 2-3, 4-5, and 6 or more sexual partners within the last 6 months, percentages increased across the RTQ score ranges

from Low Risk Propensity to High Risk Propensity. See Table 5 for the distribution of RTQ scores by the number of sexual partners in the last 6 months.

Table 5 – *Distribution of RTQ Scores by Number of Sexual Partners in the Last 6 Months*

Number of Sexual Partners	Risk Propensity		
	Low Risk Propensity	Average Risk propensity	High Risk Propensity
No sexual partners	108 (40.5%)	353 (32.5%)	64 (21.9%)
1 sexual partner	138 (51.6%)	519 (47.7%)	119 (40.7%)
2-3 sexual partners	17 (6.3%)	159 (14.6%)	66 (22.6%)
4-5 sexual partners	3 (1.1%)	39 (3.5%)	25 (8.5%)
6 or more sexual partners	1 (0.3%)	16 (1.4%)	18 (6.2%)
Column Totals	267 (100%)	1,086 (100%)	292 (100%)

Note: $X^2 = 93.3$, $p < 0.05$. Numbers in parentheses indicate column percentages.

A higher percentage of GLO members was observed to have one or more sexual partners in the last 6 months than non-GLO members ($X^2 = 38.2$, $p < 0.05$). For GLO and non-GLO members who identified having no sexual partners and 1 sexual partner within the last 6 months, percentages decreased across the RTQ scores ranges from Low Risk Propensity to High Risk Propensity. For GLO and non-GLO members who identified having 2-3, 4-5, and 6 or more sexual partners within the last 6 months, percentages increased across the RTQ score ranges from Low Risk Propensity to High Risk Propensity. See Table 6 for the distribution of RTQ scores by the number of sexual partners in the last 6 months for GLO and non-GLO members.

Table 6 – Distribution of RTQ Scores by Number of Sexual Partners in Last 6 Months for GLO and Non-GLO Members

GLO Members			
	Risk Propensity		
Number of Sexual Partners	Low Risk Propensity	Average Risk propensity	High Risk Propensity
No sexual partners	11 (29.7%)	37 (21.0%)	6 (12.8%)
1 sexual partner	23 (62.2%)	88 (50.0%)	13 (27.7%)
2-3 sexual partners	2 (5.4%)	34 (19.3%)	13 (27.7%)
4-5 sexual partners	1 (2.7%)	12 (6.8%)	6 (12.8%)
6 or more sexual partners	0 (0.0%)	5 (2.8%)	9 (19.2%)
Column Totals	37 (100%)	176 (100%)	47 (100%)
Non-GLO Members			
	Risk Propensity		
Number of Sexual Partners	Low Risk Propensity	Average Risk propensity	High Risk Propensity
No sexual partners	97 (42.2%)	316 (34.7%)	58 (23.7%)
1 sexual partner	115 (50.0%)	431 (47.4%)	106 (43.3%)
2-3 sexual partners	15 (6.5%)	125 (13.7%)	53 (21.6%)
4-5 sexual partners	2 (0.9%)	27 (3.0%)	19 (7.8%)
6 or more sexual partners	1 (0.5%)	11 (1.2%)	9 (3.7%)
Column Totals	230 (100%)	910 (100%)	245 (100%)

Note: GLO members: $X^2 = 37.9$, $p < 0.05$. Non-GLO members: $X^2 = 61.0$, $p < 0.05$. Numbers in parentheses indicate column percentages.

Comparison of participants ages 18-20 and ages 21-25 and the number of sexual partners in the past 6 months yielded statistical significance ($X^2 = 34.2$, $p < 0.05$) but did not identify any trends regarding which age group had higher percentages of members who reported one or more sexual partners in the last 6 months. When age was considered, a higher percentage of GLO members ages 18-20 were observed to have one or more sexual partners in the last 6 months than non-GLO members ages 18-20 ($X^2 = 35.1$, $p < 0.05$). No statistical significance was found between GLO and non-GLO members ages 21-25 ($X^2 = 6.6$, $p = 0.16$). For participants ages 18-20 and ages 21-25 who identified having no sexual partners and 1 sexual partner within the last 6 months,

percentages decreased across the RTQ scores ranges from Low Risk Propensity to High Risk Propensity. For ages participants 18-20 and ages 21-25 who identified having 2-3, 4-5, and 6 or more sexual partners within the last 6 months, percentages increased across the RTQ score ranges from Low Risk Propensity to High Risk Propensity. See Table 7 for the distribution of RTQ scores by the number of sexual partners in the last 6 months for ages 18-20 and ages 21-25.

Comparison of current residence and the number of sexual partners in the last 6 months yielded statistical significance ($X^2 = 113.0, p < 0.05$). Participants who lived off campus yielded the lowest frequency for not having a sexual partner in the last 6 months (21.0%, $n/N = 183/872$) and the highest frequencies for having 1 (54.5%, $n/N = 475/872$), 2-3 (17.2%, $n/N = 150/872$), 4-5 (4.2%, $n/N = 37/872$), and 6 or more (3.1%, $n/N = 27/872$) sexual partners within the last 6 months. No statistical significance was found between current residence of GLO members and number of sexual partners within the last 6 months ($X^2 = 10.9, p = 0.21$). For ages 18-20 and ages 21-25, statistical significance was found between current residence and number of sexual partners in the last 6 months ($X^2 = 56.2, p < 0.05$; $X^2 = 40.3, p < 0.05$). No significant trends were identified other than participants ages 18-20 (24.7%, $n/N = 107/434$) and ages 21-25 (17.4%, $n/N = 76/438$) who lived off campus were less likely to have no sexual partners in the last 6 months than those who lived on campus (42.2%, $n/N = 192/455$; 40%, $n/N = 12/30$) and with parents (47.5%, $n/N = 103/217$; 41.0%, $n/N = 41/100$).

Table 7 – Distribution of RTQ Scores by Number of Sexual Partners in Last 6 Months for Ages 18-20 and 21-25

Ages 18-20			
	Risk Propensity		
Number of Sexual Partners	Low Risk Propensity	Average Risk propensity	High Risk Propensity
No sexual partners	80 (46.2%)	272 (37.2%)	45 (25.1%)
1 sexual partner	79 (45.7%)	318 (43.6%)	70 (39.1%)
2-3 sexual partners	10 (5.8%)	105 (14.4%)	37 (20.7%)
4-5 sexual partners	3 (1.7%)	26 (3.6%)	16 (8.9%)
6 or more sexual partners	1 (0.6%)	10 (1.4%)	11 (6.2%)
Column Totals	173 (100%)	731 (100%)	179 (100%)
Ages 21-25			
	Risk Propensity		
Number of Sexual Partners	Low Risk Propensity	Average Risk propensity	High Risk Propensity
No sexual partners	28 (29.8%)	81 (22.3%)	19 (16.9%)
1 sexual partner	59 (6.8%)	201 (56.6%)	49 (43.4%)
2-3 sexual partners	7 (7.5%)	54 (15.2%)	29 (25.7%)
4-5 sexual partners	0 (0.0%)	13 (3.7%)	9 (8.0%)
6 or more sexual partners	0 (0.0%)	6 (1.7%)	7 (6.1%)
Column Totals	94 (100%)	355 (100%)	113 (100%)

Note: Ages 18-20: $X^2 = 57.1, p < 0.05$. Ages 21-25: $X^2 = 37.4, p < 0.05$. Numbers in parentheses indicate column percentages.

When RTQ scores and number of sexual partners were examined based on current residence, statistical significance was found for participants living on campus ($X^2 = 24.4, p < 0.05$), off campus ($X^2 = 67.1, p < 0.05$), and with parents ($X^2 = 17.1, p < 0.05$). For participants in all options for current residence who identified having no sexual partners within the last 6 months, percentages decreased across the RTQ scores ranges from Low Risk Propensity to High Risk Propensity. For participants in all options for current residence who identified having 2-3 and 4-5 sexual partners within the last 6 months, percentages increased across the RTQ score ranges from Low Risk Propensity to High

Risk Propensity. See Table 8 for the distribution of RTQ scores by the number of sexual partners in the last 6 months for based on current residence.

Table 8 – Distribution of RTQ Scores by Number of Sexual Partners in Last 6 Months for Current Residence

Campus (Dorm & Greek)			
	Risk Propensity		
Number of Sexual Partners	Low Risk Propensity	Average Risk propensity	High Risk Propensity
No sexual partners	44 (56.4%)	130 (40.7%)	27 (34.6%)
1 sexual partner	26 (33.3%)	125 (39.0%)	22 (28.2%)
2-3 sexual partners	7 (9.0%)	48 (15.0%)	19 (24.3%)
4-5 sexual partners	1 (1.3%)	13 (4.1%)	6 (7.7%)
6 or more sexual partners	0 (0.0%)	4 (1.3%)	4 (5.1%)
Column Totals	78 (100%)	320 (100%)	78 (100%)
Off Campus			
	Risk Propensity		
Number of Sexual Partners	Low Risk Propensity	Average Risk propensity	High Risk Propensity
No sexual partners	30 (22.4%)	129 (23.4%)	23 (13.5%)
1 sexual partner	94 (70.1%)	297 (53.9%)	75 (44.1%)
2-3 sexual partners	9 (6.7%)	95 (17.2%)	41 (24.1%)
4-5 sexual partners	1 (0.8%)	19 (3.4%)	17 (10.0%)
6 or more sexual partners	0 (0.0%)	12 (2.1%)	14 (8.2%)
Column Totals	134 (100%)	552 (100%)	170 (100%)
Parent			
	Risk Propensity		
Number of Sexual Partners	Low Risk Propensity	Average Risk propensity	High Risk Propensity
No sexual partners	34 (61.8%)	94 (43.9%)	14 (31.8%)
1 sexual partner	18 (32.7%)	97 (45.3%)	22 (50.0%)
2-3 sexual partners	1 (1.8%)	16 (7.5%)	6 (13.6%)
4-5 sexual partners	1 (1.8%)	7 (3.2%)	2 (4.6%)
6 or more sexual partners	1 (1.8%)	0 (0.0%)	0 (0.0%)
Column Totals	55 (100%)	214 (100%)	44 (100%)

Note: Campus (Dorm and Greek): $X^2 = 24.4, p < 0.05$. Off Campus: $X^2 = 67.1, p < 0.05$. Parent: $X^2 = 17.1, p < 0.05$. Numbers in parentheses indicate column percentages.

Protective Barrier Use. Participants were asked to report their engagement in different types of sex for the past 6 months, as well as their methods for contraception and protective barrier use. The two most common types of sex in which participants engaged in the last 6 months were oral sex 91.3% ($n/N = 1,012/1,109$) and vaginal intercourse 90.5% ($n/N = 1,002/1,107$). A lower percentage of participants documented anal intercourse in the last 6 months (16.4%, $n/N = 179/1,093$).

When asked about barrier use during sex, participants who never used protective barriers versus participants who always used protective barriers in the past 6 months reported as follows: 90.7% ($n/N = 914/1,008$) vs. 3.8% ($n/N = 38/1,008$) for oral sex, 28.4% ($n/N = 284/1,001$) vs. 27.6% ($n/N = 276/1,001$) for vaginal sex, and 57.3% ($n/N = 102/178$) vs 23.0% ($n/N = 41/178$) for anal sex. When compared to RTQ scores, statistical significance was found in using barriers for oral sex ($X^2 = 27.4, p < 0.05$) and vaginal intercourse ($X^2 = 18.8, p < 0.05$) in the last 6 months but not for anal intercourse ($X^2 = 13.4, p = 0.10$). For participants who “Always,” “Most of the time,” and “Sometimes” used barriers for oral sex and “Always” and “Rarely” used barriers for vaginal intercourse within the last 6 months, percentages decreased across the RTQ scores ranges from Low Risk Propensity to High Risk Propensity. For participants who “Rarely” and “Never” used barriers for oral sex and “Most of the time” and “Sometimes” for vaginal intercourse within the last 6 months, percentages increased across the RTQ score ranges from Low Risk Propensity to High Risk Propensity. See Table 9 for the distribution of RTQ scores by barrier use for oral sex in the last 6 months and Table 10 for the distribution of RTQ scores by barrier use for vaginal intercourse in the last 6 months.

