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Alcohol and Substance Use Knowledge, Attitudes, Subjective Norms, Self-Efficacy, Perceived Behavioral Control, and Behavioral Intentions Among Omani College Students

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**ALCOHOL AND SUBSTANCE USE KNOWLEDGE, ATTITUDES, SUBJECTIVE
NORMS, SELF-EFFICACY, PERCIEVED BEHAVIORAL CONTROL, AND
BEHAVIORAL INTENTIONS AMONG OMANI COLLEGE STUDENTS**

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ABSTRACT

ALCOHOL AND SUBSTANCE USE KNOWLEDGE, ATTITUDES, SUBJECTIVE NORMS, SELF-EFFICACY, PERCEIVED BEHAVIORAL CONTROL, AND BEHAVIORAL INTENTIONS AMONG OMANI COLLEGE STUDENTS

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Old Dominion University, 2017
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Alcohol and/or substance use among college students is a serious public health issue. In Oman, studies addressing college student's alcohol and/or substance use are limited. The purpose of this study was to identify knowledge, attitudes, subjective norms, self-efficacy, and perceived behavioral control associated with alcohol and/or substance usage patterns among Omani college students (OCSs); identify behavioral intentions for alcohol and/or substance use among OCSs; and facilitate the development of culturally relevant evidenced-based interventions for Omani young people by communicating study findings to policymakers and healthcare program leaders.

A cross-sectional design used an online survey completed by college students from Oman higher education institutes (HEIs) in academic year 2016-2017.

One hundred and eighty-two males (45.2%) and 224 females (54.8%) reported 30-day prevalence rates of 3.2% and lifetime prevalence rates of 15.9% for alcohol and/or substance use. Attitudes, subjective norms, and self-efficacy significantly predicted OCSs' alcohol and/or substance use behavioral intentions ($p < 0.05$). Perceived behavioral control was not a significant predictor. Socio-demographic factors (i.e., age, gender, father's educational level, family income, college type, region of permanent residence, and religiosity) were significantly associated with and predicted OCSs alcohol and/or substance use behavioral intentions ($p < 0.05$).

Findings supported attitudes, subjective norms, self-efficacy, and perceived behavioral

control as predictors for alcohol and/or substance use behavioral intentions among OCSs. Notably, alcohol and/or substance behavioral use intentions and behaviors of surveyed OCSs were influenced by their attitudes, subjective norms, and self-efficacy rather than by their knowledge of the health consequences. Secondly, OCSs reported a strong self-efficacy in their ability to avoid alcohol and/or substances; however, this did not translate to lower intentions.

Public health professionals, educators, and policymakers should focus on influencing intentions and on strengthening OCSs' confidence to abstain from alcohol and/or substances. This can be accomplished by incorporating avoidance or refusal training skills into HEIs' existing evidence-based interventions for alcohol and/or substance use for OCSs. Incorporating this same skill training may yield further evidence about which TPB constructs public health professionals should include in the development of national alcohol and/or substance use prevention programs.

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CHAPTER I

INTRODUCTION

Globally, many countries have attempted to curb alcohol and illegal substance use among young adults at colleges and universities. Nonetheless, the use of alcohol and/or substances remains a problem for this population (United Nations Office on Drugs and Crime [UNODC], 2015; The World Bank, 2017). Addiction to alcohol and other substances has been reported to increase the incidence of accidents, affect performance in school and promote delinquent behaviors especially among young adults (Trim, Clapp, Reed, Shillington, & Thombs, 2011). In addition, alcohol and substance use and its dependency have resulted in significant health, economic, and societal problems that continue to be a major public health issue. These include brain damage, cancers, cardiovascular diseases, HIV, hepatitis, and injuries (Mokdad et al., 2016; Shield, Parry & Rehm, 2013; Rehm, et al., 2010). According to the United Nations Office on Drugs and Crime's *World Drug Report 2015*, alcohol and substance use related mood disorders are among the psychosocial health effects that affect day-to-day productivity. Violence and other criminal behaviors are also associated with alcohol and substance use and abuse (Chermack et al., 2010; Chen & Wu, 2016).

After factoring in health- and crime-related costs and losses in productivity, an estimated 5.1% of the global burden of disease and injury can be attributed to alcohol and substance use, as measured in disability-adjusted life years (DALYs) (World Health Organization [WHO], 2014). In 2012, approximately 3.3 million deaths (or 5.9% of all global deaths) were attributable to alcohol and substances consumption, which is more than the deaths caused by HIV/AIDS, violence, and tuberculosis combined (WHO, 2014). Moreover, 25% of these deaths were among those aged 18 to 30 years (WHO, 2014). For the past two decades, UNODC reports have

indicated an increase in alcohol and/or substance consumption among college student populations aged 18 years and above (UNODC, 2015). In general, college students are also more likely to participate in hazardous and harmful drinking patterns, such as binge drinking, drinking to intoxication, and sexual assaults, which have their own set of behavioral and society impacts (Chermack, et al., 2010; Chen, et al., 2016; Silins, et al., 2014).

Compared to a relatively stable increase of alcohol and substance use in the Western regions, alcohol and substance use in Africa, Asia, and the Eastern Mediterranean Region (EMR) have jumped significantly with an increase by 25% from 2005 to 2010 (WikiIslam, 2011).

In Western countries, investigators have made considerable progress with examining alcohol and/or substance use among college students (Evans-Polce, Lanza, & Maggs, 2016; Griffin & Botvin, 2010). However, countries within the EMR are missing vital information about this topic among their college-aged population. Although there are some studies in very early stages, the results have yet to be published or acted upon. Without this information, EMR countries cannot make informed decisions about the types of interventions and policies that would be most effective for this younger population.

For context, the EMR is made up of 22 economically, culturally, and politically diverse countries across two continents: Afghanistan, Bahrain, Djibouti, Egypt, India, Iran, Iraq, Jordan, Kuwait, Libya, Morocco, Oman, Pakistan, Qatar, Somalia, Saudi Arabia, Sudan, South Sudan, Syria, Tunisia, United Arab Emirates, and Yemen (see orange shaded countries in Figure 1).



Figure 1. Eastern Mediterranean Region (EMR)

The setting for this study is the Sultanate of Oman (further noted as “Oman”), one of the EMR countries. Those countries in the Gulf Cooperative Council (GCC) are most similar to Oman in regard to culture, traditions, and economic status. The GCC countries include Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and United Arab Emirates.

In terms of the core substances used by Omanis, hashish (more commonly known around the world as cannabis) and opium have been used for medicinal purposes in GCC countries, even though both of these substances are illegal (Al Harthi & Al Adawi, 2002). While, consumption of alcohol and/or substances in GCC countries has traditionally been almost exclusively found in men, evidence shows that women have begun consuming alcohol and other substances in recent years (Price, 2013).

In general, there has been a dramatic increase in alcohol and/or substance use among college-age students in the GCC countries, and more specifically in Oman (WHO, 2014). The shift in alcohol and substance consumption acceptance is largely attributed to the economic development and sociocultural changes Oman has experienced in the last 30 years.

Background and Significance

Oman has a population of approximately 3.9 million people (The World Bank, 2014), and more than 2.5 million (nearly 66%) Omanis are between the ages of 15 and 64 years-old. Oman has allocated a substantial budget to support the educational and medical infrastructure. The number of students attending colleges and universities in Oman increased from 45,009 (48% of the population) in 2010 to 48,716 (52% of the population) students in 2013 (Ministry of Higher Education [MHE], 2015). Roughly 85% of Omani young adults are enrolled in public and private higher education institutions (HEIs). These institutions typically comprise of two- and four-year colleges and universities in Oman or abroad (Oman Ministry of Higher Education, 2015). Globally, college students within this age range are considered at high risk for alcohol and/or substance use behavioral issues (UNODC, 2015).

However, few research studies available that tracked student's alcohol and/or substance usage and the related impacts from the economic, socio-culture and religious changes (Al-Balushi, 2004; Al-Barwani & Albeely, 2007). Oman typically modeled intervention and treatment methods from other developed countries instead of cultural insight from Omani college students (OCSs); this has resulted in a largely inefficient model to service OCSs with alcohol or substance use issues.

Religious, Economic, and Socio-cultural Context

Each country in the GCC has their own culture and characteristics; however, one of the core similarities is the population's devout faith in Islam. Islam carries a considerable amount of weight in terms of governance and society norms for Arabic countries like Oman. As such,

matters relating to divorce, economics, inheritance, marriage, personal conduct, and politics are affected by Sharia law. Sharia law is largely based on the teachings of the Qur'an, and according to this law the consumption, possession, or sale of alcohol and/or illegal substances by Muslims is prohibited and illegal (Hefner, 2011). Due to deeply held beliefs in the Islamic faith, alcohol and/or substance use is a taboo topic in the GCC, including Oman; as such, data related to their use is limited and likely underreported (Al-Sharbati, Al-Sharbati & Gupta, 2014; WikiIslam, 2011). While faith and society customs generally shun alcohol and substance use, there is indication that younger Omanis are using and experimenting at a faster rate than generations before (Royal Oman Police [ROP], 2016).

Unprecedented rapid economic growth may also be a cause of the increase of alcohol and/or substance use within GCC countries (Al-Harhi et al., 2002; AlMarri et al., 2009; Gaferi, Osman, Matheson, Wanigaratne & Bond, 2013). Oman is one of the oil-producing countries in the GCC and has experienced a rapid economic transition over the past three decades (AlMarri et al., 2009). In conjunction with focusing on oil exports, Oman has worked to diversify its economy by developing and boosting tourism, which in turn, sped up the rate of globalization and modernization for the country ("Oman: An economy in transition," 2007). Boosting tourism has increased the availability of alcohol and/or substances in Oman ("Oman's education budget clocks \$3.38 billion in 2013," 2014). Before the economic developments, alcoholic beverages were not sold in Oman; however, with the increase in tourism, this practice became legal and more common ("Oman: An economy in transition," 2007). Alcohol can be purchased by both natives and non-Muslims ages 21 years and older in designated liquor shops licensed by authorities ("Oman's education budget clocks \$3.38 billion in 2013," 2014). Presently, alcohol is readily available within the majority of bars, nightclubs, and restaurants that are attached to

hotels. As the Omani society evolves and continues to relax its stance on alcoholic beverages, it is unclear how this will impact how often younger generations will use alcohol and/or substances (“Oman’s education budget clocks \$3.38 billion in 2013,” 2014).

Sociocultural factors also have affected alcohol and/or substance use in the GCC. As noted above, the use of hashish as a stimulant is common in the GCC countries and has been used since ancient times (Al Harthi et al., 2002). There is a wide cultural acceptance of using a shisha (water pipe) for tobacco smoking (Maziak, 2011), and the practice has recently spread within Arab societies to include Arab women (Maziak, 2011). Additionally, Dokha smoking is also spreading among young adults (Al-Houqani & Hajat, 2012), which is a concentrated form of dried nicotine smoked in a small pipe called a Midwarkh (Al-Houqani et al., 2012). Khat (also known as qat), a green dried leaf which acts as a stimulant, is another traditional substance used in the GCC since as early as the 13th century (Hamarneh, 1972). Ninety percent of adult males in Yemen chew khat three to four hours a day (El-Menyar, Mekkodathil, Al-Thani & Al-Motarreb, 2015). Recently, females have also been engaging in the chewing and shisha habits (El-Menyar et al., 2015). Chewing khat in Yemen is not considered illegal, and many Omani young adults are increasingly chewing khat (ROP, 2016).

Legal Context

Another factor to consider when analyzing the increased consumption of alcohol and substance use is the geographical location of Oman, which sits on the Arabian Sea and the Gulf of Oman (see Figure 2), not far from the world’s largest heroin trafficking channels (Al Harthi et al., 2002).



Figure 2. Oman in Relation to Sea Channels

In 2008, Oman witnessed a large increase in the quantity of police seizures related to substance use, specifically for hashish and Captagon (“Oman Drug Addiction,” 2015; ROP, 2016). Captagon is a rarely seen amphetamine in the West and used to be available under the same name via prescription to treat breathing problems. When the medical use of Captagon ceased, it became the street name for a chemical formulation that usually contains between 1% and 7% amphetamine (Oman Drug Addiction, 2015). Captagon trafficking is common throughout GCC countries. Thus, cases of alcohol and/or substance smuggling and selling drugs in Oman has increased since 2008, along with the number of arrests (ROP, 2016).

In an attempt to thwart drug trafficking and availability, the authorities within Oman and other GCC countries have implemented strict drug trafficking laws, up to and including the death penalty (Almageni, 2013). In 2015, Colonel Abdulrahim bin Qassem Al Farisi, General Director of Drugs Prevention, issued a public statement about current laws in place to fight substance use in Oman. Al-Farisi stated that execution (death) is the highest punishment for attempts to smuggle any narcotics or psychotropic drugs. However, thus far no Omani or non-Omani has

been sentenced to death for smuggling illegal substances in Oman. This policy extends Oman's long-standing zero tolerance stance towards substance use, which mandates that any individual caught using substances could face a minimum sentence of three years in prison and fine of OMR 3,000 (US \$7,792.21) as defined in the narcotic and psychotropic drugs law (Royal Decree. Article 43/2015) (AlMukrashi, 2015). Despite the harsh consequences in place for both dealers and users, Royal Oman Police (ROP) records confirm a continued increase in consumption of alcohol and/or substances (2016). In addition to drug trafficking laws, GCC countries, including Oman, have implemented intervention programs and policies aimed at decreasing alcohol and/or substance use. These interventions have generally been ineffective as drug trafficking and use continues to increase (Al Harthi et al., 2002; "Oman Drug Addiction," 2015).

