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Health Behaviors Survey

An Examination of Undergraduate Students' Substance Use

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ABSTRACT

Objective: This study determined the prevalence of alcohol, drug, and nonmedical prescription drugs at a small private university. In addition, risk and protective factors are examined.

Method: The Core Institute (Southern Illinois University) was contracted to administer an anonymous, Web-based 49-item survey to matriculated undergraduate students, aged 18–23 years. Data were obtained on student behaviors, perceptions, consequences of substance use, risk factors, and coping strategies. Statistical analysis included descriptive measures, cross-tabs, *t* test, and chi-square.

Results: The response rate was 14%, which is consistent with other CORE Institute surveys. Almost half of the total respondents were from the college of nursing (46%), and most participants were female (82%). There was a significant association between heavy drinking and grades; the B students engaged in more binge drinking. Living on campus and being involved in Greek life confer a higher level of risk for sexual assault when alcohol was consumed. Most participants (57%) were unaware of campus resources for assistance with alcohol or drug problems.

Conclusion: Campus administrators now have a better awareness related to the extent of drug and alcohol use among the student body. A faculty engagement workshop was developed to provide tools to assess and communicate with students. Improvements are anticipated to enhance student relationships and decrease incidents of drug- and alcohol-related sexual assault or misconduct.

Keywords: binge drinking, campus health, student behaviors, undergraduate student substance misuse

INTRODUCTION

The college campus environment is a place that supports intellectual, emotional, and other areas of personal growth into adulthood; conversely, this environment also poses potential hazards to healthy development when students engage in irresponsible alcohol and substance use. Although some reports show a slight decrease nationally in heavy episodic drinking, full-time college students show higher levels than their peers. The consequences of heavy alcohol intake and misuse include injury, assault, sex without consent, academic troubles, alcohol dependence, car fatalities, suicide attempts, and death (Brown et al., 2009; Gonzalez & Hewell, 2012; Hingson, 2010; National Institute on Alcohol Abuse and Alcoholism, 2015). National trends also show increasing marijuana use and nonmedical use of prescription drugs (NMUPD) in both high school students and young adults (McCabe, West, Teter, & Boyd, 2012; Substance Abuse and Mental Health Services Administration, 2012; U.S. Department of Health and Human Services, National Institutes of Health, National Institute on Drug Abuse, 2014; Young, Glover, & Havens, 2012).

The purposes of this study were to determine the prevalence of alcohol and other substance use (including NMUPD) in 18- to 23-year-old traditional matriculated undergraduate students and to ascertain risk and protective factors. Although anecdotal reports from campus stakeholders at this urban Catholic university acknowledged the impact of alcohol misuse on academic progression and sexual assault, the extent of the problem had not been known. A dramatic increase in emergency transportation for alcohol intoxication served as an impetus for this study. The findings from this study will be used to guide planning and funding for a larger prevention and intervention project to address alcohol and other drug use behaviors.

Conceptual Framework

The environment is the unique practical focus of nursing (Donaldson & Crowley, 1978). Within the discipline of nursing, Florence Nightingale is the founding mother of social ecological health models. Bronfenbrenner (1994) refined social ecological theory by indicating that behavior is influenced by and also affects multiple levels within one's environment: the microsystem, mesosystem, exosystem, and macrosystem (see Figure 1). When using ecological models in health promotion, that is, substance use risk reduction, behavior is viewed as being determined by multiple levels of influence,

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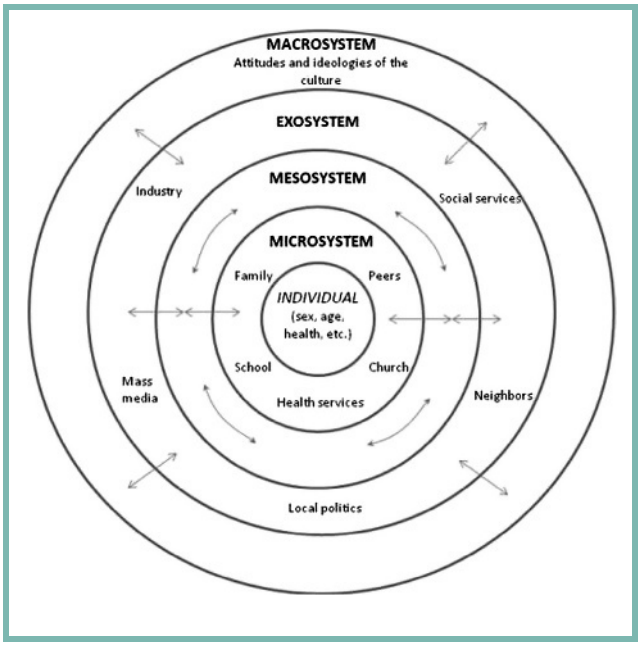