Table 9 – Distribution of RTQ Scores by Barrier Use for Oral Sex in Last 6 Months

Barrier for Oral Sex in Last 6 Months	Risk Propensity		
	Low Risk Propensity	Average Risk propensity	High Risk Propensity
Never	126 (82.9%)	641 (90.4%)	202 (92.7%)
Rarely	3 (2.0%)	26 (3.7%)	9 (4.1%)
Sometimes	2 (1.3%)	8 (1.1%)	1 (0.5%)
Most of the time	2 (1.3%)	7 (1.0%)	1 (0.5%)
Always	19 (12.5%)	27 (3.8%)	5 (2.3%)
Column Totals	152 (100%)	709 (100%)	218 (100%)

Note: $X^2 = 27.4$, $p < 0.05$. Numbers in parentheses indicate column percentages.

Table 10 – Distribution of RTQ Scores by Barrier Use for Vaginal Intercourse in Last 6 Months

Barrier for Vaginal Intercourse in Last 6 Months	Risk Propensity		
	Low Risk Propensity	Average Risk propensity	High Risk Propensity
Never	44 (29.0%)	215 (30.9%)	67 (30.7%)
Rarely	20 (13.2%)	86 (12.3%)	24 (11.0%)
Sometimes	11 (7.2%)	74 (10.6%)	30 (13.8%)
Most of the time	22 (14.5%)	127 (18.2%)	54 (24.8%)
Always	55 (36.2%)	195 (28.0%)	43 (19.7%)
Column Totals	152 (100%)	697 (100%)	218 (100%)

Note: $X^2 = 18.8$, $p < 0.05$. Numbers in parentheses indicate column percentages.

When relationship status was compared to barrier use in the last 6 months, statistical significance was found for vaginal intercourse ($X^2 = 54.8$, $p < 0.05$) and anal intercourse ($X^2 = 35.8$, $p < 0.05$). Of participants who identified being in some type of relationship at the time of taking the survey and “Never” used a barrier during vaginal intercourse in the last 6 months, 34.4% ($n/N = 223/648$) were in a monogamous relationship, 33.3% ($n/N = 10/30$) in an open relationship, 73.9% ($n/N = 17/23$) married, or 29.2% ($n/N = 7/24$) in another type of relationship not specified at the time of taking the survey. Of participants who identified in some type of relationship at the time of

taking the survey and “Always” used a barrier during vaginal intercourse in the last 6 months, 33.2% ($n/N = 120/362$) were not in a relationship at the time of taking the survey. Participants were more likely to “Never” use a barrier during anal intercourse in the last 6 months regardless of their current relationship status (75.4%, $n/N = 686/910$). Statistical significance was found when relationship status of GLO and non-GLO members and barrier use during vaginal intercourse in the last 6 months ($X^2 = 23.1$, $p < 0.05$; $X^2 = 50.2$, $p < 0.05$) were compared, as well as when relationship status of non-GLO members and barrier use during anal intercourse in the last 6 months ($X^2 = 37.5$, $p < 0.05$) were compared. While statistical significance was not found in the comparison of relationship status of GLO members and barrier use during anal intercourse in the last 6 months ($X^2 = 4.7$, $p = 0.97$), relationship status of GLO and non-GLO members and barrier use during vaginal and anal intercourse in the last 6 months followed identical trends observed in the comparison of relationship status of all participants and barrier use during vaginal and anal intercourse in the last 6 months.

Contraception use in the last 6 months had the highest frequencies for birth control pills (44.0%, $n/N = 489/1,111$) and male condoms (25.7%, $n/N = 285/1,111$) across all participants. The majority of participants chose “Disagree” for roommate’s influence on view of birth control (73.8%, $n/N = 953/1,292$), and there were no statistical significances found when comparing roommate’s influence with other variables and factors. A majority of participants (82.1%, $n/N = 914/1,114$) did not use emergency contraception (“morning after pill”) in the last 6 months. When use of emergency contraception in the last 6 months was compared to the number of sexual partners in the last 6 months, statistical significance was found ($X^2 = 47.0$, $p < 0.05$). Participants who

had 4-5 (22.4%, $n/N = 15/67$) or 6 or more (19.4%, $n/N = 7/36$) sexual partners in the last 6 months used emergency contraceptives at a higher rate than participants who had 1 (10.4%, $n/N = 80/767$) or 2-3 (15.7%, $n/N = 38/242$) sexual partners in the last 6 months.

STIs/HIV. Participants were asked to report their STI or HIV screening, diagnosis, and treatment history from the past 6 months. Only 25.4% ($n/N = 416/1,640$) of participants were tested for STIs or HIV in the past 6 months; 2.8% ($n/N = 46/1,640$) of participants were diagnosed with an STI or HIV in the last 6 months. Of those 46 participants who were diagnosed, most of the participants were treated for an STI or HIV in the last 6 months (84.2%, $n/N = 32/46$). A lower percentage of participants ages 18-20 (22.3%, $n/N = 242/1,084$) were tested for STIs in the last 6 months than participants ages 21-25 (31.3%, $n/N = 174/556$). A higher percentage of participants who lived off campus (31.3%, $n/N = 267/852$) were tested for STIs and HIV in the last 6 months than those who lived on campus (19.9%, $n/N = 95/477$) and with parents (17.4%, $n/N = 54/311$). A majority of participants (71.9%, $n/N = 928/1,291$) chose “Disagree” when reporting their roommate’s influence on views of STI and HIV screening. A higher percentage of GLO members (34.4%, $n/N = 89/259$) were tested for STIs or HIV in the last 6 months than non-GLO members (23.7%, $n/N = 327/1,381$).

Alcohol and Substance Use

The final focus areas of the survey (questions 37-56) collected data from participants about alcohol and substance use separately and in conjunction with RSB.

Alcohol Use: AUDIT. The first five questions of this section (questions 37-41) were the 10 survey items of the AUDIT. The AUDIT was used to screen for potential alcohol use disorders in participants. The AUDIT contained 10 items, and each item had

five answer choices scored from 0 to 4. The participant's total score resulted from adding together the scores from all ten items. This study used the cutoff score of 8 to identify participants with risky drinking behaviors (DeMartini & Carey, 2012). Based on Babor et al.'s (2001) scoring and interpretation guidelines, the following alcohol use risk categories were used to group participants: low-risk drinking (score 0-7), risky/hazardous drinking (score 8-15), high-risk/harmful drinking (score 16-19), and high-risk drinking and likely dependent (score 20 or more). Of the 1,243 participants who completed the AUDIT questions (69.9%), the mean average AUDIT score was 5.6 ($SD=4.60$) with a median of 4. These values were consistent with the Christensen (2017) study conducted on the same target population and lower than other studies conducted on college students (e.g. $M=8.40$, $SD = 5.55$; $M=6.10$, $SD = 5.90$) (DeMartini & Carey, 2012; Olthuis et al., 2011). The lower average AUDIT score for UNR students could be attributed to the large proportion of female participants in the study. See Table 11 for the distribution of the alcohol use risk category.

Table 11 – Distribution by Alcohol Use Risk Category

Alcohol Use Risk Category	Frequency (%)
Low Risk Drinking	941 (75.7%)
Risky/Hazardous Drinking	248 (20.0%)
High-Risk/Harmful Drinking	30 (2.4%)
High Risk and Likely Dependent	24 (1.9%)
Total	1,243 (100%)

The 753 participants ages 18-20 (64.4%) and 490 participants ages 21-25 (80.3%) who completed the AUDIT questions had average scores of 5.3 ($SD = 4.40$) and 6.1 ($SD = 4.85$). The difference in alcohol use risk categories for ages 18-20 and ages 21-25 was found to be statistically significant ($X^2 = 15.2$, $p<0.05$). Participants ages 18-20 were more likely to score in the low risk drinking (79.0%, $n/N = 595/753$) and high-

risk/harmful drinking (2.7%, $n/N = 20/753$) categories, and participants ages 21-25 were more likely to score in the risky/hazardous drinking (24.5%, $n/N = 120/490$) and high risk and likely dependent (2.9%, $n/N = 14/490$) categories. See Table 12 for distribution of roommates' influence on level of alcohol use by alcohol use risk category for ages 18-20 and ages 21-25. Participants of both age groups chose "Disagree" more than "Agree" for roommates' influence on level of alcohol use if they scored in the low risk drinking category and "Agree" more than "Disagree" for roommates' influence of level of alcohol use if they scored in the risky/hazardous drinking, high-risk/harmful drinking, and high risk and likely dependent categories.

Table 12 – *Distribution of Roommate's Influence on Level of Alcohol Use by AUDIT Scores for Ages 18-20 and 21-25*

Ages 18-20				
	Alcohol Use Risk Category			
Roommates' influence on level of alcohol use	Low Risk Drinking	Risky/Hazardous Drinking	High-Risk/Harmful Drinking	High Risk and Likely Dependent Drinking
Disagree	236 (50.9%)	39 (34.2%)	6 (33.3%)	3 (33.3%)
Neutral	88 (19.0%)	17 (14.9%)	3 (16.7%)	1 (11.1%)
Agree	140 (30.2%)	58 (50.9%)	9 (50.0%)	5 (55.6%)
Column Totals	464 (100%)	114 (100%)	18 (100%)	9 (100%)
Ages 21-25				
	Alcohol Use Risk Category			
Roommates' influence on level of alcohol use	Low Risk Drinking	Risky/Hazardous Drinking	High-Risk/Harmful Drinking	High Risk and Likely Dependent Drinking
Disagree	121 (55.5%)	26 (30.6%)	3 (37.5%)	4 (40.0%)
Neutral	37 (17.0%)	18 (21.1%)	1 (12.5%)	1 (10.0%)
Agree	60 (27.5%)	41 (48.2%)	4 (50.0%)	5 (50.0%)
Column Totals	218 (100%)	85 (100%)	8 (100%)	10 (100%)

Note: Ages 18-20: $X^2 = 21.1, p < 0.05$. Ages 21-25: $X^2 = 18.4, p < 0.05$. Numbers in parentheses indicate column percentages.

A total of 311 participants who resided on campus and completed the AUDIT questions (60.7%) scored an average of 5.0 ($SD=4.16$) on the AUDIT. The 731 participants who resided off campus and completed the AUDIT questions (78.3%) scored an average of 6.1 ($SD=4.85$) on the AUDIT. The remaining 201 participants who completed the AUDIT questions resided with parents (60.4%) and scored an average of 4.6 ($SD=4.06$) on the AUDIT. When alcohol use risk category and current residence were compared, statistical significance ($X^2 = 13.5, p < 0.05$) revealed participants who lived off campus yielded the highest percentages in the risky/hazardous drinking (22.6%, $n/N = 165/731$), high-risk/harmful drinking (2.7%, $n/N = 20/731$), and high risk and likely dependent (2.5%, $n/N = 18/731$) categories. When living off campus, participants ages 18-20 demonstrated the same trend of yielding higher percentages in the risky/hazardous drinking (20.1%, $n/N = 69/344$), high-risk/harmful drinking (3.8%, $n/N = 13/344$), and high risk and likely dependent (1.7%, $n/N = 6/344$) categories. See Table 13 for the distribution of roommates' influence on level of alcohol use by alcohol use risk category of participants who lived off campus. Out of all the current residence options, only participants who lived off campus demonstrated a trend in choosing "Disagree" for roommates' influence on level of alcohol use at a higher frequency when they scored in the low risk drinking category and "Agree" at a higher frequency when they scored in risky/hazardous drinking, high-risk/harmful drinking, and high risk and likely dependent.

Table 13 – *Distribution of Roommate’s Influence on Level of Alcohol Use by AUDIT Scores for Off Campus*

Roommates’ influence on level of alcohol use	Alcohol Use Risk Category			
	Low Risk Drinking	Risky/Hazardous Drinking	High-Risk/Harmful Drinking	High Risk and Likely Dependent Drinking
Disagree	194 (47.2%)	40 (28.6%)	5 (27.8%)	6 (40.0%)
Neutral	81 (19.7%)	29 (20.7%)	2 (11.1%)	2 (13.3%)
Agree	136 (33.1%)	71 (50.7%)	11 (61.1%)	7 (46.7%)
Column Totals	411 (100%)	140 (100%)	18 (100%)	15 (100%)

Note: $X^2 = 21.8$, $p < 0.05$. Numbers in parentheses indicate column percentages.

Another significant trend emerged when observing alcohol use risk categories and the number of sexual partners within the last 6 months ($X^2 = 111.1$, $p < 0.05$). As the number of sexual partners in the last 6 months increased, the number of participants who scored in the risky/hazardous drinking category increased. See Table 14 for the distribution of number of sexual partners in the last 6 months by alcohol use risk categories.