Oman Higher Education Institutes (HEIs)

Education is highly valued in Oman. As stated earlier, significant numbers of Omani attend colleges and universities (Sultanate of Oman Ministry of Higher Education [MHE], 2015). Since 1986, Oman expanded from one higher education institute (Sultan Qaboos University [SQU]) with 500 students to more than 60 higher education institutions serving thousands of students in 2016 (MHE, 2016). The Oman Ministry of Higher Education (MHE) oversees most of the public and private HEIs, which are distributed in all regions of the Sultanate. It is estimated that the number of OCSs enrolled in HEIs in the academic year 2011-2012 was around 90,000, of which 28% of them are between 18 and 24 years of age (International Consultants for Education and Fairs [ICEF], 2014). The MHE aims to boost the participation rate among OCSs to at least 50% by 2020.

While attending higher education can present opportunities for professional development and economic advancement, the college years “constitute a stressful time of change for students” in which emerging adults are expected to successfully navigate through the challenges posed” (Shek & Wong, 2011). College students face “increased competition due to rising admissions standards, tuition costs, in addition to the academic and psychosocial stressors at college” (Shek & Wong, 2011). Major developmental transformations mark this time when college students aged 18 to 30 years evolve from adolescence into adulthood (Kong & Bergman, 2010). Emerging adulthood presents different degrees of difficulty for individuals and may be challenging for those who lack the necessary knowledge, skills and support to navigate this transition (Anderson, Ramo, Cummins, & Brown, 2010). Accordingly, emerging adulthood has been characterized as a phase associated with increased prevalence of problem behaviors like impaired driving and the misuse of alcohol and drugs (Sweileh, Zyoud, Al-Jabi, & Sawalha, 2014).

In addition, this period of time represents “a developmentally challenging transition to adulthood, and untreated mental illness may have significant implications for academic success, productivity and social relationships” (Hunt & Eisenberg, 2010, p. 3). College admission and campus living provide a greater freedom and less social control than experienced during adolescence and increases the opportunity for involvement in behaviors such as heavy drinking, risky driving, and substance use (Al-Houqani et al., 2012; Arria et al., 2010).

Notably, while alcohol is the most frequently used substance by college students, marijuana use is increasing on college campuses in the United States (National Institute on Drug Abuse [NIDA], 2015). In fact, researchers have frequently hypothesized that marijuana use among college students increases both the risk for alcohol use disorders (Simons, Gaher, Correia,

Hansen & Christopher, 2005) and experimentation with other, stronger substances, such as heroin or cocaine (Kandel, 2003; Evans-Polce et al., 2016). Likewise, in other GCC countries, evidence has suggested that alcohol and/or substance use among college-age students is a growing concern with public health authorities (Eastern Mediterranean Region, 2012; Sweileh et al., 2014).

Studies from around the globe, including other GCC countries, have revealed many factors which correlate with an increased risk for alcohol and/or substance use among college students (Alhyas et al., 2015; Monahan, Rhew, Hawkins, & Brown, 2014; Sudhinaraset, Wigglesworth, & Takeuchi, 2016; Van Ryzin, Fosco & Dishion, 2012), including campus living, experimental curiosity, economic status, family and peer influence, lack of parental supervision, and personality problems. While these factors are associated with an increased risk of alcohol and substance use, predictors that were found to prevent alcohol and/or substance use included family ties such as effective family socialization, functional family communication, and the family's ability to notice early warning signs for substance use (Dennhardt & Murphy, 2013; Ewing et al., 2015; Frisher, Crome, Macleod, Bloor & Hickman, 2007; Griffin & Botvin, 2010).

Since there are deep ties to religion in Oman, it is no surprise that religiosity has also been considered as an important protective factor against alcohol and/or substance use among college students (Burke, Van Olphen, Eliason, Howell & Gonzalez, 2014; Elarabi, Al Hamedi, Salas & Wanigaratne, 2013). When students are faithful to their religion, it is believed to prevent them from using alcohol and/or substances even if they live in perilous environments (Burke et al., 2014; Elarabi et al., 2013). Traditionally, Omani society is conservative toward substance use. In Oman, intoxicating substances, including drugs and alcohol, are prohibited. From a religious viewpoint, substance users in Oman are associated with lack of moral behavior, lack of

self-control, and believed to be falling away from Allah (God) (UNODC, 2010). In Oman, people who use substances face a social stigma and feelings of shame, these social norms that are closely tied with religious beliefs are thought to be the cause for users to not seek help (Al-Adawi et al., 2002; UNODC, 2010).

Little is known about the influence of economic and sociocultural changes and religion on OCSs' alcohol and/or substance use. Therefore, using behavioral theory to examine alcohol and/or substance use among Omani College Students (OCSs) is essential to uncover key insight for Oman public health to use in implementing program and policies targeting OCSs.

Alcohol and/or Substance Use Mental Health Implications for College Students

Mental health disorders are increasing among the college population around the globe. In 2013, the American College Health Association conducted the National College Health Assessment (ACHA-NACH) and found that 57% of female college students and 40% of male college students reported experiencing episodes of “overwhelming anxiety” in the past year, and 33% of female students and 27% of male students reported of feeling depressed in the past year. Studies revealed that between a quarter and a third of students meet criteria for an anxiety or depressive illness during their college experience (Blanco et al., 2008; Hunt & Eisenberg, 2010). Suicide is one of the most tragic outcomes associated with depression and mental health concerns in general. According to the ACHA, the suicide rate among those aged 15 to 24 years has tripled since the 1950s. Suicide is now the second most common cause of death among college students. The ACHA study also found that 9.4% of students reportedly were seriously considering or had attempted suicide at least once in the past 12 months, a marked increase from

several decades ago (ACHA, 2009). Jaju, Al-Adwai, Al-Kharusi, Morsi, and Al-Riyami (2009) found that 13.9% of Omani high school students had at least one DSM IV diagnostic label; 3.0% major depressive disorder, 1% bipolar mood disorder, 5.8% specific phobia, and 1.6% social phobia.

The evidence shows that use and/or abuse of alcohol and substances negatively impacts the mental health of college students. In fact, alcohol and/or substance use among college students has been associated with mental health disorders such as anxiety, depression, mood disorders, social phobia and suicide (Hunt & Eisenberg, 2010; Jaju et al., 2009; Blanco et al., 2008; Zaidan et al., 2002). As a result of their secondary analysis of the ACHA data, Blanco and colleagues (2008) concluded that psychiatric disorders, particularly alcohol use disorders, are common in the college-aged population.

Statement of the Problem

The lack of data on the college student of Omanis could have a severe impact on Omani's overall health costs. There is evidence that alcohol and/or substance use associated with subsequent negative health may be increasing to the people of Oman (Zaidan, Dorvlo, Viernes, Al-Suleimani, Al-Adawi, 2007; Al-Sinawi & Al-Adawi, 2006). Currently, mental health disorders (including alcohol and/or substance use disorders) are estimated to contribute to 16.8% of the country's total health burden. A 2008 study conducted by Moh'd Al-Mulla and associates highlighted some disturbing trends; they found that 4.6% of Omani high-school students between the ages of 13 and 15 years old have experimented with substances and 4.3% have overindulged with alcohol. These numbers indicate that high school aged students have higher rates of tobacco use than current Omani adults (Moh'd Al-Mulla et al., 2008).

In addition, drug abuse cases in Oman have doubled in recent years. During 2012, ROP officials arrested 2,100 people for drug trafficking compared with 1,417 in 2010 (ROP, 2015). Between 2004 and 2014, 625 new cases were registered in the National Registry of Addiction, bringing the total number of registered cases in Oman to 4,955 (NCNDPS, 2014). Sixty-three percent of the 4,955 cases (3,136 cases) are reported using alcohol. Moreover, 19 people died due to drug abuse in 2009 and the number of crimes related to drug use is increased dramatically in few years from 78 to 688 (Luther, n.d.).

Studies show that alcohol and/or substance use in Oman is no longer limited to the Omani male population, making this a universal issue. Consumption for both alcohol and substances among Omani females are rising with a reported 35 cases among females reported in 2011 compared with 25 cases in 2010 (“Oman Drug Addiction,” 2015). Harmful behavioral practices associated with substance use have also been on the rise. Those who start drinking alcohol and using substances at younger age are more likely to become a user later in life (Substance Abuse and Mental Health Services Association [SAMHSA], 2014). Hence, there are concerns that the average age of Omanis using alcohol and/or other substances has been getting lower over the years, and with no current studies on its impact on the younger generation, the Omani government is not prepared for the economic and social impact this rise in consumption will have on productivity and morality (“Oman Drug Addiction,” 2015).

Since alcohol and/or substance use is a taboo topic within GCC region including Oman, alcohol and/or substance use behaviors are concealed and rarely discussed. It is imperative to understand alcohol and/or substance use knowledge, attitudes, subjective norms, self-efficacy, perceived behavioral control, and behavioral intentions of Omani college students. This understanding is required in order to develop culturally sensitive interventions for addressing

alcohol and/or substance use among OCSs. For reference, college students drug prevention programs within the United States have become more effective due to a shift from being merely informative to focusing on social skills and changing subjective norms among college students, the community, and their families (Dennhardt & Murphy, 2013; Griffin & Botvin, 2010; Tebb et al., 2016; Tucker, Cheong & Chandler, 2016). Substance use interventions using anti-drug media messages are more proven to be more effective in the US when presented in combination with peer support and community-based or classroom educational programs (Griffin & Botvin, 2010). In addition, US college students who received a combination of curriculum and anti-drug media interventions were significantly less likely to engage in drug use (Dennhardt & Murphy, 2013; Dick & Hancock, 2015; Griffin & Botvin, 2010).

In the other GCC countries and Oman, considerable efforts have been directed towards implementing prevention strategies for student population (Griffin & Botvin, 2010; Weiss, Sawa, Abdeen & Yanai, 1999). Unfortunately for OCSs, mental health intervention programs in Oman are generally modeled after programs from other developed countries without primary research done for Omani citizens (Al-Adawi, 2017; Sweileh et al., 2014). These intervention programs not based on knowledge of the OCSs' alcohol and/or substance use patterns nor are they developed based in theory. The lack of insight into the Omani population for alcohol and substance use and the rise of both despite the legal and religion-based consequences should prove that current treatment plans are ineffective. In addition, little is known regarding the predictors of continued alcohol and/or substance use among college students or the effectiveness of the modeled interventions within the Omani culture.

An enhanced knowledge and understanding about alcohol and/or substance use among OCSs could facilitate the development of evidence-based, culturally relevant alcohol and/or

substance use interventions. For example, exploring OCSs' knowledge, personal opinion, peer and family influence, and religiosity associations with their alcohol and/or substance use behavioral intentions may uniquely inform prevention and treatment programs. While there is new Omani public policy related to distributing, smuggling, and use of illegal substances (Al-Balushi, 2004), nothing is known about OCSs' knowledge about these policies and how their being informed may curb further consumption.

Purpose of the Study

The large numbers of OCSs enrolling in higher education institutes in Oman, coupled with immense economic and sociocultural changes constitute an urgent case for research examining the current prevalence rate among OCSs and their alcohol and/or substance use behavior. Therefore, the study objectives are to use theoretically guided research to investigate alcohol and/or substance use knowledge, attitudes, subjective norms, self-efficacy, perceived behavioral control, and behavioral intentions among the OCSs.

The purpose of this study was to: a) identify knowledge, attitudes, subjective norms, self-efficacy, and perceived behavioral control associated with alcohol and/or substance usage pattern among OCSs; b) identify behavioral intentions for alcohol and/or substance use among OCSs; and c) facilitate the development of culturally relevant evidenced-based interventions for Omani young people by communicating study findings to policymakers and healthcare program leaders.

The study aims were to: a) obtain preliminary data on alcohol and substance use behaviors among OCSs and b) examine the role of knowledge in mediating alcohol and/or substance use behavioral intentions among OCSs. The dependent variable was alcohol and/or substance use behavioral intentions among OCSs. The independent variables were the socio-

demographic characteristics a) age, b) gender, c) father's educational level, d) mother's educational level, e) family income, f) student grades, g) college type, h) live on or off campus, i) region of permanent residence, j) religiosity, k) sharing thoughts/feelings/plans with parents) and the theory of planned behavior (TPB) constructs a) attitudes, b) subjective norms, c) self-efficacy, and d) perceived behavioral control).

Overview of the Theoretical Framework

To intervene effectively for purposes of preventing and facilitating changes in behavior, one must first identify the targeted behavior, explore patterns of that behavior, and understand the context for the behavior (Ajzen, 2002). Behavioral theories can provide help to the context for behaviors such as knowledge, attitudes, subjective norms, self-efficacy, perceived behavioral control, and behavioral intentions. Additionally, theoretical frameworks can provide guidance about which prevention and intervention messages and strategies may be most effective (Steinmetz, Knappstein, Ajzen, Schmidt & Kabst, 2016; Sudhinaraset et al., 2016).

TPB incorporates cognitive constructs that explain decisions and motives driving health related behaviors (i.e., attitudes, subjective norms, self-efficacy, perceived behavioral control, and behavioral intentions (Hagger, Chan, Protogerou & Chatzisarantis, 2016; Mark, Donaldson & Campbell, 2011). According to the TPB, (Ajzen, 2012), an individual's intentions are the best predictor of subsequent behavior. Behavioral intentions are determined by individual's attitudes (favorable/unfavorable evaluations of behavior in question), subjective norms (beliefs about whether significant others approve/disapprove of the behavior), and the perceptions of ease or difficulty of performing the behavior known as perceived behavioral control. Self-efficacy refers to the ability to successfully execute the behavior required to produce the outcome (Ajzen, 2002;

Bandura, 1977). Attitudes, subjective norms, self-efficacy, and perceived behavioral control are based on underlying prominent beliefs that is, beliefs readily accessible from memory.