Figure 1. Social ecological influences.

including intrapersonal factors (biological, psychological), interpersonal processes (social, cultural), organizational factors, community factors, physical environment, and public policy. In developing behavior-specific interventions, the nurse must identify the salient influences from each level and how they interact across multiple levels. Creating a desire for and support of behavioral change entails using multilevel interventions (Kypri, Paschall, Langley, Baxter, & Bourdeau, 2010; McLeroy, Bibeau, Steckler, & Glanz, 1988; Sallis, Owen, & Fisher, 2008; Stokols, 1996). The ultimate goal for high-level wellness is promoting a healthy campus of persons concerned for each other's welfare.

The macrosystem can be defined as the attitudes and ideologies of the culture. When examining the predominant culture related to substance use across college campuses, we know that substance use and misuse is highly prevalent in this population and that expectancies and social norms are influential (Bronfenbrenner, 1994; Wardell & Read, 2013). The exosystem includes all of the factors that determine one's surrounding environment at large and exerts indirect influences on an individual. Examples of the exosystem on a college campus include the mission and policies of the college, policies within the dormitories, the proximity of basic necessities such as food and areas to socialize, and access and responsiveness of public safety. The mission of this Midwestern university emphasizes the charisms of the founding Jesuit and Mercy religious orders and exists to provide excellent, student-centered, undergraduate and graduate education (integrating intellectual, spiritual, ethical, and social development) in an urban context. Issues related to social justice and community are interwoven throughout the curriculum, which is a unique feature of this values-based education. "Cura personalis" (or care of the individual person) predominates at Jesuit universities (McGinn, 2013). Caring for the student from a "whole person perspective" entails creating and sustaining an exosystem that addresses all the factors that impact student performance, for example, their financial challenges, family structures and processes, or the student's social milieu.

The interaction of two or more microsystems creates a mesosystem (Bronfenbrenner, 1994). Mesosystems and microsystems impact individuals directly. For example, a student who stays out late partying with peers and does not complete classwork, which results in failing grades, has created an intersection of two microsystems (social and academic). When using a social–ecological model to guide research, one must involve all stakeholders (the mesosystem) to plan for success in research design and changes that should occur as a result of the knowledge gained from inquiry.

To bridge the gap for students who are in a developmentally vulnerable time of transition, most colleges and universities (over 65%) have full-time faculty engaging in academic advising (McGinn, 2013). First year students report a positive relationship between the amount of contact that they have with advisors and their perceptions of a supportive university environment, which is important from a social–ecological perspective (NACADA, 2011; National Survey of Student Engagement, 2014). Faculty advisors in a mission-driven institution should exemplify and model holistic care of students by showing a sincere interest in all aspects of the individual's life and not only focusing on academic parameters of success. The importance of support and connection cannot be overemphasized, as the assistance of faculty members is one of the most important predictors of long-term positive outcomes, including overall well-being, engagement at work, and a strong connection to the institution (Gallup-Purdue Index, 2014).

METHODS

Sample and Data Collection

This descriptive survey received human subjects approval from the university institutional review board. An email invitation was sent to 2,175 individuals. To enhance participation, the investigators activated the mesosystem by engaging campus stakeholders 6 months before the Web-based survey. Leaders of student campus organizations (Athletics, Resident Advisors, Orientation Leaders, Greek Life, Campus Ministry) were informed of and asked to promote participation. All undergraduate students were sent an email from the Office of Student Life with a brief description of the study. If they chose to participate, they could then click on the survey Web link. Consent information was imbedded in the introductory page of the survey. The choice of survey title, "Health Behaviors Survey," was based on the feedback of student leaders across all majors. Because the survey encompassed both problematic behaviors as well as protective and coping strategies, students believed that a more general title would increase the likelihood that individuals would open and respond to potentially sensitive information related to their drug and alcohol use.