Table 14 – *Distribution of Number of Sexual Partners in Last 6 Months by AUDIT Scores*

Number of sexual partners in last 6 months	Alcohol Use Risk Category				Row Totals
	Low Risk Drinking	Risky/Hazardous Drinking	High-Risk/Harmful Drinking	High Risk and Likely Dependent Drinking	
No sexual partners	256 (85.3%)	38 (12.7%)	5 (1.7%)	1 (0.3%)	300 (100%)
1 sexual partner	504 (81.0%)	102 (16.4%)	8 (1.3%)	8 (1.3%)	622 (100%)
2-3 sexual partners	137 (60.9%)	67 (29.8%)	12 (5.3%)	9 (4.0%)	22 (100%)
4-5 sexual partners	51 (50.8%)	22 (36.1%)	4 (6.6%)	4 (6.6%)	61 (100%)
6 or more sexual partners	12 (12.4%)	18 (54.6%)	1 (3.0%)	2 (6.1%)	33 (100%)

Note: $X^2 = 111.1$, $p < 0.05$. Numbers in parentheses indicate row percentages.

Of the 229 participants who identified as GLO members and completed the AUDIT questions (81.5%), the average AUDIT score was 7.1 ($SD=5.06$). Majority of GLO members scored in the low risk drinking category (65.5%, $n/N = 150/229$), followed by the risky/hazardous drinking category (27.5%, $n/N = 63/229$). The remaining participants who did not identify as GLO members and completed the AUDIT (68.9%, $n/N = 1,014/1,472$) yielded an average AUDIT score of 5.3 ($SD=4.43$). A higher percentage of non-GLO members scored in the low risk drinking category (78.0%, $n/N = 791/1,014$) than GLO members; a lower percentage of non-GLO members scored in the risky/hazardous drinking category (18.2%, $n/N = 185/1,014$) than GLO members. When GLO members of each age group were analyzed, GLO members ages 18-20 were more likely to score in the risky/hazardous drinking category (24.7%, $n/N = 37/150$) than non-GLO members ages 18-20 (15.1%, $n/N = 91/603$), and GLO members ages 21-25 were more likely to score in the risky/hazardous drinking (33.0%, $n/N = 26/79$), high-risk/harmful drinking (2.5%, $n/N = 2/79$), and high risk and likely dependent (5.1%, $n/N = 4/79$) than non-GLO members ages 21-25 (22.9%, $n/N = 94/411$; 2.0%, $n/N = 8/411$; 2.4%, $n/N = 10/411$). No statistical significance was found when comparing alcohol use risk category and current residence of GLO ($X^2 = 5.3$, $p = 0.51$) and non-GLO members ($X^2 = 10.0$, $p = 0.13$). No trends emerged in the alcohol use risk categories of GLO members and level of agreement with roommates' influence on level of alcohol use. In the case of non-GLO members, more participants who scored in the low risk drinking category chose "Disagree" (51.9%, $n/N = 291/561$) for roommates' influence on level of alcohol use. Non-GLO members chose "Agree" for roommates' influence on level of

alcohol use more when they scored in the risky/hazardous drinking (45.8%, $n/N = 65/142$), high-risk/harmful drinking (70.6%, $n/N = 12/17$), and high risk and likely dependent categories (53.9%, $n/N = 7/13$).

Alcohol Use: AUDIT-C. Questions 37 and 38, along with the first item included in question 39 (i.e. “How often do you have six or more drinks on one occasion?”), constituted the AUDIT-C, a screening tool for binge drinking. Based on responses scored from 0-4, the total possible score is 12. Cutoff scores from DeMartini & Carey (2012) were used in this study to identify male and female participants with binge drinking behaviors. Males with binge-drinking behaviors yielded a cut off score of 7 and females yielded a score of 5. For the purposes of this study, the data results were collapsed into two categories based on the respective cut off scores for males and females: no binge drinking and likely binge drinking. The label “likely binge drinking” indicates participants met the cut off scores for their respective group. The 4 (0.2%) participants who identified as intersex at birth were not analyzed using the AUDIT-C since scoring and threshold guidelines were not found for intersex individuals. Of the 1,256 (70.6%) participants who completed the AUDIT-C questions, 936 (74.5%) participants were female and 317 (25.2%) participants were male. The mean AUDIT-C score was 3.6 ($SD=2.13$) with a median of 3. Female participants had an average AUDIT-C score of 3.3 ($SD=1.93$) and male participants had an average AUDIT-C score of 4.3 ($SD=2.49$). These findings were consistent with findings from the Christensen (2017) study conducted on the UNR undergraduate population. When compared to other studies, female participants at UNR yielded lower AUDIT-C averages (e.g. $M = 3.72$, $SD=0.19$; $M = 3.56$, $SD=2.49$) while the average scores of male participants fell in the middle ($M = 5.38$, $SD=0.19$; $M =$

4.10, $SD=2.94$) (Barry, Chaney, Stellefson, & Dodd, 2015; Wahesh & Lewis, 2015).

Only 23.5% ($n/N = 220/936$) of female participants and 18.6% ($n/N = 59/317$) of male participants scored in the likely binge drinking category for the AUDIT-C.

No statistical significance was found when the AUDIT-C scores of female and male participants ages 18-20 were compared with the AUDIT-C scores of their female and male counterparts ages 21-25 ($X^2 = 2.2, p = 0.14$; $X^2 = 0.4, p = 0.54$). Female and male participants ages 18-20 were less likely to score in the likely binge drinking category (21.9%, $n/N = 127/580$; 17.4%, $n/N = 31/178$) than female and male participants ages 21-25 (26.1%, $n/N = 93/356$; 20.1%, $n/N = 28/139$). Comparisons of AUDIT-C scores with roommates' influence on level of alcohol use revealed females ages 18-20 ($X^2 = 7.6, p < 0.05$) and ages 21-25 ($X^2 = 16.0, p < 0.05$) were more likely to "Disagree" (50.9%, $n/N = 178/350$) with roommates' influence on level of alcohol use when they scored in the no binge drinking category and "Agree" (45.9%, $n/N = 50/109$) with roommates' influence on level of alcohol use when they scored in the likely binge drinking category. Statistical significance was not found in a comparison of AUDIT-C scores of males ages 18-20 ($X^2 = 1.0, p = 0.59$) and 21-25 ($X^2 = 3.0, p = 0.22$) and roommates' influence on level of alcohol use.

When AUDIT-C scores for female participants were compared to current residence, the differences were found to be statistically significant ($X^2 = 11.3, p < 0.05$). Female participants who lived off campus were more likely to score in the likely binge drinking category (27.2%, $n/N = 147/541$) than other female participants who lived on campus (20.8%, $n/N = 49/236$) and with a parent (15.1%, $n/N = 24/159$). The same statistical significance was not found when AUDIT-C scores of male participants were

compared with current residence ($X^2 = 1.0, p = 0.61$). A significant trend emerged when comparing the AUDIT-C scores with roommates' influence on level of alcohol use of female participants who lived on campus and off campus ($X^2 = 10.9, p < 0.05$; $X^2 = 8.3, p < 0.05$). A higher percentage of female participants who lived on campus and off campus and scored in the no binge drinking category chose "Disagree" for roommates' influence on level of alcohol use. When female participants who lived on campus and off campus scored in the likely binge drinking category, a higher percentage chose "Agree" for roommates' influence on level of alcohol use. See Table 15 for the distribution of roommates' influence on level of alcohol use by AUDIT-C scores of females.

Table 15 – *Distribution of Roommates' Influence on Level of Alcohol Use by Female AUDIT-C Scores*

Roommates' influence on level of alcohol use	Binge Drinking (Female)	
	No Binge Drinking	Likely Binge Drinking
Disagree	273 (52.7%)	63 (35.6%)
Neutral	88 (17.0%)	31 (17.5%)
Agree	157 (30.3%)	83 (46.9%)
Column Totals	518 (100%)	177 (100%)

Note: $X^2 = 18.5, p < 0.05$. Numbers in parentheses indicate column percentages.

When comparing the number of sexual partners in the last 6 months with AUDIT-C scores, a trend was found for both female ($X^2 = 75.0, p < 0.05$) and male ($X^2 = 13.7, p < 0.05$) participants. When the number of sexual partners in the last 6 months increased to 2-3, 4-5, and 6 or more sexual partners, the percentage of likely binge drinking levels increased as well. See Table 16 for the distribution of AUDIT-C scores of females by the number of sexual partners in the last 6 months and Table 17 for the distribution of AUDIT-C scores of males by the number of sexual partners in the last 6 months.

Table 16 – Distribution of Number of Sexual Partners in Last 6 Months by Female AUDIT-C Scores

Number of sexual partners in last 6 months	Binge Drinking (Female)		
	No Binge Drinking	Likely Binge Drinking	Row Totals
No sexual partners	176 (82.6%)	37 (17.4%)	213 (100%)
1 sexual partner	408 (83.3%)	82 (16.7%)	490 (100%)
2-3 sexual partners	102 (60.4%)	67 (39.6%)	169 (100%)
4-5 sexual partners	21 (50.0%)	21 (50.0%)	42 (100%)
6 or more sexual partners	8 (38.1%)	13 (61.9%)	21 (100%)

Note: $X^2 = 75.0$, $p < 0.05$. Numbers in parentheses indicate row percentages.

Table 17 – Distribution of Number of Sexual Partners in Last 6 Months by Male AUDIT-C Scores

Number of sexual partners in last 6 months	Binge Drinking (Male)		
	No Binge Drinking	Likely Binge Drinking	Row Totals
No sexual partners	81 (91.0%)	8 (9.0%)	89 (100%)
1 sexual partner	114 (83.2%)	23 (16.8%)	137 (100%)
2-3 sexual partners	42 (70.0%)	18 (30.0%)	60 (100%)
4-5 sexual partners	13 (68.4%)	6 (31.6%)	19 (100%)
6 or more sexual partners	8 (73.7%)	3 (27.3%)	11 (100%)

Note: $X^2 = 13.7$, $p < 0.05$. Numbers in parentheses indicate row percentages.

The average AUDIT-C score for GLO members was 4.4 ($SD=2.27$) while non-GLO members had an average score of 3.4 ($SD=2.05$). Female GLO members had an average AUDIT-C score of 4.2 ($SD=2.15$) while male GLO members had an average AUDIT-C score of 5.0 ($SD=2.49$). These scores were lower than AUDIT-C scores of female GLO members living in dry GLO-designated housing ($M = 5.02$) and male GLO members living in dry and wet GLO-designated housing ($M = 7.94$; $M = 7.42$) (Brown-Rice & Furr, 2015). Female non-GLO members had an average score of 3.2 ($SD=1.82$) while male non-GLO members had an average score of 4.2 ($SD=2.47$). Statistical difference was found between the AUDIT-C scores of female GLO and non-GLO

members ($X^2 = 27.1, p < 0.05$), displaying female GLO members (38.8%, $n/N = 66/170$) had a higher percentage of participants score in the likely binge drinking category than female non-GLO members (20.1%, $n/N = 154/766$). Comparison of the AUDIT-C scores of male GLO and non-GLO members did not find statistical significance ($X^2 = 1.6, p = 0.21$) but showed the same trend of male GLO members (24.2%, $n/N = 15/62$) being more likely to score in the likely binge drinking category than male non-GLO members (17.3%, $n/N = 44/255$).

Nonprescription Drug Use. Participants were asked about use of nonprescription drugs in their lifetime and during the last 6 months. The categories of prescription drugs used in this study were stimulants (e.g. Adderall, Ritalin, Concerta, Desoxyn, Dexedrine, Focalin), pain killers (e.g. Vicodin, OxyContin, Percocet, Methadone, Codeine), and sedatives (e.g. Valium, Xanax, Ativan, Klonopin). Stimulants were the most used nonprescription drugs by participants within the last 6 months (5.8%, $n/N = 94/1,617$), and use of nonprescription pain killers (2.0%, $n/N = 30/1,535$) and sedatives (2.0%, $n/N = 30/1,512$) in the last 6 months were equal. These frequencies were consistent with findings from Christensen's (2017) study conducted on the same target population.