Specifically, attitudes are determined by one's behavioral beliefs that acting in a certain way will have certain consequences, weighted by an evaluation of those consequences.

There are two types of subjective norms: injunctive norms and descriptive norms.

Injunctive norms refer to the social pressure to engage in behavior based on the perceptions of what other people want you to do, whereas descriptive norm refers to the social pressure based on the observed or inferred behavior of others (Collins & Spelman, 2013; Collins, Witkiewitz, & Larimer, 2011). Subjective norms were originally conceptualized as injunctive norms (Ajzen, 1991). Recently, Ajzen and Fishbein (2005) recommended including both types of normative measures when constructing planned behavior surveys.

Self-efficacy is linked to control beliefs, which refers to beliefs about the presence of factors that may facilitate or impede performance of the behavior. Mainly self-efficacy is a measure of confidence about the probability, feasibility, or likelihood of executing a given behavior (Ajzen, 2002; Bandura, 1977). Perceived behavioral control is thought to exert both direct and interactive effects on behavior. This is based on the rationale that however strongly held, the implementation of an intention into action is at least partially determined by personal and environmental barriers (Ajzen, 2012). Therefore, in situations where prediction of behavior from intentions are likely to be hindered by the level of actual (volitional) control, perceived behavioral control should facilitate the implementation of behavioral intentions into action, and predict behavior directly (Rhodes & Clinkinbeard, 2013; Ross & Jackson, 2013).

Attitudes towards alcohol and/or substance use may be affected by one's health consequences knowledge (White et al., 2005). Knowledge about alcohol and/or substance use, such as the health effects and legal consequences, has been associated with negative attitudes towards alcohol and substance use (White et al., 2005). Increasing the individual's knowledge of alcohol and/or substance use consequences has also been associated with lower levels of substance use among those from several cultural backgrounds (Ramirez et al., 2004). Skills such as resisting peer pressure and changing substance use along with changes in self-efficacy and perceived behavioral control have been correlated with increased knowledge (Stefanidi & Tsitsas, 2015). Although, knowledge alone may only have a slight effect on behavior change, it is a crucial aspect of alcohol and/or substance use prevention programs and intervention programs.

Behavioral intentions are the proposed result of a) attitudes, b) subjective norms, c) self-efficacy, and d) perceived behavioral control (i.e., the higher behavioral intentions regarding a specific behavior, the higher the likelihood of performing the behavior) (Ajzen, 2012). Behavioral intentions illustrate the motivation behind performing the behavior. They are the best single determinant of behavior (Fishbein & Cappella, 2006). Behavioral intentions can be accurately predicted from attitudes towards the specific behavior, subjective norms surrounding the specific behavior, self-efficacy, and perceived behavioral control concerning the specific behavior (Ajzen, 2012). Hence, attitudes, subjective norms, self-efficacy, perceived behavioral control, and behavioral intentions are cognitive constructs, that may explain the decisions and motives driving the behavior. Therefore, TPB provides a useful framework for developing interventions for behavioral change (Fishbein & Cappella, 2006) and educational programs that aim at preventing or changing particular behaviors.

Previous studies have described the strong association between attitudes, subjective norms, self-efficacy and perceived behavioral control regarding alcohol and substance use intentions, and behaviors among college students (Rhodes et al., 2013; Ross et al., 2013). In the context of intervening to prevent alcohol and/or substance use among OCSs, it is important to first identify their attitudes, subjective norms, self-efficacy, perceived behavioral control, and the behavioral intentions related to alcohol and/or substance use intentions. Using theoretical guided research to understand why some students engages in a behavior, whereas others do not, can be done once attitudes, subjective norms, self-efficacy, perceived behavioral control and the behavioral intentions have been identified.

Below are definitions of key terms used in this study to operationalize the variables used in this research:

- Alcohol Use: Any amount of alcohol consumption (Wechsler et al., 2002).
- Attitude: The degree to which performance of the behavior is positively or negatively valued. When combined, attitude toward the behavior, subjective norm, and perception of behavioral control lead to the formation of a behavioral intention (Ajzen, 1991).
- Behavior: What a person does or what their actions are. (Ajzen, 1991).
- Behavioral Intention: A person's perceived likelihood or "subjective probability that he or she will engage in a given behavior" (Fishbein, & Cappella, 2006).
- Descriptive Norms: The perception of other individuals' alcohol and substance use behavior. This includes a perception, or estimation, of the proportion of individual who use alcohol and drugs (e.g., the percent of college students that use hashish).
- Injunctive Norms: The perception of other individuals' approval of alcohol and substance use. This includes a perception, or estimation, of the proportion of individuals who

approve or alcohol or substance use (e.g., the percentage of college students that approve of hashish use).

- Khat: A herbal plant (*Catha edulis*) that contains two alkaloids, cathinone and cathine, and acts as stimulants.
- Omani Collage Students (OCSs): An undergraduate or graduate student enrolled in a government or private higher education institute (HEIs) under the umbrella of the Ministry of Higher Education (MHE) in Oman (MHE, 2015).
- Perception: An estimation of other individuals' behaviors and/or approval of those behaviors.
- Perceived Behavioral Control: A person's self-efficacy and their perceived control (difficult or easy) to perform a behavior. (Ajzen, 1991).
- Self -efficacy: The perceived ability to overcome various events or conditions that may act as a barrier to perform a behavior (Bandura, 1997).
- Substance Use: Consumption of any illegal drugs such as hashish, marijuana, heroin, and cocaine including khat (MENAHRRA. n.d.).
- Subjective Norm: The individual beliefs about whether important referent approve or disapprove of a behavior (Ajzen, 1991).
- Theory of Planned Behavior (TPB): A behavioral science theory used to predict individual's behavior. This theory incorporates four primary constructs: attitude towards a behavior, subjective norm and perceived behavioral control, which will predict behavioral intention, which in turn, predict behavior (Ajzen, 1991).

Research Questions

- RQ 1. What was the prevalence rate, in the past 30 days, for alcohol and/or substance use among OCSs?
- RQ 2. What was the lifetime prevalence rate for alcohol and/or substance use among OCSs?
- RQ 3. Is there a relationship between OCSs' attitudes, subjective norms, self-efficacy, perceived behavioral control, and alcohol and/or substance use behavioral intentions?
- RQ 4. Are there any differences between socio-demographic characteristics of OCSs' in their attitudes, subjective norms, self-efficacy, perceived behavioral control and alcohol and/or substance use behavioral intentions?
- RQ 5. Is there an overall relationship between socio-demographic characteristic, attitudes, subjective norms, self-efficacy, perceived behavioral control, and alcohol and/or substance use behavioral intentions?
- RQ 6. Does OCSs' knowledge about alcohol and/or substance use mediate the effects of the TPB constructs on alcohol and/or substance use behavioral intentions?
- RQ 7. Do the behavioral use intentions of OCSs predict alcohol and/or substance use in the past 30 days?

CHAPTER II

LITERATURE REVIEW

Around the world, entrance to college symbolizes a time of significant change in the lives of these students, and many consider attending university a positive experience. However, the college experience has also been associated with depression, experimenting with alcohol and/or other substances, and stress (El Ansari, Sebena, & Labeeb, 2015). Internationally, alcohol and substance use disorders constitute a major public health challenge (SAMHSA, 2015). Recent studies have indicated that drinking, smoking, and substance use among college students is part of this public health concern, regardless of country, university, college year, or area of study (El Ansari et al., 2015; Obi, Adayonfo, Iwueze & Ekwe, 2017). Moreover, a breadth of evidence shows that young adults around the world who engage in alcohol and substance abuse have a higher risk of negative health outcomes such as brain damage, car accidents, cancers, cardiovascular disease, and HIV (Mokdad et al., 2016; Shield, Parry, & Rehm, 2013; Rehm, et al., 2010). In the United States, young adults aged 18 to 24 years in general, and college students in particular, have the highest rate of alcohol and substance abuse among people aged 12 years or older (National Institute on Alcohol Abuse and Alcoholism [NIAA], 2017; National Institute on Drug Abuse [NIDA], 2015).

Since little data exist for OCSs in particular, one must draw inferences using existing reports about college students from the around the globe and other GCC countries. A report published by the US NIDA (2015) found a steady increase in the probability of past-year marijuana use for those enrolled in college versus those not enrolled (51% in 2015, 41% in 2014, and 31% in 2013). A review of a comprehensive study for European universities indicated that

college students with hazardous level of alcohol consumptions were associated with an increase level of smoking and substance use (Wicki, Kuntsche, & Gmel, 2010).

Specific results for other developed countries include the following:

- In Ireland, the prevalence rate of hazardous alcohol consumption among college students was 66.4% (65.2% men and 67.3% women; N=2275), and college students with a hazardous consumption pattern were more likely to report smoking, illicit drug use, and sexual activity (Davoren, Shiely, Byrne & Perry, 2015).
- In India (N=256), the prevalence rate of substance uses in college students between 19 to 21 years-old was 52.7%; alcohol was the most commonly used substance (53.5%), followed by cigarette smoking (27.3%), tobacco chewing (8.2%), and cannabis use (6.8%) (Gupta et al., 2013). Gupta and his colleagues (2013) discovered that factors such as easy availability, male gender, paternal history of substance abuse, and psychological stress were the common factors for substance use among Indian college students.
- In Kenya (N=500) lifetime prevalence rate among male college students for alcohol use was 51.9%, cigarette use was 42.8%, cannabis use was 2%, and cocaine use was 0.6% (Atwoli, Munгла, Ndung-u, Kinoti, & Ogot, 2011). Substances introduced by friends (75.1%) and by extended family relatives (23.5%) to Kenyan college students were strongly associated as reason to use. In both the India and Kenya studies, socio-demographic characteristics—including age, occupation, parents' education, religiosity—were not significant to lifetime prevalence rate of any use.
- In Jordan (N= 354) the prevalence rate of sixth year medical students' tobacco use was 26.3% for cigarettes and 29.5% for shisha. However, no difference was found in regard to their sex and socioeconomic status (Abu-Helalah et al., 2015)

- In Saudi Arabia, a study was conducted on male college students from three different universities (N= 337) to determine any association among socio-demographic characteristics, academic performance, peers' smoking, and presence of a smoker within the family. Thirty percent of the current smoker's low grades, peer smoking and presence of other smokers within the family were the significant predictors (Almogbel et al., 2012).
- In Abu Dhabi, United Arab Emirates, a convenience sample of parents, adolescents, and high-risk populations were surveyed. An anonymous self-report survey was used to examine the interaction of socio-demographic factors associated with substance abuse. The results indicated that religiosity was the primary protective factor followed by nationality, gender, and level of education (Elarabi, Al Hamedi, Salas & Wanigaratne, 2013).

Religion and Societal Context

Religion and societal context are important to consider when developing prevention and intervention strategies. The culture of Oman is steeped in the religion of Islam. Islam like other conservative Catholic and Judaic religions prohibits the use of alcohol and substances (Michalak, Trocki & Bond, 2007).

In a 2014 article titled "Will alcohol be banned in Oman?" the Grand Mufti (Muslim legal expert) of Oman, Sheik Ahmed Al Khalili, and several Muslim scholars voted in favor of an alcohol ban in Oman. This vote created a cultural divide between traditionalists, who say the encroachment of modernity must have its limits, and the more liberal, who point out that the country's burgeoning tourist industry might be stalled by such a radical move. Religious and

cultural values have changed in recent years to adapt to a more modern view of society that used less religious teachings to dictate everyday behavior. Individuals' cultural identities were threatened since religion no longer played a large role (Hefner, 2011).

In addition to the conflict between religious prohibitions and societal transition, some substances have been used in other GCC countries and Oman for both traditional and medicinal reasons, such as hashish and khat (Al Harthi et al., 2002). In Yemen (a country that is similar to Oman in regard to society and cultural traditions), khat use has been documented since the thirteenth century (Hamarneh, 1972). Hashish is consumed by smoking, typically in a shisha (also known as a waterpipe, hookah, or narghile), which is very common in the GCC. Despite the health burden of such a practice, shisha smoking recently reemerged as trendy habit in young adults in GCC countries (Maziak et al., 2016). In addition to traditional shisha use, the incidence and prevalence of alcohol and other substance use has continued to trend upward in Oman (ROP, 2015).

The fact that shisha is produced in North Africa and in EMR countries that are not a part of the GCC may be one reason why it is smoked more often by people in the region. The world's largest suppliers of hashish are Morocco (25% of the world production), Afghanistan (15%), Lebanon and Pakistan (5%) (UNODC, 2015). Additionally, most Arabs do not consider shisha to be a dangerous substance, and Islamic teachings in regard to stimulant substances are not being followed. Smoking shisha has also seen a recent revival, particularly among women (Maziak, 2011). The WHO (2005) reported that using a shisha is the equivalent to smoking 100 cigarettes in one sitting.