The CORE Institute at Southern Illinois University at Carbondale was contracted to administer the electronic voluntary, anonymous survey. The CORE Institute was responsible for emailing the students and sending reminder emails for nonrespondents. One survey invitation and two reminder emails were sent to all students who met the inclusion criteria. The email invitation included a Web link with a nine-digit log-in code used to access the survey. The link took them to the actual survey, and the nine-digit code was also used to determine which students needed email reminders sent by the CORE Institute. If students chose to provide their email address after completing the survey, 40 were randomly designated to receive an incentive (a $10.00 gift card to a local retailer). The email addresses were in no way connected with the participants' survey results. The nine-digit identifier (2048-bit SSL encryption) merely served as a locator for the data. It was neither linked to the user nor downloaded with the data, thus keeping the data anonymous. The survey was enabled over a 4-week period, from mid-October to mid-November 2014. Campus faculty promoted, encouraged, and incentivized students to participate in this campus-wide activity.

Instrument

The CORE Alcohol and Drug Survey (CORE Institute, Southern Illinois University Carbondale, 2014) is a reliable and valid standardized instrument, widely used across the country in university settings. The instrument consisted of 49 questions that detail demographic characteristics, cofactors, personal and protective or risk factors, and perceptions of peer substance use behavior. It took approximately 30 minutes to complete. The CORE Institute collected and analyzed the data and provided an executive report including the data file to enable further analysis.

Data Analysis

Chi-square was used to compare categorical variables, and the independent samples *t* test (two-tailed) or analysis of variance was used for continuous measures. The following attributes were used to group respondents: gender, place of residence (on or off campus), program of study, grades, participation (or nonparticipation) in intercollegiate athletics, and participation (or nonparticipation) with fraternities or sororities (Greek life). Statistical analyses were performed using SPSS 17.0.

RESULTS

Demographic Characteristics

The population consisted of 2,175 students who met the inclusion criteria (matriculated undergraduate students, aged 18–23 years), with a final sample size of 297, yielding a response rate of 14%. This rate was determined to be consistent with responsiveness to other CORE-Institute-enabled surveys (L. A. Rowland, personal communication, October 28, 2016). Most respondents were freshmen (32.8%), with the other classifications being fairly evenly distributed (19% sophomore, 23.6% junior, 23.3% senior). The mean age of respondents was 19.6 ($SD = 1.435$) years, with 73% of respondents under the legal drinking age. There was a significant difference in age between those living on or off campus. The mean age on campus was 19.05 ($SD = 1.192$) years, and the mean age off campus was 19.96 ($SD = 1.470$) years ($F(1) = 31.671$, $p = .000$). The vast majority of respondents were female (82.2%), which is a greater proportion than the known campus demographic (60% female). Most persons identified as White (84.5%), with the other ethnic groups represented as Black (5%), Asian Pacific Islander (3.7%), and Hispanic (3%). Most respondents were full-time students (97%). The university is primarily a commuter campus, with 80% living off campus. This survey captured a larger proportion of on-campus residents; 40% of respondents reported living on campus. The academic programs of respondents included 46% from nursing, 22% from engineering and science, 12% from liberal arts, 8% from an extension campus, 7% from business, 6% from the College of Health Professions (which includes a physician's assistant program and health administration), and 4% from dental hygiene. The mean grade point average (GPA) for all respondents was 3.427 ($SD = 0.58610$). The mean GPA of athletes (3.58, $SD = 0.527$) was higher than that of nonathletes ($M = 3.41$, $SD = 0.598$; $t(289) = -2.162$, $p = .031$). There were no differences in GPA for any of the other groupings (gender, program, place of residence, or Greek affiliation).

The key findings for alcohol and illegal drug use are presented in Table 1. This sample appears comparable with the larger reference group of institutions that participated in the CORE survey from 2011 to 2013, except that these respondents reported less instances of three or more times a week of alcohol consumption (9.5% vs. 20.5%). Average alcohol use is 2.5 drinks per week, which is less than the national comparison

TABLE 1 Alcohol and Illegal Drug Use in Percentages: Comparison With Reference Group[a]

Substance	Annual Prevalence (AP)	AP Reference Group (RG)	30-Day Prevalence	30-Day Prevalence, RG	Three or More per Week	Three or More per Week, RG
Alcohol	82.1	84.4	67.9	68.7	9.5	20.3
Marijuana	24.5	32.4	12.2	19.0	4.4	7.7
Amphetamine	4.1	5.5	3.4	3.1	0.7	1.5
Hallucinogen	2.4	4.3	1.4	1.3	0.3	0.2

[a]Reference group of national sample: 143,191 students from 312 institutions.

group of 4.4 drinks per week (CORE Institute, Southern Illinois University Carbondale, 2014). The reference group has higher monthly marijuana consumption than this sample (19% vs. 12.2%). A deeper examination of the data indicated that almost 60% of underage (younger than 21 years) students consumed alcohol in the previous 30 days, with 40% reporting heavy episodic drinking (defined as five or more drinks in one sitting); the national average for this behavior is 43.9% (CORE Institute, Southern Illinois University Carbondale, 2014).