Statistical differences were found in nonprescription stimulant ($X^2 = 7.7, p < 0.05$), pain killer ($X^2 = 19.1, p < 0.05$), and sedative ($X^2 = 14.0, p < 0.05$) use by participants ages 18-20 and 21-25 in the last 6 months. Participants ages 18-20 were more likely to use nonprescription stimulants (67.0%, $n/N = 63/94$), pain killers (53.3%, $n/N = 16/30$), and sedatives (60.0%, $n/N = 18/30$) in the last 6 months than their counterparts ages 21-25. When comparing use of nonprescription stimulants ($X^2 = 22.1, p < 0.05$), pain killers ($X^2 = 20.0, p < 0.05$), and sedatives ($X^2 = 18.6, p < 0.05$) in the last 6 months and current

residence, the highest frequencies of use in the last 6 months for nonprescription stimulants (60.6%, $n/N = 57/94$), pain killers (60.0%, $n/N = 18/30$), and sedatives (60.0%, $n/N = 18/30$) were for participants who lived off campus. No significant trends were identified when comparing nonprescription drug use in the last 6 months and roommates' influence on level of nonprescription drug use.

No significant trends arose when comparing nonprescription drug use of GLO and non-GLO members in the last 6 months. GLO members reported using nonprescription stimulants (13.9%, $n/N = 35/251$) in the last 6 months more than nonprescription pain killers (2.2%, $n/N = 5/225$) and sedatives (3.2%, $n/N = 7/218$).

Substance Use. Participants were asked to report the use of the following substances in the last 6 months: marijuana, cocaine, methamphetamine, MDMA/molly, amphetamines, heroin, LSD/acid, psilocybin, and other illegal drugs not listed. Participants reported use as either daily, weekly, monthly, less than monthly, or never in the last 6 months. See Table 18 for the distribution of substance use in the last 6 months. Marijuana use yielded the highest frequency for all substances used in the last 6 months (44.1%, $n/N = 712/1,614$), with cocaine use as the second highest frequency (9.1%, $n/N = 146/1,612$). Marijuana use also had the highest frequencies for less than monthly, monthly, weekly, and daily use in the last 6 months.

The only statistically significant difference that emerged between the substance use in the last 6 months of participants ages 18-20 and 21-25 was in marijuana use ($X^2 = 12.2$, $p < 0.05$). Participants ages 18-20 yielded higher frequencies for less than monthly (62.3%, $n/N = 212/340$), monthly (70.3%, $n/N = 85/121$), weekly (59.1%, $n/N = 81/137$), and daily (57.9%, $n/N = 66/114$) use of marijuana in the last 6 months than participants

ages 21-25. When current residence was considered, a significant trend occurred for marijuana ($X^2 = 56.7, p < 0.05$), cocaine ($X^2 = 41.8, p < 0.05$), MDMA/molly ($X^2 = 27.9, p < 0.05$), and LSD/acid ($X^2 = 19.5, p < 0.05$) use in the last 6 months. Participants who lived off campus yielded higher frequencies for less than monthly (59.7%, $n/N = 203/340$; 80.6%, $n/N = 87/108$), monthly (58.7%, $n/N = 71/121$; 62.1%, $n/N = 18/29$), weekly (59.1%, $n/N = 81/137$; 62.5%, $n/N = 5/8$), and daily (71.9%, $n/N = 82/114$; 100%, $n/N = 1/1$) marijuana and cocaine use in the last 6 months. With the exception of those reporting weekly use of MDMA/molly and LSD/acid in the last 6 months, participants who lived off campus yielded the highest frequencies for reporting MDMA/molly and LSD/acid use less than monthly (74.7%, $n/N = 68/91$; 74.1%, $n/N = 60/81$) and monthly (75.0%, $n/N = 15/20$; 60.0%, $n/N = 6/10$) in the last 6 months. A trend between substance use in the last months and roommates' influence on level of drug use only existed in the case of marijuana use ($X^2 = 174.5, p < 0.05$). See Table 19 for the distribution of marijuana use in the last months by roommates' influence on level of drug use. As the frequency in use of marijuana in the last 6 months increases from never to daily, the percentage of participants who agree with roommates' influence on level of drug use increases as well.

No significant trends were found when comparing substance use of GLO and non-GLO members in the last 6 months. The most used substance by GLO members in the last 6 months was marijuana (56.8%, $n/N = 142/250$), followed by cocaine (18.8%, $n/N = 47/250$) and MDMA/molly (12.8%, $n/N = 32/250$). A higher percentage of GLO members (56.8%, $n/N = 142/250$) used marijuana at some rate in the last 6 months than non-GLO members (41.8%, $n/N = 570/1,364$), which echoed findings in a larger study on ever use of marijuana in resident and non-resident GLO members and non-GLO members

(43.5%, $n/N = 3,150/7,242$; 52.4%, $n/N = 569/1,086$; 34.5%, $n/N = 25,503/73,923$)

(Sidani et al., 2013).

Table 18 – Distribution of Substance Use in Last 6 Months

Substance	Frequency (%)					Row Totals
	Never	<Monthly	Monthly	Weekly	Daily	
Marijuana	902 (55.9%)	340 (21.1%)	121 (7.5%)	137 (8.5%)	114 (7.1%)	1,614 (100%)
Cocaine	1,466 (90.9%)	108 (6.7%)	29 (1.8%)	8 (0.5%)	1 (0.1%)	1,612 (100%)
Methamphetamine	1,608 (99.8%)	2 (0.1%)	1 (0.1%)	0 (0.0%)	0 (0.0%)	1,611 (100%)
MDMA/Molly	1,499 (93.1%)	91 (5.7%)	20 (1.2%)	1 (0.1%)	0 (0.0%)	1,611 (100%)
Amphetamines	1,576 (97.9%)	21 (1.3%)	4 (0.3%)	4 (0.3%)	5 (0.3%)	1,610 (100%)
Heroin	1,607 (99.9%)	2 (0.1%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1,609 (100%)
LSD/Acid	1,516 (94.2%)	81 (5.0%)	10 (0.6%)	3 (0.2%)	0 (0.0%)	1,610 (100%)
Psilocybin	1,571 (97.5%)	36 (2.2%)	4 (0.3%)	1 (0.1%)	0 (0.0%)	1,612 (100%)
Other illegal drugs	1,567 (97.4%)	30 (1.9%)	7 (0.4%)	3 (0.2%)	2 (0.1%)	1,609 (100%)

Table 19 – Distribution of Marijuana Use in Last 6 Months by Roommates' Influence on Level of Drug Use

Marijuana use in last 6 months	Roommates' influence on level of drug use		
	Disagree	Neutral	Agree
Never	565 (63.3%)	55 (43.0%)	30 (18.3%)
<Monthly	192 (21.5%)	24 (18.8%)	43 (26.2%)
Monthly	57 (6.4%)	16 (12.5%)	27 (16.5%)
Weekly	41(4.6%)	19 (14.8%)	34 (20.7%)
Daily	37 (4.2%)	14 (10.9%)	30 (18.3%)
Column Total	892 (100%)	128 (100%)	164 (100%)

Note: $X^2 = 174.5$, $p < 0.05$. Numbers in parentheses indicate column percentages.

Alcohol and substance use related to sexual behavior. In addition to reporting alcohol and substance use, participants were asked to report if they had sex while under the influence of alcohol or another substance in the last 6 months.

Alcohol and sex. If participants answered “Yes, not in the last 6 months” or “No” to having sex while under the influence of alcohol in the last 6 months, then they were brought to the next set of questions. If participants answered “Yes, in the last 6 months,” they were directed to answer how many sexual partners they had sex with while under the influence of alcohol or another substance in the last 6 months and how often they had sex while under the influence of alcohol or another substance in the last 6 months. Of 1,625 participants, a total of 30.4% ($n/N = 494/1,625$) had sex while under the influence of alcohol in the last 6 months. A majority of participants reported having sex with 1 sexual partner (76.8%, $n/N = 378/492$) and less than monthly (67.5%, $n/N = 332/492$) while under the influence of alcohol in the last 6 months. A trend emerged when comparing the number of sexual partners participants had sex with and the frequency of participants having sex while under the influence of alcohol in the last 6 months ($X^2 = 52.6, p < 0.05$). For participants who had sex while under the influence of alcohol monthly, the percentage of participants increased as the number of sexual partners participants had sex with while under the influence of alcohol increased. Of participants who had sex while under the influence of alcohol in the last 6 months, the majority were participants ages 18-20 (54.3%, $n/N = 268/494$) and participants who lived off campus (70.0%, $n/N = 346/494$). GLO members accounted for 25.7% ($n/N = 127/494$) of participants who had sex while under the influence of alcohol in the last 6 months. A little more than half

(50.2%, $n/N = 127/253$) of GLO members had sex while under the influence of alcohol in the last 6 months.

Nonprescription drug use and sex. Of the participants who used nonprescription drugs in the last 6 months, 20.2% ($n/N = 20/97$) had sex while under the influence of a nonprescription stimulant, 36.7% ($n/N = 11/30$) had sex while under the influence of a nonprescription pain killer, and 33.3% ($n/N = 10/30$) had sex while under the influence of a nonprescription sedatives in the last 6 months. The majority of participants only had sex with 1 sexual partner while under the influence of a nonprescription stimulant (70.0%, $n/N = 14/20$) and pain killer (81.8%, $n/N = 9/11$). An error in data collection showed the number of participants who had sex with 1 or more sexual partners while under the influence of a nonprescription sedative in the last 6 months ($n = 13$) did not equal the number of participants who reported having sex while under the influence of a nonprescription drug in the last 6 months ($n = 10$). Therefore, the subset of data could not be analyzed. Due to the significantly small subpopulation of participants who had sex while under the influence of a nonprescription drug in the last 6 months, no trends were found when compared to age, current residence, and GLO membership.

Substance use and sex. Out of the 733 participants who in some way answered if they had sex while under the influence of marijuana, cocaine, methamphetamine, MDMA/molly, amphetamines, heroin, LSD/acid, psilocybin, or other illicit drugs, 38.2% ($n/N = 280/733$) reported having sex while under the influence of a substance in the last 6 months. Marijuana yielded the highest percentage of participants who had sex while under the influence of a substance in the last 6 months (36.2%, $n/N = 257/711$), followed closely by cocaine (31.5%, $n/N = 46/146$), MDMA/molly (29.5%, $n/N = 33/112$), and

other illegal drugs (31.0%, $n/N = 13/42$). When asked to report the number of sexual partners participants had sex with while under the influence of a substance in the last 6 months, most participants (60.0%, $n/N = 168/280$) reported 1 sexual partner. Participants who reported having sex while under the influence of marijuana in the last 6 months had the highest rates of having sex with 2 or more sexual partners while under the influence of a substance (17.1%, $n/N = 44/257$). Of participants who had sex while under the influence of marijuana in the last 6 months, 58.4% ($n/N = 150/257$) were ages 18-20, 70.0% ($n/N = 180/257$) lived off campus, and 21.0% ($n/N = 54/257$) were GLO members. Of the 142 GLO members who used marijuana in the last 6 months, 38.0% ($n/N = 54/142$) had sex while under the influence of marijuana in the last 6 months. Due to the small subpopulation of participants who reported having sex while under the influence of cocaine, methamphetamine, MDMA/molly, amphetamines, heroin, LSD/acid, psilocybin, and other illicit drugs in the last months, no trends were found to be statistically significant for age, current residence, or GLO membership.

Ch. 5: Discussion

Description of the Study

The purpose of this study was to increase the understanding of how living arrangements influence the RSB of GLO members and to identify significant trends and patterns of other risky behaviors engaged in by undergraduate students at UNR. The study assessed and analyzed general trends of behaviors of participants at UNR and compared them to other trends and demographic characteristics. This chapter will share and discuss major findings, limitations, implications, and recommendations for future research.

Summary and Discussion of Major Findings

A total of 2,049 survey responses were collected in this study, and 1,779 participants were deemed applicable and relevant for analysis. This study obtained a response rate of 10.9% (N = 16,333) for the mandatory questions of the total undergraduate population at the target university. Number of responses per question vary since each question was not required to be answered to complete the survey. Data analysis and cross-tabulations of sexual behaviors, living arrangements, alcohol and substance use, and demographic variables helped this study determine how living arrangements influence RSB of GLO members at UNR and identify other significant trends and patterns.

Living arrangements. Living arrangements were a focus of this study to see what correlations and significant trends existed when a participant's current residence was compared with different behaviors and demographic variables.