Legal and Policy Context

Officially, alcohol consumption and non-medical use of drugs by Omani citizens is illegal in Oman. However, this does not mean it is not an issue. To better combat illegal narcotics, the ROP upgraded their counter-narcotics section from a Directorate to a General Directorate, which provides more resources to ROP counter-narcotics enforcement. Penalties for possessing, using, or trafficking illegal drugs are severe, and convicted offenders can expect long jail sentences and heavy fines. Colonel Abdulrahim bin Qassem Al Farisi, General Director of Drugs Prevention, issued a public statement about the current laws in place to fight substance use in Oman. Al-Farisi stated that execution is the highest punishment for attempts to smuggle any narcotic or psychotropic substances, whereas substance users face a maximum of three years in prison and fine of OMR 3,000 (US \$7,792.21) as defined in article 43 (AlMukrashi, 2015). Arrests for trafficking have risen from 1,417 in 2010 to 2,100 people in 2012 (ROP, 2015). A large quantity of hashish, heroin, khat, morphine, opium, and pills have been seized in these raids. In 2014 there was an increase of 2% in illicit drug users under the age of 25 years (“Oman Drug Addiction”, 2015).

With the exception of Saudi Arabia and Kuwait, legal outlets for alcoholic beverage consumption exist in most GCC countries. In Oman, alcohol can be purchased at airports, in hotels and bars, and at licensed liquor shops around the country. The person purchasing alcohol in Oman must be over the age of 21 years (“Oman’s education budget clocks \$3.38 billion in 2013,” 2014). In addition, non-Muslim residences in Oman can apply for a liquor license and are allowed to keep alcohol in their homes. Notably, Zaidan et al. (2007) conducted a study measuring the severity of alcohol drinking among 59 Omani young adults attending a psychiatric clinic in Oman. The study reported that 89% of the patients suffered from alcohol intoxication,

and the result showed a strong direct relationship between availability/accessibility and subsequent alcohol misuse. Thus, the multiple easy outlets for legal alcohol purchase and consumption might be leading to the overuse of alcohol by Omanis young adults.

Al-Balushi (2004) interviewed two groups of drug offenders and non-drug offenders in regard to their knowledge about the policies and the death penalty for drug involvement in Oman. He also reviewed documentary data from police files and found that the introduction of the death penalty in Oman did not deter drug offenders from involvement in drug-related offences in general and drug trafficking offenses in particular. To date, there is no known study that addressed alcohol and/or substance beliefs and behaviors among OCSs. Additionally, very little is known about OCSs knowledge of alcohol and illegal substance use policies.

Prevalence and Impact of Alcohol and Substance Use

The economic, societal, and health burdens of alcohol and substance use is quite apparent, taking into consideration that the Omani government spends approximately OMR 45 million (US \$116,868,036) each year to treat alcohol-related disease. In 2010, 13,000 patients with alcohol problems registered at Oman hospitals (Padiyarath, 2014). Government officials from Majilis Al Shura (Consultative Assembly) affirmed that since 2007 there has been a steady 4% rise in the number of Omani patients being treated in government hospitals for alcohol-related disease mainly liver cirrhosis (Padiyarath, 2014).

Interviews with officials from the ROP revealed that alcohol-related problems were mainly due to drinking while driving, which resulted in 167 road accidents, leaving 15 dead and many injured (Padiyarath, 2014). ROP report findings were consistent with the results from

Zaidan et al. (2007) and Al-Balushi (2004) that indicated the presence of alcohol and substances use problems among Omani population. In addition, according to Dr. Mahmood Al Abri, the head of Al-Masarrah Hospital's addiction department and director of the National Executive Committee for Narcotic and Psychotropic Affairs, "substance abuse is getting worse in Oman and patients with chronic addiction are relapsing and readmission cases are in rise" (Al-Tauqi, 2013).

Dr. Gerald D'Costa, a psychiatrist at Badr al Samaa Hospital in Oman, said that he sees 10 to 15 patients with substance abuse issues daily (Al-Tauqi, 2013). He expressed high concerns about soft substance users (typically those using substances like hashish), since according to him, many Omani patients think that hashish is harmless compared to other hard substances. (For comparison, heroine, morphine, and opiates are considered hard substances in Oman.)

While not a lot of research has been conducted among the people of Oman, the few studies that do exist about Omani users focused mainly on tobacco smoking behaviors. For instance, Al Riyami & Afifi, (2004) examined the prevalence and the characteristics of current and former smokers among Omani adults. The sample was recruited from various health clinics in Oman. The investigators found that the prevalence of current smoking was 7.0% (males 13.4%, females 0.5%) and 2.3% were former smokers. The overall highest prevalence of current smoking (11.1%) was observed in those aged 40 to 49 years (18.7% of males, 0.9% of females). Older age (> 40 years), higher educational level, and larger family size were protective against smoking. They also found that the average age for first picking up the smoking habit was 18.7 years for males and 24.3 years for females.

Similar to the Al Riyami study, Al-Lawati, Muula, Hilmi, and Rudatsikira (2003) conducted a study of 1,962 high school students of whom 1,005 (51.2%) were males. Eighty-

eight percent were between 13 and 16 years of age. Five hundred and twenty-two (26.6%) reported ever smoking tobacco, while 189 (9.6%) were current users. Among males, 155 (15.5%) were current users compared with 24 (2.6%) females. Al-Lawati et al. also found that participants were more likely to smoke if they had a parent or friend who also smoked cigarettes.

Economic and Culture Context

Oman experienced an economic boom in the early 1970s. As such, the rise in oil prices increased the income and the standard of living for all social classes in Oman. Modernization was accomplished in a few short years and people had to adapt very quickly to new realities (Oman Chamber of Commerce & Industry, 2015). Living conditions changed from an indigenous tribal organization around village settlements to cosmopolitan cities with a variety of accommodations and cultures (The Heritage Foundation, 2017). For example, Western-style nightlife appeared in Oman, such as bars, nightclubs, dance clubs, and social clubs. Due to the increased income of Omani citizens, more people began to take holidays away from Oman, traveling to cities in India, Egypt, Morocco, Thailand, the Philippines, Europe and the United States. This exposed Omanis to experiences that were not normally available and endorsed in their own country, and in these locales, soft and hard substances were readily available for purchase and consumption (Mobasher, 2016). These changes may have affected individuals' mental health and have encouraged individuals to consume alcohol or use mind-altering substances to cope with the changes (Al-Harathi & Al-Adawi, 2002; Al-Sinawi & Al-Adawi, 2006; Gaferi, Osman, Matheson, Wanigarantne & Bond, 2013).

More recent changes in Omani family composition and function have occurred in recent years. The primary family type changed from an extended to nuclear family, and the central

authority enjoyed by fathers has declined. Women gained many social rights such as the right to education and working alongside men (Al Riyami, Afifi, & Mabry, 2004). The increase in the number of working women has been associated with an increased use of domestic workers (i.e., housemaids), and these women often assume a major role in childrearing. Housemaids typically come from different cultures and countries wherein alcohol and substances are widely used, such as India and Pakistan (Al-Barwani & Albeely, 2007; Roumani, 2005). This shift in family function and culture has created a gap between the generations, such as the gap between parents' and children's education level. Due to the changes occurred with parental roles, child-parents' communications, family functions, and norms have seen a shift from the traditional Omani family to more modern family functions (Al-Barwani & Albeely, 2007).

Moreover, in order to accomplish the goal of modernizing the country, the Omani government also employs a substantial numbers of foreigner workers. By mid-2015, 44% of Oman residents were immigrant workers (Gulf Labour Markets and Migration [GLMM], 2015). A recent study suggested that alcohol and substance use may be increasing within the Muslim Arab regions as a result of unprecedented rapid economic development (Gaferi et al., 2013) and societal shifts. The growth of the immigrant community, coupled with diversification in the economy, has affected the religious and cultural values of native Omanis and their cultural identity (Alhyas et al., 2015). Omani youth of college and university age have been raised in this shifting societal environment.

Development Context

Significant numbers of the Omani population are young; 67% of Oman's total population

is between 15 and 64 years old with 50% being under age 25 (“Oman’s education budget clocks \$3.38 billion in 2013,” 2014). A significant percentage of youth means that the Omani government allocates substantial resources to education. A report by Alpen Capital, a leading investment bank in the GCC and Asia, estimated that OMR 1,302,364.70 (US \$3.38 billion, or 10% of all Oman expenditures) were allocated to education and training projects in 2013 (“Oman’s education budget clocks \$3.38 billion in 2013,” 2014). Additionally, there has been an increase in the numbers of Omani higher education students aged 18 to 24 years, up from 24.8% in 2006-2007 to 35.2% in 2013-2014 (Oman Chamber of Commerce & Industry, 2015). The Oman MHE oversees all public and private HEIs, which are located in all 11 regions of the country.

With the high number of youth enrolling in HEIs, a vast portion of the population is experiencing major developmental transformations as they evolve from adolescence into adulthood (Kong & Bergman, 2010). This transitional period presents challenges for many young people (Anderson, Ramo, Cummins & Brown, 2010). Accordingly, emerging adulthood has been characterized as a life phase associated with increased prevalence of problem behaviors like risky driving, damaging campus property, misuse of alcohol and substance, and violence (Evans-Polce et al., 2016; Shek & Wong, 2011; Sweileh et al., 2014). Other considerations include the greater freedom and less social control of campus living and increased opportunity to be involved in problem behaviors (Al-Houqani, Ali, & Hajat, 2012; Arria et al., 2010). The competition presented by rigorous admissions standards, rising tuition costs, and pressure of the academic achievement must also be factored (Shek & Wong, 2011). According to Hunt and Eisenberg (2010), “behavioral issues such as untreated mental illness and/or substance use that surface by this transition period may have significant implications for academic success,

productivity and social relationships” (p. 3).

Alcohol and Substance Use Among Youth in other GCC Countries and Oman

Evidence suggests that alcohol and/or substance use among college students is a growing public health concern for GCC countries (EMRO, 2012). A paucity of studies in the other GCC countries and in Oman specifically have investigated alcohol and substance attitudes, beliefs, and behaviors among college students (Sweileh et al., 2014). Alsanusy and Setouhy (2013) noted that a desire to show maturity, peer pressure, and ease of availability are some of the factors that influenced Saudi college students to use khat. The sample was selected from Jazan region universities in Saudi Arabia, the most populated region in the country with 50,000 students enrolled. A total of 3,764 students responded to questionnaires (57.5% male and 42.5% female). Overall khat chewing prevalence was higher among male college students at 23.1% compared with females at 2.1%. The investigators concluded that this was increasing trend in khat use among Saudi college students. Like the Alsanusy et al. (2013) study, Karimy et al. (2012) concluded that the same influencing factors were found among Iranian male high school students (N=400). Karimy’s sample consisted of Iranian high school students from seven schools across Iran. His cross-sectional study measured shisha (waterpipe) smoking patterns and associated factors that predicted shisha usage. The study findings supported the increased prevalence of shisha smoking (18%). The mean knowledge, attitudes, and risk perception scores for non-Iranian smokers were higher than for smokers. Karimy et al. (2012) concluded that Iranian students had incorrect beliefs of the hazardous effects of shisha smoking. Evidence from other studies conducted in the EMR countries resulted in similar findings about college student’s knowledge, attitudes, and beliefs about the harmful consequences of tobacco smoking and shisha (Obaid et al., 2014; Salameh et al., 2015; Shadid & Hossain, 2015). In congruence

with study findings in other GCC countries, Omani students reported an increase use of alcohol and/or substances (Al-Lawati et al., 2008; Al Riyami et al., 2004; Al-Sinawi et al., 2006; Moh'd Al-Mulla et al., 2008; Zaidan et al., 2007); however, no theoretical framework was used to predict Omani students engaging in alcohol and/or substance use behavior.

Health Behavior Theory (The Theory of Planned Behavior)

Application of a health behavior theory to a problem behavior can provide a framework that facilitates the identification of potential enabling forces for that behavior (Glanz, Rimer, & Viswanath, 2008). For purposes of this study, the TPB (Ajzen, 1991) was used to provide an outline of alcohol and/or substance behavior intentions. Evidence has shown that the TPB is an excellent tool for examining problem behaviors such as engaging in risky sexual behaviors (Buhi, & Goodson, 2007), smoking tobacco (Record, Harrington, Helme & Savage, 2017), overindulging in alcohol (Crawford & Novak, 2010; Ross & Jackson, 2013), and use of marijuana and other illegal substances (Mcmillan & Conner, 2003; Morrison, Golder, Keller & Gillmore, 2010). TPB has been used with a diversity of populations including adults (Tebb et al., 2016), adolescents (Ramirez et al., 2004), and children (Buhi et al., 2007). Several research studies that used TPB described a relationship between attitudes, subjective norms, self-efficacy, perceived behavioral control, and alcohol and substance use intentions among college students (Karimy, Zareban, Araban, & Montazeri, 2015; Mcmillan & Connor, 2003; Ross & Jackson, 2013).

Examination of Alcohol and Substance Use Behaviors Using TPB

Ponnet, Wouters, Walrave, Heirman, & Van Hal (2015) presented an overview of the utility of using various social cognitive models to gain perspective on the determinants of alcohol and substance use. These models can frame exploration of which factors most predict use behaviors and analyses in different populations. TPB is the most widely used model; it includes the antecedents of alcohol and substance use and has been proven to be an effective framework for designing interventions. Rhodes and Clinkinbeard (2013) explained that the TPB model proposes a set of motivational factors that affect the intent to consume alcohol and substances. Specifically, it recognizes that intention is a function of an individual's attitude, subjective norm, and perceived behavioral control of that behavior. When attitudes toward alcohol and substance use are positive, it supposes to influence people to engage in the behavior. Additionally, attitudes are the positive or negative evaluations of a certain action, which in turn, affect their behavior. It is also highly influenced by an individual's level of knowledge. In reference to Ponnet et al. (2015), subjective norms are pressures that individuals perceive as important to others in regard to executing a certain action, while self-efficacy is the perception of ability to overcome barriers and preform the behavior. Lastly, the perceived behavior control refers to an individual's interpretation of whether adopting a particular behavior may be easy or challenging. Perceived behavior control is also grounded in challenges that a person has encountered in the past with respect to executing or stopping a certain behavior. Generally, these three motivational factors have been suggested to affect behavior by first influencing intentions.