Behaviors by Gender, Affiliation, Grades, and Residence

Table 2 illustrates some of the key findings (in percentages) for the student characteristics of gender, age, grades, and place of residence. There were no significant differences in drinks per week for the following groupings: between men and women ($t(293) = 0.751$, $p = .453$), between passing students and failing students ($t(292) = -0.491$, $p = .624$), and between persons residing on and off campus ($t(292) = 0.973$, $p = .331$). In addition, the researchers found no significant differences in drinks per week between athletes and nonathletes ($t(289) = -0.808$, $p = .420$); between members, nonmembers, and associates of fraternities and sororities ($F(3) = 1.209$, $p = .307$); or between students in the different programs or colleges ($F(7) = 0.886$, $p = .518$). Men reported more marijuana use in the last month than women ($\chi^2(4) = 12.575$, $p = .014$). There were no significant differences in recent (within the last 30 days) marijuana use as related to athletic affiliation ($\chi^2(4) = 5.160$, $p = .271$), GPA ($\chi^2(8) = 6.757$, $p = .563$), Greek affiliation ($\chi^2(12) = 12.432$, $p = .412$), or living on/off campus ($\chi^2(4) = 2.441$, $p = .655$).

There was a significant association between grades and excessive drinking ($\chi^2(12) = 30.002$, $p = .003$). The B students engaged in more heavy, episodic drinking. There was not a significant association between those living on or off campus and heavy recent episodic drinking ($\chi^2(4) = 4.794$, $p = .309$). Although the differences in excessive alcohol intake based on where one resided were not statistically significant, the trends and magnitude are concerning. Commuter students have twice the amount of recent excessive drinking (2.2% vs. 0.8%) and driving while impaired than students residing on campus (24.4% vs. 12.1%).

Nonmedical Use of Prescription Drugs

Stimulants are the most common NMUPD: 3.8% reported using once in the last year, and 4.2% reported using six times in the last year. Six percent report having used pain medication once in the last year, and 2.8% report having used it six times in the last year. There was not a significant difference by academic program and having used prescription stimulants ($\chi^2(35) = 51.778$, $p = .034$). Because the researchers employed multiple comparisons in the post hoc analysis, a more stringent .01 significance level was employed. There was a significant association between being an athlete and using pain medication for nonmedical reasons ($\chi^2(5) = 15.218$, $p = .009$), at a frequency of twice a month ($z = 2.70$).

Consequences of Alcohol or Drug Use

Although the number of students reporting negative experiences is somewhat low overall, the use of alcohol or drugs is closely associated with negative experiences (see Tables 2, 3, and 4). The experiences in Table 4 represent another way to view the serious nature of substance misuse. The incidents are grouped according to (a) public misconduct with actual or potential harm to others, (b) possible serious personal problems, and (c) common consequences that indicate overuse. These students had higher proportions than the reference group of driving under the influence (DWI), having been taken advantage of sexually, thoughts of suicide, showing poor performance on a test or project, having a hangover, being nauseated or vomiting, having memory loss, and regretting something.

There was a significant association between those living off campus and DWI ($\chi^2(4) = 13.643$, $p = .009$). Because multiple

TABLE 2 Behavior Differences Among Student Groups: Percentages

	Gender		Age		Average Grades		Campus Residence	
Indicator	**Female**	**Male**	**18–20**	**21+**	**A–B**	**C–F**	**On**	**Off**
n	244	53	216	81	286	10	119	178
Current[a] alcohol use	69.1	62.3	59.5	90.1	68.4	60.0	66.1	69.1
Current[a] marijuana use	11.2	17.0	12.1	12.5	11.6	30.0	11.9	12.4
Current[a] use of other illegal drugs	4.1	9.4	4.7	6.2	4.9	10.0	5.9	4.5
Six or more binges in 2 weeks	1.6	1.9	0.9	3.7	1.4	10.0	0.8	2.2
Driving car under influence[b]	19.1	21.6	13.2	36.3	19.2	30.0	12.1	24.4
Been taken advantage of sexually[b]	9.5	3.9	8.5	8.8	8.9	0	12.9	5.7
Taken advantage of another sexually[b]	1.7	2.0	1.9	1.3	1.4	10.0	2.6	1.1

[a]In the last 30 days. [b]In the last year.