Current residence. Data suggested as students got older and progressed through their undergraduate studies, they were more likely to reside in off campus living options. This trend was true for both GLO and non-GLO members. Approximately 3,100 students live on campus in residence halls at UNR (Joe Crowley Student Union, 2017), with most of those spots reserved for first-year, transfer, and international students. A total of 64 upperclassmen in this study resided in residence halls or GLO-designated housing, which means off campus housing or a parent's home are the most likely options for students continuing their education after their first two years of undergraduate study. Most participants in this study resided in off campus housing options (52.5%, $n/N = 934/1,779$), which allow students to partake in risk taking behaviors that living in the residence halls, in GLO-designating housing, and with parents do not allow. Participants who lived off campus showed significant trends of engaging in risk behavior regarding alcohol and substance use, as well as RSB. Diversity in living options during college needs to be accounted for when assessing the risk behaviors and attitudes of students since where a student lives can influence their level and choice of risky behavior.

Roommates' influence. All participants who lived in off campus housing options displayed higher levels of agreement with roommates' influence on level of alcohol, drug, and nonprescription drug use, as well as higher scores on the AUDIT and AUDIT-C (in the case of female participants). Living in an environment with solely peers allows for students to influence one another without interruptions from authority figures or limitations from rules and policies, particularly when engaging in risky behaviors and in holding certain viewpoints. An almost even number of participants ages 18-20 lived on (41.2%, $n/N = 482/1,169$) and off campus (39.2%, $n/N = 458/1,169$), but participants ages

18-20 who lived off campus reported agreeing more with roommates' influence on level of alcohol, drug, and nonprescription drug use than their on campus counterparts of the same age. An increase in age of participants translated to decreased levels of agreement with roommates' influence on level of alcohol, drug, and nonprescription drug use.

Students ages 18-20 were more susceptible to their roommates' influence when it came to engaging in risky and illegal behaviors. Without the added influence and input of authority figures seen in residence halls or while living with parents and family, younger emerging adults are persuaded more easily by their roommates to engage or not engage in risky behaviors. Combined influences from roommates and authority figures in residence halls or living at home with parents and family may protect against increased engagement in risky behavior by younger emerging adults at UNR. The university does not require incoming students to live on campus for a set number of years, but students could benefit from the controlled and monitored environment prior to seeking out off campus living options. Across all variables, engagement in risky behaviors was significantly lower when students lived with parents. When the structured and monitored living environment is maintained throughout the transition from high school to college, and when parents are in some part involved in their students' education and campus involvement, students are less likely to partake in risky behaviors and report attitudes in favor of risk taking. Universities need to evaluate how they can replicate these results seen in students living at home in on and off campus living options while also promoting independence and autonomy.

GLO members who lived off campus showed higher levels of agreement with roommates' influence on level of alcohol use. Data from participants who identified as

GLO members do not indicate having GLO roommates had a significant influence on their behaviors and viewpoints. The only significance emerged when GLO participants reported higher levels of agreement with roommates' influence on level of alcohol use and identified having 1 or 2-3 GLO roommates out of 2-3 roommates overall. The data did not support a trend of GLO participants reporting higher levels of agreement on roommates' influence when participants lived in GLO-designated housing, which generally houses 6 or more members. Due to the small percentage of students who live in GLO-designated housing at UNR, particularly male GLO members which do not witness the same restrictions and policies seen in GLO-designated housing for female GLO members, there may not have been enough data to support claims made in other studies about GLO-designated housing promoting risky behavior (Borsari & Carey, 1999).

Alcohol and Substance Use. While use of alcohol, nonprescription drugs, and other substances by UNR students were not the main focus of this study, engagement in these behaviors were observed to test significant trends identified in previous UNR studies (Christensen, 2017) and in recognition of other studies which found correlations between risky alcohol and drug use and living arrangements of GLO members (Borsari & Carey, 1999; Wechsler et al., 2009; Baer, 1994; Sidani et al., 2013; McCabe et al., 2005).

Alcohol use. The average total scores and average scores for female and male participants for the AUDIT and AUDIT-C in this study were consistent with data from previous studies on the UNR undergraduate population (Christensen, 2017) and displayed lower or similar averages to other studies (DeMartini & Carey, 2012; Olthuis et al., 2011; Barry et al., 2015; Wahesh & Lewis, 2015). While three-fourths of the participants qualified as low risk drinkers, one-fifth of participants were deemed risky/hazardous

drinkers and almost one-fourth of female participants and almost one-fifth of male participants displayed binge drinking behaviors. These findings should not deter the university from recognizing students who need potential drinking interventions and education for their drinking habits. Regardless of age and excluding low risk drinkers, all participants displayed a trend of agreeing with roommates' influence on level of alcohol use. Participants who lived off campus and participants who identified as GLO members had higher AUDIT scores on average. Living off campus allows students to freely engage in alcohol use without restrictions, which suggests living on campus in residence halls and with parents and family play a role in creating safer or decreased habits of alcohol use.

The trend of alcohol use being a significant issue with students at UNR stayed prevalent among many participants who lived off campus, regardless of other demographic variables. GLO membership correlated with higher AUDIT and AUDIT-C scores across multiple variables. The findings of this study conflicted with previous studies which claimed GLO members living in GLO-designated housing engage in higher and riskier alcohol use (Wechsler et al., 2009; Baer, 1994). One reason for this study was to prove that keeping assessment of risky behavior of GLO members limited to GLO-designated housing restricts the knowledge and scope of how different living arrangements affect a student's likelihood to engage in risky behavior. The model of living arrangements differs across universities and needs to be accounted for when determining which set of living arrangements affect risky behaviors more. Focusing purely on GLO-designated housing could prove to be more effective at universities with

larger GLO systems and housing models, but UNR cannot be limited to such an analysis with the small subpopulation of GLO members living in GLO-designated housing.

Nonprescription drug use. Contrary to the Christensen (2017) findings on nonprescription drug use and age, this study found younger participants ages 18-20 had the highest rates of use for nonprescription drugs. The populations of each study differed widely since this study assessed data on undergraduate students ages 18-25 while Christensen (2017) collected and analyzed data on undergraduate students of all ages. While the data from this study suggests nonprescription drug use is rising in younger emerging adults attending UNR, no definitive conclusions can be made based on previous findings.

Substance use. After the use of alcohol, marijuana was the most used substance by participants in the last 6 months. A higher percentage of participants ages 18-20 used marijuana in the last 6 months. While marijuana is more accessible now in the state of Nevada, access to purchasing marijuana in a legal fashion has more steps than purchasing alcohol. Marijuana dispensaries require customers to provide identification so employees can enter the customer's personal information and identification information into the dispensary's system. Once validated by the computer system which checks a customer's identification information with the Department of Motor Vehicles or other government departments, the customer's information is stored for future use and the customer is allowed to purchase marijuana products. With the extensive legal process of purchasing marijuana from a dispensary, the high marijuana use rate of younger emerging adults in this study may have resulted from older students or individuals purchasing marijuana for younger students or younger students maintaining connections with private distributors

who produced and sold marijuana prior to its legalization in Nevada. People who are not of legal age to purchase alcohol are able to access alcohol via older friends and family members or use of false identification. Monitoring of underage individuals purchasing alcohol at convenience stores and gas stations does not equate to the obstacles and regulations placed on purchasing recreational marijuana. Therefore, this study was not surprised to find alcohol use to outnumber marijuana use 77.6% ($n/N = 1,272/1,639$) to 44.1% ($n/N = 712/1,614$).

Higher marijuana and illicit drug use by off campus participants as opposed to on campus participants and participants living with parents was expected due to the privilege of freedom off campus students enjoy. Marijuana can be used legally in a private residence, but many students rent from homeowners who outline a form of “no drug use” policy in the lease. Homeowners and renting agencies are not present most of the time to enforce these policies. Residence halls and GLO-designated housing for females in sororities have similar policies which do not tolerate the use of any drugs on the property and have staff to enforce these policies around the clock. Therefore, off campus living options allow more freedom to partake in drug use.

The most used substances by GLO members in the last 6 months were marijuana and cocaine. When directly compared to previous studies on UNR undergraduate students (Christensen, 2017), this study observed heightened cocaine use in the span of one year. The addictive qualities of cocaine, along with ties to damaging short-term and long-term effects, qualify cocaine as a much more intense and dangerous drug of choice than marijuana. However, this study cannot claim there was a definitive doubling in cocaine use since Christensen (2017) since both studies observed different age ranges of

undergraduate students at UNR. Future studies should monitor illicit drug use on this campus to see if illicit drug use grows over the years and needs to be given more attention by health initiatives and addiction treatment services on campus.

Risky Sexual Behavior. This study also looked to address the inconsistencies found in previous research with how much influence living arrangements have on RSB of GLO members (DeSimone, 2009; Ragsdale et al., 2012; Scott-Sheldon et al., 2008), as well as the RSB of UNR undergraduates ages 18-25. RTQ scores were used to identify any trends or correlations with heightened risk propensity and RSB. Knowles (1976) did not find RTQ scores to correlate with or serve as reliable predictors of RSB. The implementation of the RTQ in this study tested if a different demographic population from the Knowles (1976) study would display statistically significant differences in risk propensity across different RSB. While RTQ scores did not correlate with all RSB assessed by this study, correlations with RTQ scores and higher risk propensity urge future studies to test the psychometrics of the RTQ against RSB of different populations to better understand the questionnaire's potential effectiveness, reliability, and validity in identifying pro-risk taking attitudes in different populations.

Sexual partners. As the number of sexual partners in the last 6 months increased, the more likely participants received a higher score on RTQ. This trend prevailed across age, GLO membership, and current residence, signifying a campus trend at UNR. Participants who had 4 or more sexual partners in the last 6 months displayed a higher rate of using emergency contraceptives in the last 6 months. An increased use of emergency contraceptives may be a response to the consequences of engaging in RSB such as a higher number of sexual partners in a shorter time frame, inconsistent

contraceptive and protective barrier use during each sexual encounter, or a combination of both. In addition, with increased number of sexual partners in a shorter time frame comes the potential for contracting STIs or HIV. Health initiatives need to communicate the importance of contraceptive and protective barrier use, as well as open dialogue about STI/HIV status and number of sexual partners, between students engaging in heightened sexual activity. While students were not asked of any consequences they experienced as a result of RSB in this study, developing students' understanding and awareness of different ways to protect against potential consequences of RSB (e.g. unplanned pregnancy, contracting an STI or HIV) could reduce the number of sexual partners students have sex with in shorter periods of time or increase safe sex practices and behaviors between students. An increased number of sexual partners in the last 6 months also correlated with higher scores on the AUDIT and AUDIT-C. These findings are supported by this study's trend of higher number of sexual partners in the last 6 months accompanied by heightened risk propensity. In this population of undergraduate students, scoring high on the RTQ indicated a higher likelihood of engaging in risky behaviors and/or maintaining risk attitudes. Therefore, health initiatives should be aware of students' likelihood to engage in multiple risky behaviors if they identify engaging in one type of risky behavior. Further testing needs to be done with the RTQ to test its scope and generalizability to the UNR campus and other universities and to see if it can be a useful tool for screening risky behavior and mindsets on a larger scale.

Protective barrier use. The number of participants who never used barriers during any form of sex in the last 6 months was significantly high. Regardless of what type of sex an individual is having, lack of using protective barriers during sex increases an

individual's chances of contracting an STI or HIV and sometimes becoming pregnant. While there were statistically significant trends identified between RTQ scores and protective barrier use during oral sex and vaginal intercourse, none of the trends were consistent across the levels of barrier use frequency. Increased RTQ scores failed in this situation to correlate with increased RSB, which suggest the RTQ should be further developed to increase its applicability, reliability, and validity across multiple forms of RSB.

Relationship status of participants revealed participants in some form of a relationship at the time of taking the survey were more likely to never use protective barriers during vaginal intercourse in the last 6 months while participants not in a relationship were more likely to always use protective barriers during vaginal intercourse in the last 6 months. Across all relationship types, participants had higher rates of not using protective barriers during anal intercourse in the last 6 months. While participants who were not in a relationship reported the highest level of using protective barriers during sex, the majority of participants across all forms of relationship status were not using protective barriers in the last 6 months. This significant trend of not using protective barriers during sex was observed in the Christensen (2017), suggesting there has been little to no change in the population's RSB related to barrier use. Health initiatives on the UNR campus need to assess the effectiveness, scope, and reach of safe sex education since students are engaging in high rates of unprotected sex. Emerging adults tend to believe they are invincible and invulnerable when exploring their identity, ignoring the potential consequences of RSB and other risky behavior. Negative consequences of RSB experienced by participants in this study were not analyzed, and a

significantly small population of students were diagnosed ($n = 46$) and treated ($n = 38$) for STIs and/or HIV in the last 6 months. While all negative consequences of RSB cannot be seen through this study's results, health initiatives on college campuses have a duty to educate students on susceptibility to different consequences of RSB and provide students with useful information about safe sex to utilize when making decisions about engaging in RSB.