The utility of TPB for examining factors that may lead to risk behaviors such as alcohol and/or substance use is ideal for use in the current study. Therefore, the theory was adopted as the framework of this study. The study variables were; OCSs alcohol and/or substance

knowledge, attitudes, subjective norms, self-efficacy, perceived behavioral control, and behavioral intentions.

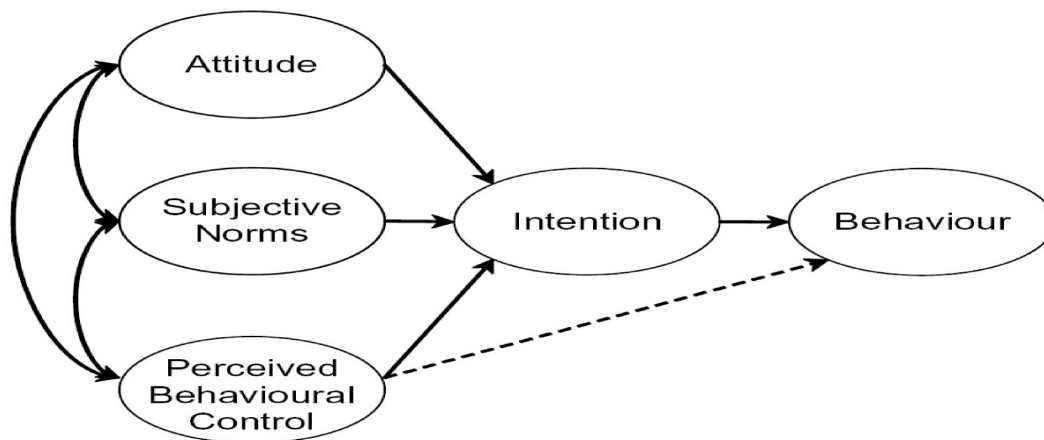


Figure 3. Theory of Planned Behavior (Ajzen, 1991)

Attitudes and Intentions

TPB suggests that attitudes, along with other variables, predict intention to engage in behaviors such as alcohol, marijuana or hashish use (Collins, Witkiewitz, & Larimer, 2011; Ponnet et al., 2015; Rhodes & Clinkinbeard, 2013; Ross & Jackson, 2013). The influence of these variables can be direct—where an individual assesses whether using alcohol and/or substance is beneficial or not—or indirect—such as what occurs when an individual believes that a certain consequence may result from consuming alcohol and other substances (Ajzen, 1991). However, in the case of behavioral intentions, the influence of variables may vary depending on if they are attitudinally driven or normatively driven (Ajzen, 1991).

Ross & Jackson (2013) noted that college students' attitudes are one of the strongest determinants of their intentions and behaviors. In addition to his findings, it is critical note that

students who had positive attitudes toward alcohol consumption (i.e., a subjective norm), irrespective of their perceived behavioral control, intended to engage in binge-drinking behavior. Ross & Jackson concluded that college students do not perceive binge drinking to be a difficult behavior. Based on the findings, perceived behavioral control did not impact college students' intentions to engage in binge drinking. On the contrary, college student self-efficacy accounted for some of the variance as perceived behavioral control. These results indicate the importance of separating the measure of self-efficacy and perceived behavioral control. The pressing severity of the alcohol and/or substance use led investigators to explore, correlate, and predict alcohol and/or substance use among college students. Factors that were investigated regarding college students' alcohol and substance use attitudes included personality traits, opinion of the risk and benefits of use, and past experience (Arria et al., 2010; Evans-Polce et al., 2016). Attitudes related to alcohol and/or substance behavioral intentions among OCSs have not been explored. Previous studies that examined high school students' attitudes mainly focused mainly on smoking behavior (Al-Sinawi et al., 2006; Moh'd Al-Mulla et al., 2008), or they examined alcohol and/or substance use in psychiatric patients (Zaidan et al., 2007).

Subjective Norms and Intentions

Subjective norms are also considered as predictors for intentions to engage in health-related behaviors such as alcohol and/or substance use. A subjective norm is "social pressure to engage in behavior based on the perceptions of what other people want you to do" (Ajzen, 1991) as well as the perception of what other individuals believe regarding the behavior. An individual's subjective norms are also influenced by the observed or inferred behavior of others within their social network and are influenced by peers engaging in said behavior (Ajzen, 1991).

According to TPB assumptions, peer and family have high influence on OCSs 'alcohol and/or substance use and their intentions to engage in the said behavior.

Subjective norms include the influence of family, friends, social class, education level, and culture (Barrett & Turner, 2006). Investigators have found that the greatest factor associated with alcohol and/or substance use and abuse is family history (Alam-Mehrjerdi, Noori, & Dolan, 2016; Griffin & Botvin, 2011). Family history may have a role in both predisposing and protecting one from alcohol and/or substance use.

Researchers have concluded that family history is related to alcohol use in two ways (Alam-Mehrjerdi et al., 2016; Barrett & Turner, 2006; Griffin & Botvin, 2011). First, when some family members drink or smoke, other family members are influenced to do the same by observing and learning (Griffin & Botvin, 2011). Griffin and Botvin (2011) found that children of alcoholics, especially males, were more inclined to develop alcohol use issues when compared with children of non-alcoholics. Further, a significant predictor to drug use among Iranian male high school students was associated with friends' and parents' drug use (Bashirian, Hidarnia, Allahverdipour, & Hajizadeh, 2012). Bashirian and colleagues (2012) found that attitudes and subjective norms were the most influencing predictors to drug abuse.

Second, the level of family control played a critical role in the perception of young adults toward drinking. Families that reprimanded their children or expressed concern after consuming alcohol were associated with the young adults who were more likely to elicit positive perceptions toward alcohol consumption (Griffin et al., 2011). Hence, a higher prevalence of alcohol consumption was reported among young adults whose parents were strict and exhibited a high level of parental control. They found that when parents were less strict about homework and curfews, young adults were less likely to use alcohol or other substances Griffin et al., (2011).

Van Ryzin, Fosco & Dishion (2012) indicated that young adults that have family problems are more likely to use substances. Their findings supported the notion that the nature of family influence experienced across adolescence and into early adulthood affects the perception and the intention to use substances. In addition, Van Ryzin and his colleagues found that parental monitoring and family relationship quality indirectly predicted later substance use. Karam et al. (2004) explained that the psychological stress that arises from family problems results in young adults experimenting with alcohol and/or substances as a way to relieve their psychological stress.

Peer relationships are another type of social influence that has been reportedly associated with likelihood of engaging in alcohol and/or substance use. Many individuals, particularly students, responded that peer pressure lead to drinking alcohol in order to avoid social rejection from a group (SAMHSA, 2015). This report was consistent with the findings from students who reported influenced by their peers to use of alcohol and/or substance (Crawford & Novak, 2010; Griffin & Botvin, 2011; Van Ryzin et al., 2012).

Individuals are more likely to engage in marijuana use if they believe influential peers or other members of their social networks approve of the behavior. Peer beliefs, social pressure and the intention to use marijuana are all correlated (Collins & Spelman, 2013; Collins et al., 2011; Griffin & Botvin, 2011; Van Ryzin et al., 2012). However, when individuals are “made aware of the fact that peer pressure is often overestimated” they tend to focus more on the approval and disapproval of authority figures. Crawford & Novak (2010) suggested that individuals are influenced by “important people” who believe they “should or should not” perform a behavior. As TPB theorized, examining OCSs peer and family influence should predict their intentions to use alcohol and/or substance.

Self-Efficacy, Perceived Behavioral Control and Intention

Along with attitudes and subjective norms towards alcohol and/or substance use, self-efficacy was also found to predictor behavioral intentions. Self-efficacy and attitudes are both associated with intentions to use substances (Collins et al., 2011; Rhodes et al., 2013). Self-efficacy is “the extent to which a person feels capable of effectively performing the behavior” (Ajzen, 2002). Self-efficacy comes from the perception one has of their capability to perform the behavior with different challenges and circumstances, while how easy or difficult to perform the behavior is defined as the person’s perceived behavioral control (Ajzen, 2002; Bandura, 1977). Individuals who have negative attitudes towards alcohol and substances may not have the skills or the efficacy to say no to drugs in certain situations. Therefore, understanding the targeted populations self-efficacy is important in developing prevention programs.

Discussing previous events involving negative health behavior and consequences for future engagement can contribute to an individual’s self-efficacy, specifically if the negative health consequences involved are understood. Perception of the negative health consequences in performing a behavior influences the likelihood of the individual engaging in the behavior. Collins et al. (2011) revealed that college students’ growth in risky drinking were significantly predicted by their self-efficacy and attitudes, understanding the risk involved also contributes to individuals’ perception of their self-efficacy. Collins and his colleague indicated that students with high self-efficacy and positive attitudes were more likely to later engage in riskier drinking behaviors. Therefore, baseline measurement of self-efficacy and attitudes is important factor in predicting intentions to future behavior.

Barrett & Turner (2006) found that open family communication affects individuals' self-efficacy and perception of risk. Witnessing a family member engage in alcohol and substance abuse and seeing the consequences increases an individual's perception of being at risk, which also affects their level of self-efficacy.

Individuals are more likely to engage in alcohol and/ or substance use when in situations in which they feel unable to refuse alcohol and/or substances (Rhodes et al., 2013). Rhodes et al. (2013) found that college students who reported low self-efficacy in the ability to reduce drinking were more likely to drink; however, perceived behavioral control measured by alcohol availability was not a significant predictor among the same college students (Rhodes et al., 2013). Due to increased availability of alcohol and/or substances in Oman, perceived behavioral control was measured by OCSs perception of easy or difficulty to obtain alcohol and/or substances.

Knowledge and Intentions

The literature emphasized the importance of measuring college students' alcohol and/or substance use knowledge as it correlated with their attitudes and self-efficacy (Abu-Helalah et al., 2015; Elarabi et al., 2013; Heckman, Dykstra, & Collins, 2011; Ramirez et al., 2004). For instance, Abu-Helalah et al. (2015) noted that knowledge of negative effects of substances influences attitudes and hinders a person's intent to use. According to the findings reported by these authors, the majority of ex-smokers noted that their knowledge about family history of heart ailments affected their decision to stop smoking hookah and seek treatment. As such, these individuals reported positive behavioral control and enrolled in treatment programs. On the contrary, the participants that believed in the positive effects of the drug had a negative impact

on treatment interventions and strongly agreed with the false belief that the substance does not cause harm. These findings are an indication of the role of knowledge as mediator for attitudes, subjective norms, self-efficacy and perceived behavioral control on behavior intention. Due to the lack of information on OCSs' knowledge of the negative health and legal consequences of alcohol and substance use, this was added as mediator in this study.

Mental Health Services in Oman

College students who have challenges related to alcohol and/or substance use face numerous obstacles when making decisions to quit or access treatment (Evans-Polce et al., 2016). Oman mental health services are provided through primary, secondary, and tertiary health care institutes. There are two specialized mental hospitals available for all Omanis free of charge; however, both are located in the capital, Muscat region. Moreover, addiction rehabilitation facilities are limited, and they are located in the mental hospitals. No community-based rehabilitation facilities are available for Omanis, and school-based educational programs are mainly informative versus actionable (WHO, 2008). In addition to the poor access to these facilities by OCSs, current programs are not uniquely crafted to suit the cultural needs of Omani citizens. Such intervention strategies should encompass culturally sensitive approaches suitable for different settings and groups. There is a need to recognize that different substances are popular in different countries and affect users differently (Evans-Polce et al., 2016; Lee, Neighbors, Kilmer, & Larimer, 2010). The increasing use of alcohol and/or substances in Oman, as well as the increase in negative health effects, should demonstrate that Oman's current strategy of modeling from other developed countries without regard to the cultural differences surrounding such use is a disservice to Omani citizens, especially OCSs.

Summary of the Literature

A review of the current evidence about the association between college-aged young adult's attitudes, subjective norms, self-efficacy, perceived behavioral control, and alcohol and/or substance use revealed a broad expanse of studies that produced evidence that these factors have been associated with and/or have been predictors of alcohol and substance use intentions and behaviors (Bashirian et al., 2012; Collins & Spelman, 2013; Collins et al., 2011; Ponnet et al., 2015; Rhodes et al., 2013; Ross & Jackson, 2013; Van Ryzin et al., 2012); however, few differed regarding the predictive power of perceived behavioral control.

Although alcohol consumption and substance use have been widely recognized as a public health challenge in EMR (Sweileh et al., 2014), most studies have been primarily conducted with Western populations with very little evidence generated from studies of Eastern populations such as the EMR. The studies that were conducted in the EMR took place in Iran, India, Jordan, Saudi Arabia, and UAE. Very few comprehensive studies have been conducted that examined alcohol and/or substance issues in Oman. The studies that have been conducted focused on tobacco smoking or alcohol and were done with known substance abusers, prisoners, and/or psychiatric patients (Al-Balushi, 2004; Al-Lawati et al., 2008; Al Riyami et al., 2004; Zaidan et al., 2007). Factors such as family economic/tradition change, relationship quality, communications, and parental monitoring were rarely investigated in relation to alcohol and/or substance behaviors in Oman. Most of these studies lacked theoretical framework; therefore, they did not systematically focus on specific psychosocial predictors of alcohol and/or substance use such as attitudes, subjective norms, self-efficacy, perceived behavioral control, and intentions. Furthermore, the majority of study sample populations were males. None of the

previous work has focused on the use of alcohol and/or substance behaviors among college or higher education students—a population wherein prevention is needed and may be more likely to be effective. However, most of Omani studies were outdated, having been conducted prior to 2009.