TABLE 3 Experience of Harassment or Violence in Percentages		
Incident	Experienced	Experienced When Used Alcohol or Drugs
Ethnic or racial harassment	6.2	33.3
Threats of physical violence	5.8	58.8
Actual physical violence	2.1	50.0
Theft involving force or threat of force	0.7	50.0
Forced sexual touching or fondling	3.5	60.0
Unwanted sexual intercourse	1.4	75.0

levels of comparisons were made with DWI frequency, the more demanding significance level of .01 was used. Those off campus report more DWIs, most notably driving twice (z score of 2.12) and three to five times (z score of 2.47) in the last year.

Being involved with fraternities and sororities was significantly associated with being taken advantage of sexually ($\chi^2(3) = 13.153$, $p = .004$). Not attending Greek events or belonging to Greek life appears to be a protective factor for sexual assault. Living on campus confers a higher level of risk for being taken advantage of sexually ($\chi^2(1) = 4.693$, $p = .030$). Those living on campus reported unwanted sexual contact at least once within the last year, which is almost double that of commuters.

Perceptions of Others: Social Norming

The perception of one's peers is different than the reported experience of the same respondents. Most persons (91.8%) believe that the average student on campus uses alcohol once a week or more (actual use was reported as 29.7%). Almost 67% believe that the average student on campus uses some form of illegal drug at least weekly, whereas the reported use is 6.1% for the most frequently used illegal drug, which is marijuana. The respondents also attribute drinking as being central to the social life of athletes (63.7%), fraternities (86.8%), and sororities (81.1%). Athletes and those involved in Greek life were a very small proportion of respondents (18% and 8%, respectively). In general, 66.4% believe that alcohol use on this campus is less than those on other campuses, with only 4.5% thinking that alcohol use is greater.

Perceptions of the Campus Environment

Very few students (20.3%) report knowing if the campus has an alcohol and drug prevention program; the only programming that actually occurs on this campus is directed to students in the residence halls. Only 43% of respondents could identify places to go on campus for help with substance use. The most frequently cited place of assistance is the counseling center (70%; see Figure 2). Because most of the respondents reside on campus, there is a clear lack of awareness regarding campus policies, the environment, and available resources. Over half of the respondents (54%) feel valued, and in a separate survey question, 73% of respondents reported feeling that faculty and staff care about them. Sixty percent report that they feel a responsibility to care for others. There were no significant differences in feeling valued as a person by program of study, social affiliation (Greek life), or residing on/off campus. Athletes, however, significantly report that faculty and staff "care for them" ($\chi^2(3) = 7.956$, $p = .047$).

Coping Strategies

Students employ multiple ways of coping: Most frequently cited are engaging with family and friends, listening to music, and sleeping (see Figure 3).

DISCUSSION

Although significant claims of generalizability cannot be made by the authors based on a 14% return rate, the results infer a problem with alcohol and drugs in a segment of the student body. With the intent of measuring prevalence of substance use in this population, it is important to compare the proportion of substance misuse with the CORE reference group. The

TABLE 4 Problematic Experiences as a Consequence of Alcohol and Drug Use by Percentage		
Experience	Sample	Reference Group
Public misconduct		
Driven a car while under the influence	19.5	18.4
Got into an argument or fight	23.8	26.9
Been in trouble with the police, residence hall, or other college authorities	11.0	10.8
Possible serious personal problems		
Performed poorly on a test or important project	20.5	19.2
Been hurt or injured	15.1	14.1
Been taken advantage of sexually	8.5	7.9
Thought might have a drinking or other drug problem	7.9	8.8
Seriously thought about suicide	5.2	4.1
Common consequences		
Had a hangover	61.0	58.9
Got nauseated or vomited	53.6	49.8
Had memory loss	33.4	32.6
Done something I later regretted	39.9	32.9