STI/HIV screening. Only one-third of the participants in this study who indicated having sex with at least 1 partner in the last 6 months were tested for STIs or HIV in the last 6 months. For the participants who reported having more than 1 sexual partner in the last 6 months, lack of screening for STIs or HIV after each sexual partner constitutes a significant trend of RSB. Health initiatives need to investigate as to why UNR students display low screening rates when levels of sexual activity, particularly RSB, are high. While most participants who were diagnosed with an STI or HIV in the past 6 months received treatment in the last 6 months, a small percentage of participants still had not received treatment for an STI or HIV. These participants may have been in the process of seeking treatment or could not afford or access treatment depending on the diagnosis. Regardless of the reason, there is potential for those participants to be engaging in RSB if they continue to have sex with the knowledge of having an STI or HIV.

The older a participant was, the more likely they were to get tested for an STI or HIV in the last 6 months. Participants who lived off campus got tested for an STI or HIV in the last 6 months at a higher rate than participants in other current residences. GLO members displayed a higher rate of getting an STI or HIV screening in the last 6 months than non-GLO members. This trend did not confirm the reason why participants ages 21-

25, participants who lived off campus, and participants who identified as GLO members got screened for STIs or HIV at a higher rate than participants ages 18-20, participants who lived on campus or with a parent, and participants who did not identify as a GLO member. Older age, living off campus, and GLO membership could be indicators of students who were more informed about STI and HIV screening and preventative with their sexual health. On the other hand, participants ages 21-25, participants who lived off campus, and participants who identified as GLO members could have engaged in more RSB such as lack of barrier use or increased number of sexual partners in a shorter time frame. In this scenario, STI or HIV screening served as a response to increased engagement in RSB. Based on the findings in this study, neither trend can be confirmed without participants' feedback on their reasoning for getting tested for STIs or HIV in the last 6 months. Health initiatives on campus should design ways to collect data on why students seek out STI and HIV screening to develop a better understanding of students' safe and risky sexual activity and knowledge of STIs and HIV. With this enhanced understanding, health programs and initiatives can be built based on sexual activity of students and what gaps exist in student knowledge about STI and HIV screening.

Sex while under the influence. Sex had while under the influence of a mind-altering substance qualifies as RSB in this study. Any individual involved in a sexual encounter cannot provide consent when under the influence of a mind-altering substance. Due to experimentation with sexual identity and mind-altering substances, this study expected to collect data which revealed a significant number of participants having sex while under the influence of mind-altering substances, specifically alcohol and marijuana.

Almost one-third of participants who had sex in the last 6 months had sex while under the influence of alcohol. Participants who had sex while under the influence of alcohol monthly in the last 6 months showed an increase in the number of sexual partners they had sex with while under the influence of alcohol in the last 6 months. Participants ages 18-20 and participants who lived off campus had the highest rates of having sex while under the influence of alcohol in the last 6 months. One-fourth of participants who had sex while under the influence of alcohol in the last 6 months were GLO members, which accounted for a little more than half of all GLO members in the study. With the high rates of alcohol use witnessed in this study, the levels of sex had while under the influence of alcohol were expected, especially with participants ages 18-20, participants who lived off campus, and participants who identified as GLO members. These subpopulations demonstrated the need for health initiatives to address sex while under the influence of alcohol. While this topic is popular with new student orientation, residential curriculum in residence halls, and presentations and workshops designed for GLOs, the trend of engaging in sexual activity while under the influence of alcohol continues to prevail. All students should be targeted by presentations and workshops addressing the severity of sex while under the influence of alcohol, but younger emerging adults, students who live off campus, and GLOs need more attention according to the findings of this study.

Due to a significantly low number of participants reporting any use of nonprescription drugs in the last 6 months and a potential error in data collection, no significant trends of having sex while under the influence of nonprescription drugs were identified. When participants had sex while under the influence of nonprescription

stimulants and pain killers in the last 6 months, a majority of participants reported only having sex while under the influence with 1 sexual partner. A more presentative sample is needed to determine if any trends of sex while under the influence of nonprescription drug use exist at UNR link in other studies (McCabe et al., 2005).

More than one-third of the participants who reported using a substance in the last 6 months had sex while under the influence of a substance in the last 6 months. Sex while under the influence of marijuana, cocaine, MDMA/molly, and other illegal drugs yielded the highest percentages for participants who used these respective drugs in the past 6 months. Similar to sex while under the influence of alcohol, participants who lived off campus, participants ages 18-20, and participants who identified as GLO members displayed higher rates of having sex while under the influence of marijuana in the last 6 months. While marijuana use was expected to be accompanied by a high level of having sex while under the influence of marijuana, higher percentages of sex while under the influence of cocaine, MDMA/molly, and LSD/acid were not anticipated. Like sex while under the influence of alcohol, UNR health initiatives, programs, and workshops need to be developed to address sex while under the influence of substances.

According to the data in this study, engaging in this type of RSB appears to be a trend for younger emerging adults, students who live off campus, and GLO members. Early intervention methods outside of new student orientation may be needed to continue the conversation and education about the risk of having sex while under the influence of a mind-altering substance. Curriculums on safe and consensual sex for residence halls and off campus living need to be developed so information distributed to students on and off campus is consistent and accessible.

The data from this study provided information on significant trends and patterns for specific health and risky behaviors of UNR students and some insight on how different aspect of living arrangements may affect RSB of GLO members at the target university. In retrospect, much of the survey design collected data specific to the UNR undergraduate population as opposed to general data applicable to other studies in the literature. This narrowed focus still allowed for some comparisons to be made with emerging adults at different colleges in other studies, but overall more research and data is needed to determine how similar and different UNR is to similar populations. Data collected are beneficial to developing an enhanced understanding of health and risky behaviors of all UNR students and particular subpopulations, and healthcare professionals and higher education administrators can proceed with improving old and developing new health initiatives, programs, and workshops based on previous, current, and future research.

Limitations

Several limitations existed in this study which potentially affected the overall analysis and results. First, participants who completed the survey are inherently different from participants who chose not to do so. A participant's willingness to complete the survey was what the study relied on since the researcher decided not to provide incentives for participants who completed the survey. If incentives were provided to encourage students to participate in the study and complete the survey, then the data would be limited to students willing to participate when incentivized. Overall, willingness to participate without incentives was preferred over willingness to participate in the presence of incentives.

Second, the diversity of the undergraduate students who completed the survey lacked in multiple areas. This study had a narrow focus of collecting data from undergraduate students between the ages of 18 and 25 for the purpose of adhering to Arnett's (2000) theory of emerging adulthood, which excluded undergraduate students older than 25 from the data pool. The majority of participants who completed the survey identified as White/Caucasian, straight/heterosexual females, indicating a significant lack of representation of males and undergraduates from other ethnicities/races and sexual orientations. Further analysis of frequencies of other demographic characteristics such as age, year in school, and major also displayed a lack of representation. With these smaller sample sizes of population subsets came the potential for data trends and patterns in analyzed sexual behaviors and alcohol and substance use to be skewed. These data collected in this study were shown to be similar to those collected in the Christensen (2017) study and national ACHA-NCHA-II for Spring 2017.

Also, at the beginning of the Spring 2018 semester, six of the largest fraternities affiliated with UNR's Interfraternity Council (IFC) disaffiliated from the university due to disagreements on the new relational agreement released by the university for 2018 (Rivas & Purdue, 2018). All clubs and organizations were required to agree and sign the relational agreement to be affiliated with the university, which provided access to resources on campus and through the Associated Students of the University of Nevada (ASUN) and privileges to host events and meetings on campus. Since the six fraternities disaffiliated from IFC, and therefore the university, participants who identified as members of a GLO potentially may have reported the category of their GLO as "Interfraternity Council fraternity" or "I don't know."

Additionally, participants who did not identify as GLO members were not able to indicate if they had GLO roommates due to the construction of the survey. Therefore, the only data collected on GLO roommates were from participants who identified as GLO members.

Third, participants may have been affected by social desirability bias and reported more positive than honest answers for risk taking behavior, sexual behaviors, and alcohol and drug use.

Fourth, participants were required to recall information from the last 6 months and 12 months. Therefore, data collected were dependent upon the accuracy of participants in recalling frequencies and patterns of specific behaviors related to sex and alcohol and drug use, which may have been skewed or altered due to the fallibility of memory.

Fifth, the utilization of Likert-scales in questions potentially diminished the differentiation between the options listed.

Sixth, not every question in the survey was mandatory to answer. Therefore, participants could have chosen to not answer a question which utilized skip logic and potentially answered questions which did not pertain to them. For example, if a participant did not answer “Have you ever had sex with a partner(s) while you were under the influence of alcohol?” but should have chosen an option which would redirect the participant to the next set of questions instead of the follow-up questions, they had the opportunity to answer the follow-up questions which were not relevant to them and potentially interfere with the data totals.

The final limitation in the study arose in the statements pertaining to roommates’ influence on specific behaviors and viewpoints of the participants. The wording of the

statements did not indicate if a participant's agreement or disagreement with the statement translated to increased or decreased levels of using alcohol, drugs, and nonprescription drugs or positive or negative viewpoints on birth control use and STI and HIV screening. The level of agreement chosen by participants simply meant agreed or disagreed with the statements as they read in the survey.

Implications

In assessing the different trends and patterns which emerged from this study, participants who lived off campus, were ages 18-20, and identified as GLO members displayed increased trends of engaging in risky behaviors when compared to their counterparts. While university administrators and health professionals need to develop programs and initiatives which educate and equip students with preventative and protective tools and methods effective against consequences of risky behavior, college and health administrations must also be aware of these significant trends in behaviors and attitudes which vary across different groups and subpopulations. In the case of UNR, continuous observation and surveying of younger students, students who live off campus, and GLO members will monitor the significant trends identified in this study and determine if programs and initiatives are impacting these subpopulations. Significant trends of roommates influencing students' behavior should be utilized as a tool to combat engagement in risky behavior. Implementation of programs and initiatives that utilize peers to educate other students may have a more positive impact on student engagement in risky behavior. In addition to risky alcohol and drug behavior, this study proved RSB in the form of increased number of sexual partners, decreased use of protective barriers during sex and STI and HIV screening, and high rates of having sex while under the

influence of a mind-altering substance was prominent at UNR and needs to be addressed with more effective methods and tactics. Participants who lived off campus, as well as participants who identified as GLO members, displayed a mix of engaging in some RSB analyzed in this study at higher rates than their counterparts but not all of them.

Recommendations for Future Research

Future research should continue to look into how the living arrangements of college students, specifically GLO members, impact engagement in RSB. The diversity of participants in this study may have revealed more significant trends across more variables, so future studies should aim to collect data from a diverse population. More GLO members, particularly males, need to be surveyed so as to identify if trends in this study and others exist in small populations or populations of variable sizes. Special attention should be given to comparisons of on campus living and off campus living. A future study that cross-examines data from multiple institutions of higher education with varying subpopulations living in different types of residences could find trends and patterns present across universities. This study would benefit from choosing universities which have no GLO-designated housing, affiliated but not university owned and regulated GLO-designated housing, and university owned and regulated GLO-designated housing. The varying structures and functions of these GLO housing models could present both unique and overlapping trends. Future studies should be mindful of the amount of questions asked to not deter students from completing the survey and narrow the focus of the survey to specific behaviors and attitudes. Shorter surveys also have the opportunity to be comprised completely of mandatory questions, which would collect more data, solve for potential errors, and develop more consistent trends and findings.

Also, surveys that require reports on roommates' influence on specific behaviors and attitudes should be more specific about whether the influence increases or decreases the behavior and promotes or negates the attitude. Finally, participants should be given the opportunity to answer open-ended questions related to a study's research question. Collecting perceptions and viewpoints that stand alone from the statistical data would give researchers more insight to the population they studied.