This study will fill some of the gaps in knowledge by exploring alcohol and/or substance use attitudes, subjective norms, self-efficacy, perceived behavioral control, and behavioral intentions in male and female OCSs. In addition, family communication patterns will also be explored.

Notably, attitudes, subjective norms, self-efficacy, perceived behavioral control, and behavioral intentions towards alcohol and/or substance use may be affected by the knowledge (Karimy et al., 2013), stressing the importance of examining the potential mediated relationship between knowledge, attitudes, subjective norms, self-efficacy, perceived behavioral control regarding alcohol and substance use (see Figure 4).

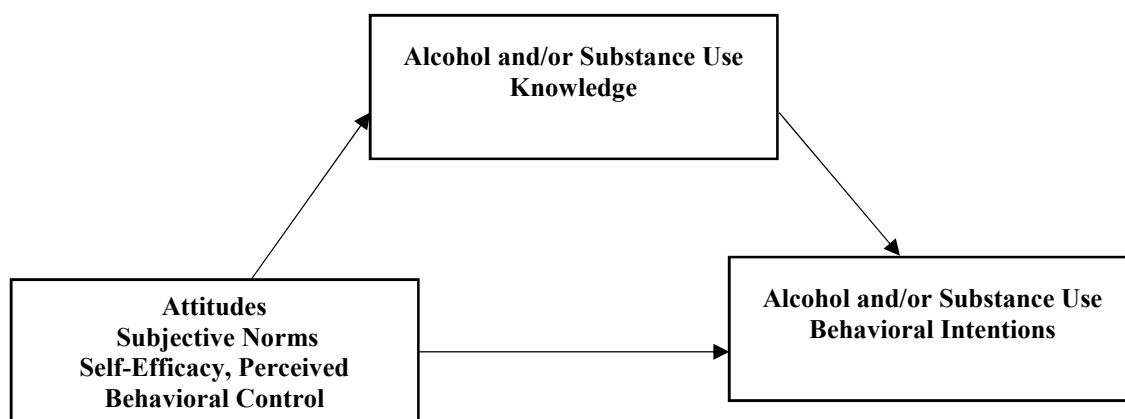


Figure 4. Mediated Model for Impact of Knowledge on Behavioral Intentions as Mediated by TPB Towards Alcohol and/or Substance Use

Studies conducted on OCSs' alcohol and/or substance use knowledge are rare. Evidence indicates that college students with adequate knowledge in regard to negative consequences of alcohol and/or substance use had negative attitudes toward this behavior (Abu-Helalah et al., 2015; Heckman et al., 2011; Ramirez et al., 2004).

Given that knowledge alone may not have direct impact on behavioral intentions and is often times mediated by attitudes, subjective norms, self-efficacy, and perceived behavioral control, this study tested the mediation model. It is essential to understand the influence of the strength of knowledge on behavioral intentions and examine the effects of knowledge on intentions as mediated by attitudes, subjective norms, self-efficacy, and perceived behavioral control prior to developing intervention and prevention programs.

In conclusion, the problem is growing among college students enrolling in HEIs who are characterized by a variable of risky behaviors (Dennhardt & Murphy, 2013). As such, there should be culturally sensitive intervention strategies to curb college students' intention to use alcohol and/or substances and to encourage those who are already abusing them to seek treatment.

Therefore, this study investigated the OCSs knowledge, attitudes, subjective norms, self-efficacy, perceived behavioral control, and alcohol and/or substance use behavioral intentions.

CHAPTER III

METHODOLOGY

The purpose of this study was to a) identify knowledge, attitudes, subjective norms, self-efficacy and perceived behavioral control associated with alcohol and/or substance usage patterns among OCSs; b) identify behavioral intentions for alcohol and/or substance use among OCSs; and c) facilitate the development of culturally relevant evidenced-based interventions for Omani young people by communicating study findings to policymakers and healthcare program leaders.

The study aims were to a) obtain preliminary data on alcohol and substance use behaviors among OCSs and b) examine the role of knowledge in mediating alcohol and/or substance use behavioral intentions among OCSs. The dependent variable was alcohol and/or substance use behavioral intentions among OCSs. The independent variables were the socio-demographic characteristics a) age, b) gender, c) father's educational level, d) mother's educational level, e) family income, f) student grades, g) college type, h) live on or off campus, i) region of permanent residence, j) religiosity, k) sharing thoughts/feelings/plans with parents and the TPB constructs a) attitudes, b) subjective norms, c) self-efficacy, d) perceived behavioral control.

Research Questions

The research questions were:

- RQ 1. What was the prevalence rate, in the past 30 days, for alcohol and/or substance use among OCSs?
- RQ 2. What was the lifetime prevalence rate for alcohol and/or substance use among OCSs?

- RQ 3. Is there a relationship between OCSs' attitudes, subjective norms, self-efficacy, perceived behavioral control, and alcohol and/or substance use behavioral intentions?
- RQ 4. Are there any differences between socio-demographic characteristics of OCSs in their attitudes, subjective norms, self-efficacy, perceived behavioral control and alcohol and/or substance use behavioral intentions?
- RQ 5. Is there an overall relationship between socio-demographic characteristic, attitudes, subjective norms, self-efficacy, perceived behavioral control, and alcohol and/or substance use behavioral intentions?
- RQ 6. Does OCSs' knowledge about alcohol and/or substance use mediate the effects of the TPB constructs on alcohol and/or substance use behavioral intentions?
- RQ 7. Do the behavioral use intentions of OCSs predict alcohol and/or substance use in the past 30 days?

Research Design

This study was cross-sectional in nature. The TPB was used to frame the research questions, data collection and analyses (Ajzen, 1991). Data were collected via an online survey. The anonymity provided by an online survey was an appropriate method for data because of the sensitive nature of information about alcohol and/or substance use. Recent applications of TPB studies support the use of an internet survey. For instance, Collins and colleagues (2011) used TPB to guide their online explorations of predictions of risky college drinking (N= 837). Another study by Chan & Hung (2010) used online questionnaires to examine the attitudes, perceived

behavioral control, and intentions to drive after drinking among young adult drivers (N= 124). Kilmer et al. (2006) used an online survey to investigate the relationship between marijuana use, subjective norms, and negative experiences or problems from alcohol and substance use among college students (N= 5,990).

Human Subjects Protections

Approval was granted from the Old Dominion University Institutional Review Board (IRB) (see Appendix C), the Oman MHE (see Appendix D), and the Oman Ministry of Health (see Appendix E) before implementing any study related procedures. Additional permissions were obtained from the research department at Dhofar University (see Appendix F). This was necessary because Dhofar is a private university, and therefore, not under the auspices of the MHE.

Setting

Participants were recruited from a list of twenty-seven public and private HEIs in Oman. These HEIs were distributed in different regions of Oman. These regions included a) Dhofar, b) Muscat, c) North & South Batinah, d) North & South Sharqiyah, e) Al-Dakhiliyah, f) Ad Dhahirah, g) Musandam, h) Al-Buraimi, and i) Al Wusta. Research has indicated that college students are at a critical point for either adopting positive health behaviors or participating in risk-taking behaviors (Dennhardt & Murphy, 2013; Griffin & Botvin, 2010). Hence, the college environment is a relevant setting for promoting healthy behaviors and educating about behaviors that have the potential to detrimentally impact both short and long-term health (Tebb et al., 2016; Tucker et al., 2016).

Eligibility Criteria

Participant inclusion criteria were a) enrolled in Omani HEI, b) an ability to read Arabic, and c) aged 18 years and older. A list of all Oman HEIs was obtained from the Oman MHE. Participants were then recruited from one private university and 27 public HEIs from different regions of Oman. Invitations to participate were sent to all OCSs who were enrolled at those institutes for the Fall 2016-2017 term. Potential participants were solicited via email, phone text (short text messages) (see Appendix H), and flyers (see Appendix I). These invitations were sent by the MHE Information Technology (IT) Department to the public institutes. For Omani private institutes, the participation invitations were sent from their IT departments. A link to the anonymous survey was included in the recruitment message.

Determination of Sample Size

When conducting a quantitative analysis, the sample size must be sufficient in number to represent the population in question, to generate adequate power as well as to decrease standard error (Ott & Longnecker, 2010). An optimal sample size was pre-determined for purposes of providing the highest possible power. According to Singh et al. (2014), when the population size is known, the following formula can be used:

$$n = \frac{N}{1 + N * (e)^2} = \frac{119,331}{1 + (119331) (.05)^2} = 383$$

N is the size of the population and e is the level of precision required. In addition, the investigator used an online quantitative sample size calculator using the following equation:

$$S = (z^2 (d (1 - d)) / e^2) / 1 + (z^2 (d (1 - d)) / e^2)$$

(S = sample size | z = z-score | e = margin of error | d = standard deviation)

to confirm the sample size needed. Based on the current total enrollment of 119,331 OCSs (Singh & Masuku, 2014), a calculation was performed to determine the sample size needed to maintain the power of 0.95. With a population size of 119,331, with a precision estimate of 0.05 (confidence interval [CI] of +/-5%) a minimum sample of 383 was needed. There was no incentive to participate in this study. Nulty (2008) indicated that a typical online survey delivered without an incentive will yield a 15% to 20% response rate. Thus, the investigators added an additional 15% to the sample size to account for data errors and omissions. Therefore, a total sample of 441 OCSs who are enrolled in the academic year of 2016-2017 was needed.

Instruments and Measures

The investigators used the Alcohol and Substance Use Scale adapted for use with OCSs (ASUS-OCSs) (77 items, Cronbach's Alpha range from $\alpha = .60$ to $.93$) to measure attitudes, subjective norms, self-efficacy, perceived behavioral control, and behavioral intentions of OCSs (see Appendix A).

The ASUS-OCSs was adapted from three valid and reliable scales found in the published literature (ACHA, 2009; Martin, Wilkinson & Poulos, 1995; Veenker & Torabi, 1984). The three source instruments were the Alcohol Attitude Scale for College Students (Cronbach's $\alpha = .94$) (Torabi & Seffrin, 1985; Veenker & Torabi., 1984), the Drug Avoidance Self-Efficacy Scale (DASES, Cronbach's $\alpha = .91$) (Martin et al., 1995), and The National College Health Assessment (NCHA-ACHA, Cronbach's $\alpha = .97$). Appropriate permission was obtained from the original author of the Alcohol Attitude Scale for College Students. The two instruments DASES and

NCHA-ACHA were available in the public domain for use by researchers.

The face validity of the ASUS-OCSs was assessed via the use of a panel of experts, a pilot with OCSs (N=30), and a review of literature. Three subscales were generated including the a) feelings subscale (items 1-18), b) beliefs subscale (items 19-36), and c) intentions to act subscale (items 37-54). The subscales used Likert scales (i.e. strongly agree, agree, uncertain, disagree, and strongly disagree). A psychometric examination revealed that all three subscales had high internal consistency (feelings, Cronbach's $\alpha = .83$; beliefs Cronbach's $\alpha = .84$; intentions to act Cronbach's $\alpha = .85$) and internal consistency for the total scale was (Cronbach's $\alpha = .94$).

The DASES instrument was used to measure self-efficacy and perceived behavioral control (Martin et al., 1995) and contains 16 items specifically concerned with the avoidance of alcohol and/or substance use. The scale items were derived from clinical reports obtained from multiple user clients in residential programs. Clients were asked to rate their confidence in their ability to avoid alcohol and/or substance use on a seven -point Likert scale range from 1 (certainly not) to 7 (certainly yes). The scale appeared to be unidimensional with high internal consistency ($\alpha = .91$).

The NCHA-ACHA consists of eight subscales including a) health and safety, b) alcohol, tobacco and drugs, c) sex behaviors, d) weight and exercise, e) mental health, f) physical health, g) academic performance, and h) demographic characteristics. Survey items pertaining to socio-demographics characteristics, descriptive norms knowledge, and actual alcohol and/or substance use were adapted from the NCHA-ACHA for use in this study. Multiple analyses were conducted to establish NCHA-ACHA reliability and validity. Methods included comparing relevant percentage with a nationally representative database, conducting construct validity

analyses comparing the NCHA-ACHA with a nationally representative database, and conducting a measurement validity and comparing the result with a nationally representative database. All of the NCHA subscales have a reliability range between Cronbach's $\alpha = .83$ and $.97$.

These three established instruments are currently used in the published literature (Haider et al., 2015; Woodruff et al., 2014; Torabi, Seo & Jeng, 2004). Although the instruments have established valid and reliable reports (alcohol attitude scale Cronbach's $\alpha = .94$, DASES Cronbach's $\alpha = .91$), minor modifications were made to these instruments (see Table 1).