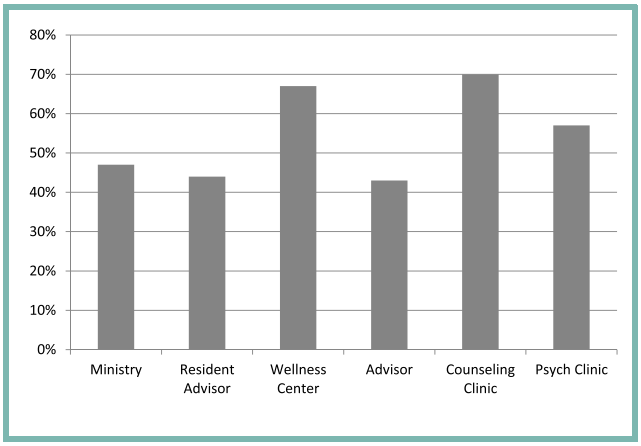

Figure 2. Student perceived resources available on campus.

CORE provides comparisons with a reference group of students from across the United States who also attend small universities. They report an average response rate between 10% and 15% (L. A. Rowland, personal communication, October 28, 2016). For some categories, these students were very similar to the reference group data, and in other categories, they were well below (see Table 1). For marijuana and illicit amphetamines, the respondents were similar or below the annual, monthly, and regular (three or more times a week) use patterns. Nonmedical use of prescription pain relievers was similar or below the national averages reported in all youth, aged 18–25 years (U.S. Department of Health and Human Services, National Institutes of Health, National Institute on Drug Abuse, 2014). The finding of a significant difference in nonmedical use of pain relievers between athletes and nonathletes was congruent with national data that report that 23% have used pain medication within the last year (NCAA, 2014). In only one category of NMUPD (stimulants in the past month) did these students exceed the national average. The percentage reported was 5.1% as compared with national rates of 1.2% (U.S. Department of Health and Human Services, National Institutes of Health, National Institute on Drug Abuse, 2014).

Three major findings of statistical and clinical significance surfaced from the results. The first concerns the risk factors for having been taken advantage of sexually, being a campus resident, and being involved with Greek life. One may explain this phenomenon by the younger age of campus residents and possible lack of maturity and unsophisticated decision making with regard to personal safety as well as inexperience with healthy intimate relationships. Although social affiliation with Greek life is not associated with more alcohol or substance use than other groupings, judgment is often impaired as a result of substance use.

Campus stakeholders are addressing the mesosystem impacting sexual assault. A student-led organization, Prevention and Awareness in the Community, has been chartered to spread awareness of sexual assault, dating violence, and domestic violence and to inform the campus community of available resources. This organization acts as a mediator to connect the campus with local agencies. Representative faculty and students from the College of Health Professions have been instrumental in improving the university policy on reporting sexual assault and have increased campus awareness of dating violence while promoting and educating students on characteristics of healthy relationships. In addition, the university recently hired a Title IX Coordinator.

In addition to improving the university's capacity for substance use prevention programming and enlightening students on the accompanying risks and consequences of substance misuse, we recognize bystander programming and training as an important intervention to prevent unwanted physical and sexual contact. Bystander training and intervention have been successful in the prevention of sexual assault on college campuses as well as addressing a variety of sensitive and problematic areas including alcohol overuse, hazing, eating disorders, and discrimination. It is a multifaceted approach that gives students the tools to examine their own and peer behaviors. The programming includes skill development for interrupting situations, speaking up and out against unhealthy social norms, and enhancing one's sense of confidence (Banyard, Moynihan, & Plante, 2007). Empowered and confident students are crucial to creating a caring community, which resonates with the mission of this university and with the ecological model.

The second important finding concerns the risk factor of residence (living off campus) being associated with DWIs. It is likely that the magnitude and significance of DWI are greater than these data indicated, as the campus residents were overrepresented in our sample. Environmental factors and a harm reduction perspective inform our approach to this issue. This campus is bordered by a high-crime neighborhood, which is not conducive for student pedestrian traffic. The safe places for students to socialize (with or without alcohol) require one to drive to the locale; there is little reliable public transportation. Harm reduction efforts must include facilitating safe transit, whether by campus shuttle or taxi services. The other consideration regarding off-campus night life is that entering a