Conclusions

The findings of this study confirm Arnett's (200) theory of emerging adulthood in which one way individuals ages 18-25 engage in role experimentation and identify exploration is through engaging in risky behaviors. Significant trends of risky alcohol and drug use and RSB were identified in UNR undergraduates, specifically in participants ages 18-20, participants who lived off campus, and participants who identified as GLO members. While GLO members were the main subpopulation analyzed in this UNR study, patterns of behavior and attitudes were found to be significant across the total population surveyed. Administrators within higher education and health professionals working on college campuses must find ways to continuously assess and target these varying subpopulations which engage in increased rates of risky behavior and simultaneously recruit and educate students to become knowledgeable and positive influences on their peers.

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Appendix A

Undergraduate Living Arrangements and Health Behaviors Survey and Data Distribution

Thank you in advance for completing this survey. Your responses will help identify risk factors for students attending the University of Nevada, Reno.

The data and information provided from the survey will be used in my thesis, but no identifying information will be collected. You will not be identified individually in any way, and no other attempts will be made to contact you after completion of the survey.

Participation in this study is completely voluntary. There are no consequences if you choose not to participate in this study, or if you discontinue participation at any time. If you feel uncomfortable while answering any of the survey questions you may take a break and come back later, choose to not answer a question, or stop the process altogether.

Table A1 – *Undergraduate Living Arrangements and Health Behaviors Survey and Data Distribution*

Demographics	
Question 1: Are you over the age of 18?* (N = 1,779)	
Yes	1,779
Question 2: What was your enrollment status in Fall 2017?* (N = 1,779)	
Full-time (12 or more credits per semester)	1,700
Part-Time (Less than 12 credits per semester)	79
Question 3: How old are you?* (N = 1,779), $\bar{X} = 20.04$, $SD = 1.66$	
Age 18-20	1,169
Age 21-25	610
Question 4: What sex were you assigned at birth?* (N = 1,779)	
Female	1,299
Male	476
Intersex	4
Question 5: Which term do you use to describe your gender identity? (N = 1,775)	
Woman	1,255
Man	472
Trans Woman	0
Trans Man	7
Non-binary	17
Genderqueer	6
Genderfluid	9
Gender Non-Conforming	5

Another identity	4
Question 6: Which term best describes your sexual orientation? (N = 1,774)	
Straight/heterosexual	1,411
Gay	38
Lesbian	20
Bisexual	158
Queer	10
Pansexual	58
Questioning	37
Asexual	35
Another identity	7
Question 7: How do you usually describe yourself? (N = 1,777)	
White	1,156
Black	43
Hispanic or Latino/a	221
Asian or Pacific-Islander	158
American Indian, Alaskan Native, or Native Hawaiian	19
Biracial or Multi-racial	158
Other	22
Question 8: What is your current relationship status? (N = 1,775)	
Not in a relationship	939
In a monogamous relationship	744
In an open relationship	40
Married	23
Other	29
Question 9: What is your year in school?*(N = 1,779)	
1 st year undergraduate	515
2 nd year undergraduate	412
3 rd year undergraduate	433
4 th year undergraduate	293
> 4 th year undergraduate	126
Question 10: What is your approximate cumulative grade point average? (N = 1,777)	
3.7 to 4.0	620
2.7 to 3.69	1,008
1.7 to 2.69	134
1.69 or below	15
Question 11: To what UNR college or school does your major belong to?*(N = 1,779)	
CABNR	155
Business	199
Education	98
Engineering	230

Liberal Arts	353				
Science	279				
Health Sciences	319				
Journalism	48				
Dual Major/Interdisciplinary	74				
Undeclared	24				
Question 12: Are you currently or have you been a member of the United States Armed Services (Active Duty, Reserve, or National Guard)? (N = 1,775)					
None	1,748				
National Guard/Reserve	19				
Active Duty	4				
Question 13: Within the last 6 months, have you participated in organized college athletics at any of the following levels? (N = 1,775)					
None	1,462				
University team	40				
Club sports	102				
Intramural sports	149				
Other	54				
Question 14: Where do you currently live?*(N = 1,779)					
Campus residence hall	480				
Fraternity or sorority house	32				
Other college/university housing	93				
Parent/Guardian	333				
Other off-campus housing	841				
Question 15: How many other students live with you in your primary residence?*(N = 1,779)					
I do not live with other students	466				
1 student	432				
2-3 students	579				
4-5 students	242				
6+ students	60				
LIVING ARRANGEMENTS					
Question 16: Please rank the following questions pertaining to your living arrangements and the students who you live with:					
	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
My roommates influence my level of alcohol use (N = 1,291)	421	284	212	316	58
My roommates influence my level of drug use (N = 1,292)	671	291	149	139	42

My roommates influence my level of nonprescription drug use (N = 1,291)	829	265	119	60	18
My roommates influence my views on birth control methods (N = 1,292)	672	281	191	115	33
My roommates influence my views on STI and HIV screening (N = 1,291)	665	263	204	124	35
CAMPUS INVOLVEMENT					
Question 17: Are you a member of a Greek-letter organization? (N = 1,753)					
Yes	281				
No	1,472				
Question 18: How many Greek-letter organizations are you a member of? (N = 279)					
1	254				
2	19				
3	4				
4+	2				
Question 19: Which label does your Greek-letter organization fall under? Select all that apply if you to belong to organizations in multiple categories. (N = 279)					
Interfraternity Council fraternity	49				
Panhellenic Council sorority	155				
Multicultural Greek Council fraternity or sorority	23				
Pre-professional or major-focused fraternity	49				
Honor society	26				
I don't know	11				
Question 20: What is the primary focus of your Greek-letter organization? Select all that apply. (N = 280)					
Social	205				
Academic	162				
Service	172				
Cultural	26				
Professional	86				
I don't know	4				
Question 21: How many hours per week on average do you spend participating in activities associated with your Greek-letter organization(s)? (N = 276)					
1-3 hours per week	135				
4-6 hours per week	117				
7-9 hours per week	16				

10+ hours per week	8
Question 22: Of the Greek-letter organizations you participate in, how many leadership positions do you hold? (N = 272)	
1	97
2	25
3	6
I do not hold a leadership position	144
Question 23: Do you live with other student(s) who are members of a Greek-letter organization? (N = 277)	
Yes	139
No	138
Question 24: Of the students you currently live with, how many are members of a Greek-letter organization? (N = 139)	
1 student	58
2-3 students	50
4-5 students	1
6+ students	30
Question 25: What is the primary focus of your roommate's or roommates' Greek-letter organization? Select all that apply if you participate in more than one Greek-letter organization. (N = 139)	
Social	114
Academic	67
Service	76
Cultural	6
Professional	32
I don't know	7
Question 26: Which label does your roommate's or roommates' Greek-letter organization fall under? Select all that apply if you belong to organizations in multiple categories. (N = 139)	
Interfraternity Council fraternity	30
Panhellenic Council sorority	89
Multicultural Greek Council fraternity or sorority	5
Pre-professional or major-focused fraternity	17
Honor society	3
I don't know	6

RISK TAKING QUESTIONS (Knowles Risk Taking Questionnaire)					
Question 27: Below are 20 different statements. Please rate how much you agree or disagree with each of these statements.					
	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
It's always best to plan before doing. (N = 1,683)	436	975	201	51	20
I'm not very cautious. (N = 1,682)	40	181	258	883	320
I enjoy being with people who take risks. (N = 1,680)	63	507	687	338	85
I enjoy doing things when I know what will happen. (N = 1,680)	348	997	274	54	7
Being a little reckless is good for you. (N = 1,680)	109	856	509	181	25
I'm the kind of person who avoids risks. (N = 1,681)	97	568	532	437	47
I don't think it's a good idea to hitchhike. (N = 1,680)	847	518	190	78	47
I'd rather not ride with someone who speeds. (N = 1,681)	178	515	557	347	84
In most situations it's better not to take a chance. (N = 1,680)	52	337	591	613	87
I'd rather not gamble if there is a better way to do things. (N = 1,681)	426	917	238	83	17
I'm the kind of person who enjoys taking risks. (N = 1,677)	38	417	628	519	75
For most things, it is probably better to know exactly where you are going. (N = 1,680)	251	989	312	119	9
I avoid situations that are likely to be dangerous. (N = 1,680)	323	831	323	178	25

I tend to like people with a wild streak. (N = 1,681)	58	416	591	520	96
I sometimes take a risk just for the excitement. (N = 1,679)	65	640	371	494	109
I'm pretty cautious about what I do. (N = 1,676)	236	1,000	334	96	10
I'd rather take a risk than do nothing at all. (N = 1,679)	114	705	491	311	58
It is better to be safe than sorry. (N = 1,681)	336	917	348	74	6
There is an excitement in breaking the rules. (N = 1,679)	78	597	452	418	134
I enjoy getting into situations that I don't know if I can get out of. (N = 1,682)	13	55	162	705	747
SEXUAL BEHAVIORS					
Question 28: Within the last 6 months, with how many partners have you engaged in oral sex, vaginal intercourse, and/or anal intercourse? (N = 1,674)					
No sexual partners	531				
1 sexual partner	789				
2-3 sexual partners	250				
4-5 sexual partners	68				
6 or more sexual partners	36				
Question 29: Within the last 6 months, did you have:					
	No	Yes, not in last 6 months		Yes	
Oral sex? (N = 1,109)	56	41		1,1012	
Vaginal intercourse? (N = 1,107)	74	31		1,002	
Anal intercourse? (N = 1,093)	831	83		179	
Question 30: Within the last 6 months, how often did you or your partner(s) use a condom or other protective barrier (e.g. male condom, female condom, dam, glove, etc.) during:					
	Never	Rarely	Sometimes	Most of the time	Always
Oral sex (N = 1,100)	988	38	12	10	52
Vaginal intercourse (N = 1,090)	333	132	119	208	298
Anal intercourse (N = 913)	689	18	24	19	163

Question 31: Within the last 6 months, did you have sexual partner(s) who were: (N = 1,112)	
Straight/heterosexual	1,037
Gay	33
Lesbian	24
Bisexual	79
Queer	12
Pansexual	16
Questioning	14
Asexual	1
Another identity	3
Question 32: Within the last 6 months, which of the following was the primary method (used most often) of birth control you or your partner(s) used to prevent pregnancy during vaginal intercourse? (N = 1,111)	
Birth control pills	489
Birth control shots	17
Birth control implants	49
Birth control patch	5
Vaginal ring	19
Intrauterine device (IUD)	97
Male condom	285
Female condom	1
Withdrawal	45
None, sexually active in 6 months	20
N/A	64
Not sexually active	10
Other method	10
Question 33: Within the last 6 months, have you or your partner(s) used emergency contraception (“morning after pill”)? (N = 1,114)	
N/A	52
No	914
Yes	140
I don’t know	8
Question 34: Have you been diagnosed with a sexually transmitted infection (STI) within the last 6 months (e.g. chlamydia, gonorrhea, herpes, etc.)? (N = 1,640)	
No	1,594
Yes	416
Question 35: Have you been tested for a sexually transmitted infection (STI) and/or HIV within the last 6 months (e.g. chlamydia, gonorrhea, herpes, etc.)? (N = 1,640)	
No	1,224
Yes	416

Question 36: Have you received treatment for a sexually transmitted infection (STI) within the last 6 months (e.g. chlamydia, gonorrhea, herpes, etc.)? (N = 1,637)					
No	1,599				
Yes	38				
ALCOHOL AND SUBSTANCE USE					
Question 37: How often do you have a drink containing alcohol? (N = 1,639)					
Never	367				
Monthly or less	497				
2-4 times a month	509				
2-3 times a week	225				
4 or more times a week	41				
Question 38: How many drinks containing alcohol do you have on a typical day when you are drinking? (N = 1,260)					
1-2 drinks	547				
3-4 drinks	474				
5-6 drinks	176				
7-9 drinks	48				
10 or more drinks	15				
Question 39: Please mark the appropriate column for each row:					
	Never	< Monthly	Monthly	Weekly	Daily
How often do you have six or more drinks on one occasion? (N = 1,261)	468	521	181	88	3
How often during the last year have you found that you were not able to stop drinking once you had started? (N = 1,259)	1,078	119	41	16	5
How often during the last year have you failed to do what was normally expected of you because of drinking? (N = 1,260)	1,001	206	36	15	2
How often during the last year have you needed a first drink in the morning to get yourself going after a heavy drinking session? (N = 1,261)	1,222	29	3	6	1