Table 1. *ASUS-OCSs Survey Items and Sources*

Variables	Survey Items	Source of Survey Items	Cronbach's Alpha
Socio- Demographic Knowledge	Section I 1-14	The National College Health Assessment (NCHA-ACHA, 2009).	.83
	Section I 15-19		
Prevalence of Use	Section I 20-22		
Descriptive Norms	Section I 23-25		
Behavioral Intentions	Section I 26-29	Alcohol Attitude Scale for College Student (Torabi et al., 1984)	.94
Attitudes	Section II 1-18	Alcohol Attitude Scale for College Student (Torabi et al., 1984)	.94
Subjective Norms	Section III 1-12		
Self-Efficacy	Section IV 1-16	Drug Avoidance Self-Efficacy Scale (DASES) (Martin et al., 1995)	.91
Perceived Behavioral Control	17-18	National College Health Assessment (NCHA-ACHA, 2009)	.97

Psychometrics

Face validity of the ASUS-OCSs was established via feedback from experts in the field and via a pilot study of OCSs (N= 30). To determine the reliability of the adapted instruments, internal consistencies were examined using Cronbach's Alpha. Result from the analyses revealed internal consistency within college students to be moderate to high (attitudes $\alpha = .82$; subjective norms $\alpha = .93$; self-efficacy $\alpha = .70$; perceived behavioral control $\alpha = .88$; behavioral intentions $\alpha = .60$, knowledge $\alpha = .60$). See Table 1 for more information. For a presentation of the constructs represented by survey items, the instruments the subscales were derived from and internal reliability psychometrics for the original survey from which all items were adapted.

The modified survey (i.e. ASUS-OCSs) was a total of 77 items and consisted of four subscales: Section I: Socio-demographic characteristics (14 items), knowledge (5 items $\alpha = .60$), prevalence of use (3 items), descriptive norms (3 items $\alpha = .93$), and behavioral intentions (4 items $\alpha = .60$); Section II: attitudes (18 items, Cronbach's $\alpha = .82$); Section III: subjective norms (12 items, Cronbach's $\alpha = .93$); and Section IV: self-efficacy (16 items Cronbach's $\alpha = .70$) and perceived behavioral control (2 items, Cronbach's $\alpha = .88$). The survey was translated from English into Arabic and then translated back into English. The accuracy of these translations was confirmed by two different Arabic language experts (see Appendix B)

Section I

The Alcohol Attitude Scale for College Students (Torabi et al., 1985; Cronbach's $\alpha = .94$) and the NCHA (Cronbach's $\alpha = .97$) scales were used to gather the socio-demographic information from the respondents. Three socio-demographic items were used to establish eligibility for survey participation (i.e. How old are you? Are you currently enrolled in one of the

HEIs in Oman? What is your nationality?), and therefore, two of these items (i.e., HEI enrollment and nationality) were not used for data analysis. Eleven items were used to obtain data about socio-demographic characteristics, these items were age (categorical; 18-24, 25+), gender (dichotomous, male/female), father's education level and mother's education level (categorized as less than high school, college degree, master's degree and doctoral degree), family income (categorized as low, 200 to 500 OMR/month; middle, 600 to 2,000 OMR/month; and high, 3,000 OMR/month and above), students' grades (categorized as A&B, B&C, C&D, and D&F), college type (categorical; public, private), live on or off campus (dichotomous, yes/no), region of permanent residence (categorized as Dhofar, Muscat, North or South Batinah, North or South Sharqiyah, Al-Dakhiliyah, Al Buraimai, Musandam, or Al-Wusta), religiosity (Likert scale; from 1 not religious to 5 very religious), and students sharing of thoughts/feelings/plans with parents (Likert scale; from 1 never to 5 very often).

Five items (dichotomous, yes/no) were used to measure OCSs' health and legal knowledge about alcohol and substance use. Knowledge questions were adapted and modified from the NCHA-ACHA (Cronbach's $\alpha = .83$). For example, health knowledge questions such as "Have you received information on the following topics from your college or university: alcohol and other drug use, depression/anxiety, eating disorders, cold/flu/sore throat, injury prevention? or Are you interested in receiving information on the following topics from your college or university; alcohol and other drug use, depression/anxiety, eating disorders, cold/flu/sore throat, injury prevention?" were modified to read as "Have you ever heard about the negative consequences of using alcohol and illicit substances?" or "Did you receive any educational materials or classes designated for alcohol and/or substance use health issues?" Because there are major negative legal consequences that may result from alcohol and substance use in Oman,

legal knowledge was specifically explored. For example, items asked, “Are you aware of Oman drug laws article 43, regarding smuggling, possessing, or consuming illegal drugs?” The modified knowledge items reliability was Cronbach’s $\alpha = .60$. If fewer than 75% of the items were present, then the overall value was not scored.

Three items measured the prevalence of alcohol and/or substance use among OCSs in the past 30 days and over their lifetime. Responses items for alcohol and/or substance use were categorical, ranging from never used to daily use. Alcohol and/or substance use was measured by two dichotomous items (yes/no) assessing whether or not the student had consumed alcohol/or substances in the past 30 days and/or their lifetime.

Three items adapted and modified from NCHA-ACHA (Cronbach’s $\alpha = .83$), used to measure the descriptive norms. The three items were at a continuous measurement level and were summed with subjective norms under Section III.

Alcohol and/or substance use behavioral intentions were measured with four items adapted from the Alcohol Attitude Scale (5- point Likert-type, strongly agree to strongly disagree; Cronbach’s $\alpha = .94$) (Torabi et al., 1985). The adapted four items were modified to accounted for OCSs cultural norms (Cronbach’s $\alpha = .60$) (i.e., it is not appropriate in Omani culture to ask students if they would drink in bars parties or if invited to drink or use by girlfriends or boyfriends [e.g., “I intend to offer both alcoholic and non-alcoholic beverage when I entertain my girlfriends/boyfriends”]). One statement under behavioral intentions questions was reversed (question 29), and their score was reversed for internal reliability purpose. The higher the sum of scores the respondent achieved, the higher their alcohol and/or substance use behavioral intentions. If fewer than 75% of the items were present, then the overall value was not scored.

Section II

Eighteen items from the Alcohol Attitude Scale for College Students (Torabi & Seffrin, 1985; Veenker et al., 1984) (Cronbach's $\alpha = .94$) were used to measure OCSs' personal opinions about alcohol and substance use (5-point Likert-type, strongly agree to strongly disagree). The respondents were asked how much they agreed with statements that examined personal opinions, society values, government responsibility, and health consequences related to alcohol and/or substance users. The four categories (i.e., personal opinions, society values, government responsibility, and health consequences of alcohol and/or substance use) for attitudes were summed if data was obtained for at least 16 of the 18 items. Questions number 1 through 5, 10 through 15, and 18 were reversed and their scores were reversed for internal reliability purposes. If fewer than 75% of the items were present, then the overall value was not scored. No attitude items exceeded the 25% rule for missing data; therefore, all items were retained for scoring. The higher the summed scores, the more positive the attitudes towards alcohol and/or substance use behavioral intentions.

Section III

Twelve items (5-point Likert, strongly agree to disagree) were adapted from Alcohol Attitude Scale for College Students (Torabi & Seffrin, 1985; Veenker et al., 1984) (Cronbach's $\alpha = .94$) to measure subjective norms. These items asked respondents to rate their perception of close friends' and family members' attitudes about alcohol and/or substance use. Peers and family norms (injunctive norms) variables allowed the investigator to assess the relationship between peers and family influences on their subjective norms.

For the purposes of this study, three items were adapted from the NCHA scale (Cronbach's $\alpha = .83$). These items measured descriptive norms. The items asked participants to identify, for example, the "percentage of OCSs you think drink alcohol," "percentage of OCSs you think smoke cigarettes, shisha, or Dhoka," and "percentage of OCSs you think used hashish, heroin, khat, or other drugs." This subscale was scored by summing the responses of the three items. Again, if fewer than 75% of the items were present, then the overall value was not scored. In addition, if any percentage was reported for a descriptive norm item that was greater than 10,000, it was excluded and treated as a missing variable. Scores for descriptive norms were summed. The higher the sum of scores the higher peers and family influence on alcohol and/or substance use behavioral intentions.

Section IV

The DASES (Martin et al., 1995) was used to measure self-efficacy and perceived behavioral control. Eighteen items were included in the DASES scale (Cronbach's $\alpha = .91$; 7-point Likert; strongly agree to strongly disagree). Self-efficacy refers to an individual's perceptions of their ability to perform a given behavior (drinking alcohol and/or using substance). Self-efficacy reflects the confidence people have that they are capable of performing the target behavior. Perceived behavioral control is the individual's perception of the ease or difficulty of performing a behavior. Self-efficacy was assessed by asking participants rank the how difficult it would be to resist self-derived motivation for alcohol and/or substance use and how confident they were that they could resist to use if faced with social or stressful situations. Controllability was assessed by asking participants to rate how easy or difficult it was for them to access alcohol and/or substance.

The DASES was modified by collapsing the original 7-point Likert scale to a 5-point Likert scale that mirrored the response options for measures of attitudes and subjective norms. Sixteen items measured self-efficacy (5-point Likert, Cronbach's $\alpha = .70$). In addition, two items were added to DASES scale to measure perceived behavioral control (7-point Likert from impossible to possible, Cronbach's $\alpha = .88$). The perceived behavioral control items asked the participants to rate how easy or difficult the participants think he/she could access alcohol and/or substances. The scores were reported as sum of all responses; the higher the score the higher the self-efficacy and perceived behavioral control. Again, if fewer than (75%) of the data were present, then the overall value was not scored.

Study Procedures

The primary investigator approached the Omani Ministry of Education and requested approval to conduct the study. Once this approval was granted, the primary investigator contacted deans of public Omani HEIs (N= 27) in different regions of the country. During the same time period, the administrative staff of three private higher education institutes were also approached by the primary investigator. Only one private institute agreed to allow the investigator to recruit students for study participation. Once permission to conduct the study was granted, the IT departments of those institutes emailed invitations for participation to potential participants. When the target numbers of surveys were reached, all the surveys that had been completed were secured by password and only shared among the authorized investigators of this study.

Informed Consent

Participation was voluntary and anonymous. By definition, strict anonymity makes it impossible to trace data or information back to the research subject from whom it was obtained. Generally, the use of online survey software makes it easier to administer anonymous surveys. The Qualtrics software program features the anonymity option. Once the initial list of potential participants was invited, gave informed consent, and completed the survey, the investigators did not have access to the participant's personally identifiable information.

A cover letter that accompanied the survey outlined the elements of informed consent, including: a) purpose of the study, b) voluntary nature of participation, c) risks and benefits of the study, d) measures taken to ensure anonymity, e) right to withdraw without penalty, and f) contact information for the investigators. Potential participants were instructed to read what the study entailed; any respondent that completed the survey was considered to have given informed consent (see Appendix G). Potential participants were instructed to contact the principle investigator for more information.

Recruitment

After receiving IRB approval, participants were recruited using a campus email announcement. Potential participants were contacted via Omani HEIs emails and/or phone communication system (see Appendix H). Short message services (SMS) were sent via the HEIs' phone communication systems. The announcement described the purpose of the study and contained the anonymous link to the study survey. Some public HEIs also distributed the survey

link via a social media application called “WhatsApp,” which is very popular and regularly used by students and faculty of HEIs in Oman. Three reminder emails and SMS were sent to potential participants via IT departments at 4, 10, and 14 weeks. In an effort to preserve anonymity, the study investigator did not have use the application or have access to potential participants’ personal information.

Pilot Study Procedure

Once IRB approval was granted, a pilot study of 30 OCSs was conducted to obtain feedback regarding: a) the face validity of the survey, b) the presence of errors, and c) the ease of completing the online survey including clarity of language and survey completion time. The survey was piloted in a classroom setting. During the summer of 2016, the primary investigator contacted Salalah Nursing Institute (SNI) to ask for permission to attend one computer class for purpose of piloting the online survey. The investigator was granted access to the computer class to administer the survey to the students. One lab technician was assigned by the institute to help in case of any technical difficulties. To allow for ample time for students to consider if they wanted to consent to participate in the pilot study, the class instructor briefly explained the nature of the study the day before the primary investigator visited the class in order to conduct the pilot study. The consent letter provided a detailed explanation of the study and assured students that their responses would be kept anonymous and confidential.

Cognitive interviewing was used to pilot test the survey instrument. Cognitive interviewing is used for pre-testing existing survey instruments. This process is focused primarily on the questionnaire itself, rather than the survey process (Willis, 1999). The cognitive interview technique that was used in this pilot study was “Think aloud.” In this technique, the

investigator asked the participants about their understanding of the language and context, clarity, and the time participants spent in completing the survey. During pilot survey administration, the investigator paid attention to major themes that presented themselves during the think aloud exercise, taking notes as needed to potentially make any necessary changes.

The method of survey completion during the pilot was the same process used during the actual study. Therefore, students completed the survey online via classroom computer stations. In addition, the pilot survey was conducted with the actual software (Qualtrics) used for the final study. The average completion time was 16 to 20 minutes. Thirty OCSs from SNI participated in the pilot study. Pilot study participants (N=30) were age 18 years and older.

Pilot Study Results

Findings from the pilot study resulted in minor changes to the survey instrument. Three of the 30 respondents found a page error in the formatting of the first pages—the text said “start” instead of “next” at the bottom of the first page of the online survey. This was corrected in the final survey. One respondent suggested that the survey questions should be aligned from right to left, as Arabic language is read from right to left. This was also corrected for the final survey. Some respondents indicated they thought some of the behavioral intention questions were redundant. Ajzen’s theory requires several different approaches to probe at constructs, thus no changes were made to the final survey. Overall, all participants reported no difficulty in answering the survey questions.

Data Collection

Data collection took place over a four-month period during academic year 2016-2017. Participants accessed the survey via HEI computer stations or personal computers. Three reminders were sent at time intervals to inform potential participants of the data collection timeline. The reminders were sent at 4, 10, and 14 weeks from the start of data collection. Once the participants clicked onto the link, they were provided with a consent letter and asked to click “next” to indicate consent. To determine eligibility, potential participants were asked three forced response questions (i.e., How old are you? Are you currently enrolled in one of the HEIs in Oman? What is your nationality?). If the participants were not eligible for participation, a thank you message ended the survey access.