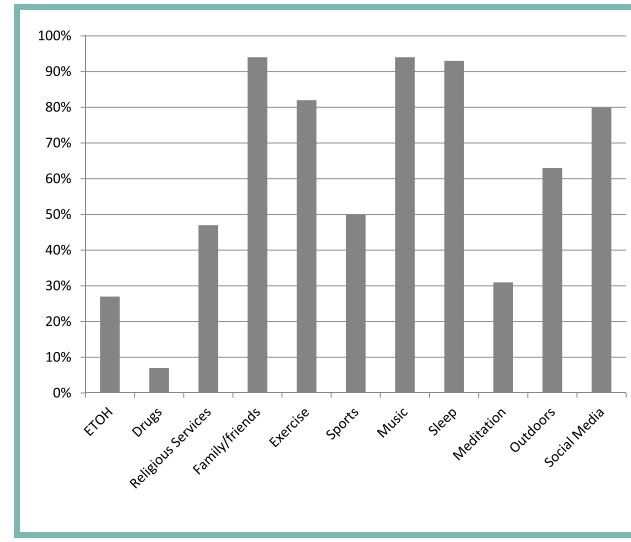

Figure 3. Coping strategies.

club requires that a student present identification to validate their age and thus will present one safeguard for underage drinking.

The third major finding concerns the perception of the campus environment. Most respondents did not know where to go for help. Although 73% of the students who responded feel cared for at the university, almost half of the students do not feel valued, which warrants further exploration because this university emphasizes care of the whole person. The discrepancy between feeling cared for and valued should be examined within the context of the larger student body. An opportunity for improvement is presented for faculty and staff, being that faculty advisors are often first responders. A stakeholder group charged with retention and student success is working on improving the advising experience. Most students and faculty reported satisfaction and value with the faculty model of advising, as it distinguishes the intimate experience of a small university. The findings of the 2014 Undergraduate Retention Committee Advising Survey further indicated that advisors can improve at addressing nonacademic critical needs of students, and there is inadequate integration with university support services and resources.

As a result of this study, there is a better understanding of the importance of engaging faculty and advisors to express genuine concern with their students. However, many faculty could be reluctant to talk to their students about topics outside the academic realm because of the uncomfortable or sensitive nature of the psychosocial issues being discussed. Providing workshops for faculty and staff to understand how student life outside (mesosystem) the classroom can greatly impact academic performance will be crucial to addressing this issue. It is imperative for faculty to feel at ease with initiating difficult conversations. One way to address the knowledge deficit and a lack of confidence is by providing faculty with scripts to utilize when they feel that they may need to intervene with a student and to equip faculty with knowledge about campus resources.

According to this sample, heavy episodic drinking is engaged in at greater levels among the B students. Good grades are not a protective factor. With respect to the large number of nursing students, a higher grade point standard for successful academic progress is imposed by nursing; that is, students must maintain a B average. Academic acumen may provide a measure of insurance for a period and is a point of concern for how to advise students and enact procedures to address problematic behavior.

Limitations

Limitations to this study include the sample size ($N = 297$) and response rate (14%). Nonetheless, the overall response rate for all recent surveys at this institution was approximately 15%. Although not as robust as anticipated, the results were able to be compared with a larger national reference group of 143,191 students from 312 institutions. Survey fatigue at this particular university likely contributed to the low response rate. Increasing the use of social media and text message technology and providing more incentives may have improved the response rate. An important recommendation to university administration includes repeating the survey using a more effective method or timing of surveying students to capture a healthier response and minimize survey fatigue among students on campus. In addition, the authors would like to have interval level data (rather than the categorical data provided by the CORE Institute) to improve statistical analysis.

One must also acknowledge the preponderance of female and nursing student respondents. Caution is exercised in generalizing our findings to the greater university population. Nonetheless, it should also be noted that the college of nursing comprises the largest academic major group at this university. Although the original focus of this study was the entire population of undergraduate students, the investigators have the opportunity to further examine the nursing subgroup so to provide further guidance to the school of nursing faculty advisors.

Conclusion

This study accomplished its aim to determine the prevalence of alcohol, illegal drug, and NMUPD in 18- to 23-year-old undergraduate students and to ascertain risk and protective factors. The results were used to build a sustainable plan for alcohol and substance use prevention programming on campus. Campus administrators have committed to improving the current treatment and referral activities. The campus alcohol and substance use policy will be assessed for effectiveness and revisions recommended. Improvements are anticipated to enhance faculty relationships with students, reinforce harm reduction activities, and decrease incidents of sexual assault or misconduct. In addition, the researchers presented the survey results at a campus-wide colleague development seminar, which resulted in an open dialog among faculty and staff. The deans of Students and Campus Ministry are planning to continue collaboration with the investigators to coordinate prevention and intervention programming.

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