How often during the last year have you had a feeling of guilt or remorse after drinking? (N = 1,258)	831	321	79	24	3
How often during the last year have you been unable to remember what happened the night before because of your drinking? (N = 1,258)	798	360	83	17	0
Question 40: Have you or someone else been injured as a result of your drinking? (N = 1,259)					
No	1,105				
Yes, but not in the last year	81				
Yes, during the last year	73				
Question 41: Has a relative or friend or a doctor or another health worker been concerned about your drinking or suggested you cut down? (N = 1,258)					
No	1,184				
Yes, but not in the last year	20				
Yes, during the last year	54				
Question 42: Have you ever had sex with a partner(s) while you were under the influence of alcohol? (N = 1,625)					
No	892				
Yes, not in last 6 months	239				
Yes, in last 6 months	494				
Question 43: In the last 6 months, how many partners have you had sex with while you were under the influence of alcohol? (N = 492)					
1 sexual partner	378				
2-3 sexual partners	97				
4-5 sexual partners	11				
6 or more sexual partners	6				
Question 44: In the last 6 months, how often have you had sex with a partner while you were under the influence of alcohol? (N = 492)					
< Monthly	332				
Monthly	122				
Weekly	38				
Daily	0				
Question 45: Have you taken a prescription stimulant (Adderall, Ritalin, Concerta, Desoxyn, Dexedrine, Focalin) that was not prescribed to you? (N = 1,617)					
No	1,430				
Yes, not in last 6 months	93				
Yes, during last 6 months	94				

Question 46: Have you had sex with a partner(s) while you were under the influence of a prescription stimulant (Adderall, Ritalin, Concerta, Desoxyn, Dexedrine, Focalin) that was not prescribed to you? (N = 99)	
No	77
Yes, not in last 6 months	2
Yes, during last 6 months	20
Question 47: In the last 6 months, how many partners have you had sex with while you were under the influence of a prescription stimulants (Adderall, Ritalin, Concerta, Desoxyn, Dexedrine, Focalin) that was not prescribed to you? (N = 99)	
No sexual partners	79
1 sexual partner	14
2-3 sexual partners	6
4-5 sexual partners	0
6 or more sexual partners	0
Question 48: Have you taken a prescription pain killer (Vicodin, OxyContin, Percocet, Methadone, Codeine) that was not prescribed to you? (N = 1,535)	
No	1,423
Yes, not in last 6 months	82
Yes, during last 6 months	30
Question 49: Have you had sex with a partner(s) while you were under the influence of a prescription pain killer (Vicodin, OxyContin, Percocet, Methadone, Codeine) that was not prescribed to you? (N = 116)	
No	101
Yes, not in last 6 months	4
Yes, during last 6 months	11
Question 50: In the last 6 months, how many partners have you had sex with while you were under the influence of a prescription pain killer (Vicodin, OxyContin, Percocet, Methadone, Codeine) that was not prescribed to you? (N = 116)	
No sexual partners	105
1 sexual partner	9
2-3 sexual partners	2
4-5 sexual partners	0
6 or more sexual partners	0
Question 51: Have you taken a prescription sedative (Valium, Xanax, Ativan, Klonopin) that was not prescribed to you? (N = 1,512)	
No	1,414
Yes, not in last 6 months	68
Yes, during last 6 months	30
Question 52: Have you had sex with a partner(s) while you were under the influence of a prescription sedative (Valium, Xanax, Ativan, Klonopin) that was not prescribed to you? (N = 140)	
No	128
Yes, not in last 6 months	2

Yes, during last 6 months	10				
Question 53: In the last 6 months, how many partners have you had sex with while you were under the influence of a prescription sedative (Valium, Xanax, Ativan, Klonopin) that was not prescribed to you? (N = 140)					
No sexual partners	127				
1 sexual partner	12				
2-3 sexual partners	1				
4-5 sexual partners	0				
6 or more sexual partners	0				
Question 54: In the last six months, how often have you used:					
	Never	< Monthly	Monthly	Weekly	Daily
Marijuana (N = 1,164)	902	340	121	137	114
Cocaine (N = 1,612)	1,466	108	29	8	1
Methamphetamine (N = 1,611)	1,608	2	1	0	0
MDMA/Molly (N = 1,611)	1,499	91	20	1	0
Amphetamines (N = 1,610)	1,576	21	4	4	5
Heroin (N = 1,609)	1,607	2	0	0	0
LSD/Acid (N = 1,610)	1,516	81	10	3	0
Psilocybin (N = 1,612)	1,571	36	4	1	0
Other illegal drugs (N = 1,609)	1,567	30	7	3	2
Question 55: Have you had sex with a partner(s) while you were under the influence of:					
	Yes, in last 6 months	Yes, not in last 6 months	No		
Marijuana (N = 711)	257	80	374		
Cocaine (N = 146)	46	10	90		
Methamphetamine (N = 3)	0	0	3		
MDMA/Molly (N = 112)	33	13	66		
Amphetamines (N = 34)	6	7	21		
Heroin (N = 2)	0	1	1		
LSD/Acid (N = 93)	13	11	69		
Psilocybin (N = 40)	5	3	32		
Other illegal drugs (N = 42)	13	3	26		

Question 56: In the last 6 months, how many partners have you had sex with while you were under the influence of:					
	No sexual partners	1 sexual partner	2-3 sexual partners	4-5 sexual partners	6 or more sexual partners
Marijuana (N = 257)	1	212	31	8	5
Cocaine (N = 45)	5	34	5	1	0
Methamphetamine (N = 0)	0	0	0	0	0
MDMA/Molly (N = 33)	3	27	3	0	0
Amphetamines (N = 6)	0	5	1	0	0
Heroin (N = 0)	0	0	0	0	0
LSD/Acid (N = 13)	0	13	0	0	0
Psilocybin (N = 5)	0	5	0	0	0
Other illegal drugs (N = 13)	0	12	1	0	0

Note: *Mandatory survey questions.

Appendix B IRB Exemption



University of Nevada, Reno

Research Integrity Office
218 Ross Hall / 331,
Reno, Nevada 89557
775.327.2368 / 775.327.2369 fax
www.unr.edu/research-integrity

DATE: January 22, 2018
TO: Lisa Thomas, PhD
FROM: University of Nevada, Reno Institutional Review Board (IRB)

PROJECT TITLE: [1170826-1] Effects of Living Arrangements on Risky Sexual Behaviors of Fraternity and Sorority Members at the University of Nevada, Reno
REFERENCE #: Social Behavioral
SUBMISSION TYPE: New Project
ACTION: DETERMINATION OF EXEMPT STATUS
DECISION DATE: January 22, 2018
REVIEW CATEGORY: Exemption Category # 2

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The Research Integrity Office, or the IRB reviewed this project and has determined it is EXEMPT FROM IRB REVIEW according to federal regulations. Please note, the federal government has identified certain categories of research involving human subjects that qualify for exemption from federal regulations.

Only the Research Integrity Office and the IRB have been given authority by the University to make a determination that a study is exempt from federal regulations. The above-referenced protocol was reviewed and the research deemed eligible to proceed in accordance with the requirements of the Code of Federal Regulations on the Protection of Human Subjects (45 CFR 46.101 paragraph [b]).

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Reviewed Documents

- Application Form - Exempt 2 Survey.docx (UPDATED: 01/19/2018)
- Consent Form - Survey Welcome Letter.docx (UPDATED: 01/19/2018)
- Proposal - HURA Proposal.docx (UPDATED: 12/14/2017)
- Questionnaire/Survey - Survey.docx (UPDATED: 01/19/2018)
- Training/Certification - L. Thomas - CITI (6.2.2014).pdf (UPDATED: 12/28/2017)
- Training/Certification - Houston CITI Certificate.pdf (UPDATED: 12/14/2017)
- University of Nevada, Reno - Part I, Cover Sheet - University of Nevada, Reno - Part I, Cover Sheet (UPDATED: 12/28/2017)

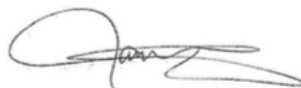
If you have any questions, please contact Valerie Smith at 775.327.2370 or at valeries@unr.edu.

NOTE for VA Researchers: You are not approved to begin this research until you receive an approval letter from the VASNHCS Associate Chief of Staff for Research stating that your research has been approved by the Research and Development Committee.

Sincerely,



Richard Bjur, PhD
Co-Chair, UNR IRB
University of Nevada Reno



Janet Usinger, PhD
Co-Chair, UNR IRB
University of Nevada Reno

This letter has been electronically signed in accordance with all applicable regulations, and a copy is retained within University of Nevada, Reno IRB's record.

Appendix C Welcome Letter

Dear [undergraduate student's name],

My name is Travis Houston and I am currently an undergraduate student at the University of Nevada, Reno (UNR), pursuing a Bachelor's Degree in Psychology. I am assessing the effects of living arrangements on health behaviors of undergraduate students on the UNR campus for my senior Honors thesis and would greatly appreciate your participation in my research study. Enclosed you will find a [link to a survey](#) through SurveyMonkey that will include questions on a variety of demographic characteristics, sexual orientation, sexual health behaviors, alcohol and drug use, and involvement on campus.

The total time to complete this survey is approximately 15-20 minutes. I ask all participants to complete the survey online via SurveyMonkey, a completely confidential and anonymous survey tool to ensure the participants' rights are protected. You may access the survey from any computer, but please make sure to follow the log out procedure at the completion of the survey to protect your anonymity and confidentiality.

Participation in this study is completely voluntary. There are no consequences if you choose not to participate in this study, or if you discontinue participation at any time. If you feel uncomfortable while answering any of the survey questions you may take a break and come back later, choose to not answer a question, or stop the process altogether.

By completing this survey via SurveyMonkey, you are consenting to participate in this research study and affirming that you are 18 years of age or older and have attended the university for at least one semester. The data and information provided from the survey will be used in my thesis, but no identifying information will be collected. You will not be identified individually in any way, and no other attempts will be made to contact you after completion of the survey.

For any questions or concerns regarding this project or your rights as a participant you can [contact me anytime via email](#). You may also contact my thesis advisor Dr. Lisa Thomas at (775) 682-7155/lmthomas@unr.edu, or the [UNR Institutional Review Board](#) at (775) 327-2368.

Thank you in advance for your consideration for participation of this study.

[**You may access the survey by clicking this link.**](#)

Sincerely,
Travis Houston
Honors Program, Psychology
University of Nevada, Reno

Appendix D
Comparisons of Demographic Data from This Study and from the Christensen (2017) Study and Spring 2017 National ACHA-NCHA-II

Table D1 – Age Comparisons

Source	18 to 20	21 to 24	25 and older	Row Totals	Mean (SD)	Median
Study Participants	1,169 (65.7%)	577 (32.4%)	33 (1.9%)	1,779 (100%)	20.0 (1.66)	20
Christensen (2017)	1,171 (57.2%)	624 (30.5%)	254 (12.4%)	2,049 (100%)	21.6 (5.56)	20
National (Spring 2017)*	28,007 (59.6%)	15,667 (33.3%)	3,332 (7.1%)	47,006 (100%)	20.9 (4.09)	20

Note: Numbers in parentheses indicate row percentages. *Responses labeled as “unknown” were removed from this data.

Table D2 – Sex at Birth Comparisons

Source	Female	Male	Row Totals
Study Participants*	1,299 (73.2%)	476 (26.8%)	1,775 (100%)
Christensen (2017)	1,353 (66.0%)	696 (34.0%)	2,049 (100%)
National (Spring 2017) **	31,932 (68.9%)	14,404 (31.1%)	46,336 (100%)

Note: Numbers in parentheses indicate row percentages. *Participants in this study that identified as intersex at birth were removed from this data. **Responses labeled as “non-binary” and “unknown” were removed from this data.

Table D3 – Gender Identity Comparisons

Source	Woman	Man	Non-cisgendered/ Non-binary	Row Totals
Study Participants	1,255 (70.7%)	472 (26.6%)	48 (2.7%)	1,775 (100%)
Christensen (2017)	1,319 (64.4%)	680 (33.2%)	48 (2.3%)	2,047 (100%)
National (Spring 2017)	31,932 (67.2%)	14,404 (30.3%)	1,216 (2.6%)	47,552 (100%)

Note: Numbers in parentheses indicate row percentages. *Responses labeled as “unknown” were removed from this data.