Data Management Plan

After deactivating the survey intake link, the investigator exported the survey data into an Excel spreadsheet. Surveys were then thoroughly examined for consent and eligibility criteria. Surveys that meet inclusion criteria were stored in separate Excel spreadsheet. Those surveys that were not 75% complete or did not meet the criteria were excluded from the study. This examination of surveys resulted in removal of 19 surveys. All of the data was quality checked for errors and missing data. Upon completion of the data cleaning process, survey data were then transferred into the Statistical Package for Social Science (SPSS) version 24 software for further analysis.

Data Analysis Plan

Data were analyzed using SPSS version 24. For purposes of the analysis of potential relationships, variables were constructed to represent the major constructs of knowledge, attitudes, subjective norms, self-efficacy, perceived behavioral control, and alcohol and/or substance use behavioral intentions. As such, specific survey questions related to each of TPB constructs (attitudes, subjective norms, self-efficacy, perceived behavioral control, and behavioral intentions) were grouped into variables. The scored responses for attitudes, subjective norms, and self-efficacy questions were on a scale range from (1= Strongly agree to 5 =Strongly disagree), and perceived behavioral control questions were scored on a scale range from (1= Strongly agree to 7 = Strongly disagree). Responses scores were then summed to create a mean response for each of the aforementioned grouping to create variables for use in regression analyses.

For each analysis, the dependent variable (alcohol and/or substance use behavioral intentions) were scored as high behavioral intentions to use alcohol and/or substance if the participant behavioral intentions sum of scores were high.

The reliability coefficient measures the consistency by which participants responded to the entire scale; Cronbach's Alpha for the TPB constructs was analyzed and reported.

Cronbach's Alpha was used to assess the reliability of the scales.

An analysis was conducted of measures of central tendency, including mean, median, and standard deviations along with the CI. The CI was set at the $p = 0.05$ level to provide 95% probability that the population mean fell within the confidence interval.

Different of statistical techniques used to analyze the collected data. First, descriptive statistics of the sample were obtained for each socio-demographic characteristic: a) age, b)

gender, c) father's educational level, d) mother's educational level, e) family income, f) student grades, g) college type, h) live on or off campus, i) region of permanent residence, j) religiosity, and k) sharing thoughts/feelings/plans with parents). Frequency tables were used to present descriptive statistics.

Frequencies were calculated to determine the prevalence rate of the alcohol and/or substance use among OCSs for the past 30 days and lifetime.

Regressions analyses were conducted to examine the relationships between the independent variables a) attitudes, b) subjective norms, c) self-efficacy, d) perceived behavioral control) and the dependent variable of alcohol and/or substance use behavioral intentions. These regression analyses were used to determine if relationship existed between the independent variables and the outcome (alcohol and/or substance use behavioral intentions).

An independent t test and one-way between subject ANOVA were performed. This is an appropriate analysis for testing the relationships and differences between the socio-demographic characteristics (categorical levels) and TPB constructs scale (interval level).

Next, hierarchical multiple regression analysis was completed to construct a model of the significant TPB constructs and socio-demographic variables for purposes of examining predictors. The significant TPB constructs and socio-demographic variables were the independent variables and alcohol and/or substance use behavioral intentions was the dependent variable.

Then, OCSs' knowledge was tested in a mediation analysis PROCESS macro that "uses an ordinary least square or logistic regression-based path analytical framework for estimating direct and indirect effects on simple and multiple mediator models" (Hayes & Scharkow, 2013). Possible mediation effects of OCSs' knowledge and their relationship to differences in attitudes,

subjective norms, self-efficacy, perceived behavioral control, and alcohol and/or substance use behavioral intentions were explored.

Lastly, a logistic regression analysis was conducted to test the predictive strength of OCSs' alcohol and/or substance use behavioral intentions (independent variable) on alcohol and/or substance use in past 30 days (dependent variable).

CHAPTER IV

RESULTS

The purpose of this study was to: a) identify knowledge, attitudes, subjective norms, self-efficacy, and perceived behavioral control associated with alcohol and/or substance usage pattern among OCSs; b) identify behavioral intentions for alcohol and/or substance use among OCSs; and c) facilitate the development of culturally relevant evidenced-based interventions for Omani young people by communicating study findings to policymakers and healthcare program leaders.

The study aims were to: a) obtain preliminary data on alcohol and substance use behaviors among OCSs and b) examine the role of knowledge in mediating alcohol and/or substance use behavioral intentions among OCSs. The dependent variable was alcohol and/or substance use behavioral intentions among OCSs. The independent variables were the socio-demographic characteristics a) age, b) gender, c) father's educational level, d) mother's educational level, e) family income, f) student grades, g) college type, h) live on or off campus, i) region of permanent residence, j) religiosity, k) sharing thoughts/feelings/plans with parents) and the TPB constructs; a) attitudes, b) subjective norms, c) self-efficacy, and d) perceived behavioral control.

Students were recruited from Omani HEIs. OCSs were contacted via e-mail about the possibility of participation in the study. A total of 428 OCSs responded to the online survey. Nineteen surveys were excluded; 2 surveys were discarded because the potential participants did not meet the eligibility criteria. Additionally, 17 surveys were discarded because 75% of survey questions were not completed. Thus, the final sample size was 409 (see Figure 3).

Results of the study include socio-demographic characteristics of OCSs and the findings from the analysis of responses to survey questions.

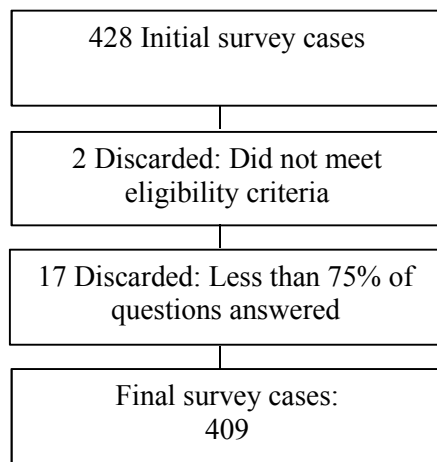


Figure 5. Survey Case Deletion

Description of Sample

Of a total 409 OCSs, females accounted for slightly more respondents ($n=222$, 54.8%) than males ($n=185$, 45.2%). The majority of OCSs (86.1%) were between 18 and 24 years of age (mean=21.99, range = 18-47). Fathers' educational level and mothers' education level of the OCSs were similar except for those with college degrees; more OCSs reported having fathers with a college educational level (25%) as compared with mothers with a college educational level (13.9%). The majority (53.3%) of the OCSs reported they were from families with high incomes (i.e. OMR 3000 and above [US \$7,789]).

OCSs' grades were reported as "A&B" (20.3%), "B&C" (36.2%), "C&D" (42.5%), and "D&F" (1%). Most OCSs were enrolled in public HEIs (81.2%), and 82.9% lived off campus. OCSs were from three regions of Oman: Dhofar (39.6%), Muscat (20.5%), and North & South Batinah (39.9%).

Additionally, OCSs were asked to provide information about their religiosity and how often they shared their thoughts/feelings/plans with their parents. Most indicated that they often

shared their thoughts/feelings/plans with their parents (43.3%), followed by sometimes shared (26.2%), very often shared (18.1%), rarely shared (10.3%), and never shared (2.2%). Finally, OCSs were asked to rank their religiosity on a scale of not religious to very religious. Most reported that they were often religious (49.4%), more religious (36.4%), very religious (6.1%), and somewhat religious (5.4%). Only 2.7% responded that they were not religious (see Table 2).

Table 2. *Socio-Demographic Characteristics (N=409)*

Characteristics	<i>n</i>	%
Age		
18-24	352	86.1
25+	57	13.9
Gender		
Male	182	45.2
Female	224	54.8
Father's Educational Level		
< High school	251	61.4
College degree	104	25.4
Master degree	40	9.8
Doctoral degree	14	3.4
Mother's Educational Level		
< High School	317	77.5
College degree	57	13.9
Master degree	30	7.3
Doctoral degree	5	1.2
Family Income		
Low	93	22.7
Middle	98	24.0
High	218	53.3
Student Grades		
A & B	83	20.3
B & C	148	36.2
C & D	174	42.5
D & F	4	1.0

Table 2 Continued

Characteristics	<i>n</i>	%
College Type		
Public	332	81.2
Private	36	8.8
live on campus		
No	339	82.9
Yes	70	17.1
Region of Permanent Residence		
Dhofar	162	39.6
Muscat	84	20.5
North & South Batinah	163	39.9
Religiosity		
Not religious	11	2.7
Somewhat religious	22	5.4
Often religious	202	49.4
More religious	149	36.4
Very religious	25	6.1
Sharing Thoughts/Thoughts & Feelings/Plans with Parents		
Very often	74	18.1
Often	177	43.3
Sometimes	107	26.2
Rarely	42	10.3
Never	9	2.2

Note. *n* = Numbers of responses

Table 3 presents the range and mean scores for the TPB constructs including a) attitudes, b) subjective norms, c) self-efficacy, d) perceived behavioral control, and e) behavioral intentions mean scores for TPB constructs on a 5-point Likert scale, ranged from 5.15 to 33.36. The higher the score, the greater the score for attitudes, subjective norms, self-efficacy, perceived behavioral control and behavioral intention. For OCSs, the mean score for self-efficacy was the highest (mean= 33.36, SD= 8.01).

Table 3. Range and Mean Scores for the TPB Constructs

<i>Constructs</i>	<i>n</i>	Minimum	Maximum	Mean	Std. Deviation
Attitudes	376	9.0	66.0	29.73	9.37
Subjective Norms	368	12.0	49.0	21.59	8.76
Self-Efficacy	356	2.0	61.0	33.36	8.01
Perceived Behavioral Control	354	2.0	14.0	7.15	3.88
Behavioral Intentions	385	4.0	20.0	5.15	2.42

Note. *n* = Numbers of Responses

Prevalence Rate Results

RQ1. What was the prevalence rate, in the past 30 days, for alcohol and/or substance use among OCSs?

A total of nine OCSs reported that they had consumed alcohol (2.3%), and 66 OCSs reported that they had used substances (19%) in the last 30 days. The overall prevalence rate for alcohol and/or substance use in the past 30 days was 3.2% (see Table 4).

RQ2. What was the lifetime prevalence rate for alcohol and/or substance use among OCSs?

The lifetime prevalence rate of alcohol and/or substance use lifetime was 15.6%. Regarding lifetime use, the prevalence of tobacco smoking was highest 9.5% (see Table 4).

Table 4. *Profile of Alcohol and/or Substance Use Among OCSs*

Substances	% of 30 Days Use	% of Lifetime Use
Alcohol Use	1	1.2
Tobacco Smoking	1.7	9.5
Marijuana	.5	2
Cocaine	0	.2
Inhalants	0	1.5
Other substances	0	1.2

Simple Regression Results

RQ3. Is there a relationship between OCSs' attitudes, subjective norms, self-efficacy, perceived behavioral control and alcohol and/or substance use behavioral intentions?

Prior to conducting any statistical analyses, scale variables were created for the theoretical constructs. Cronbach's alpha (α) was calculated to test the internal consistency of each TPB construct scale (Sullivan, 2011). A subscale that displayed a coefficient between .70 and .90 is considered to have a strong internal consistency (Ott & Longnecker, 2010). The ASUS-OCS reliability ranged from moderate to strong for all TPB constructs: a) attitudes, b) subjective norms, c) self-efficacy, d) perceived behavioral control, and e) behavioral intentions. Table 5 presents the internal consistency scores for subscales that measured knowledge and TPB constructs.

Table 5 *Internal Consistency of the Knowledge and TPB Subscales (N=409)*

Scale	Number of Items	Cronbach's Alpha
Attitudes	18	.82
Subjective Norms	12	.93
Self-Efficacy	16	.70
Perceived Behavioral Control	2	.88
Knowledge	5	.60
Behavioral Intentions	4	.60

To answer RQ3, the investigator examined the relationship between attitudes, subjective norms, self-efficacy, and perceived behavioral control as predictors to one criterion variable (behavioral intentions). Alpha was set at $p < .05$. The theory of planned behavior suggests that attitudes, subjective norms, self-efficacy, and perceived behavioral control should predict OCSs' behavioral intentions to use alcohol and/or substances. Four simple linear regression analyses with one criterion variable (alcohol and/or substance use behavioral intentions) and one predictor variable (attitudes, subjective norms, self-efficacy and perceived behavioral control) were performed.

The first analysis tested if the attitudes significantly predicted alcohol and/or substance use behavioral intentions. Attitudes significantly predicted alcohol and/or substance use behavioral intentions ($\beta = .105$, $p < .05$) and explained 16% of the variance (Adjusted $R^2 = .163$, $F [1, 375] = 74.19$, $p < .05$) (see Table 6).

Table 6. *Simple Regression Analyses for OCSs Attitudes as a Predictor for Alcohol and/or Substance*

Variables	Unstandardized Coefficients		Standardized Coefficients	<i>t</i>	sig
	β	Std. Error	Beta		
(Constant)	2.04	.378		5.415	.000
Attitude	.105	.021	.406	8.614	.000*

(N=409), Note. * $p < .05$.

The second simple regression analysis tested if the subjective norms significantly predicted OCSs' alcohol and/or substance use behavioral intentions. The results of the regression analysis indicated that subjective norms significantly predicted alcohol and/or substance use

behavioral intentions ($\beta = .052$, $p < .05$ and explained 3% of the variance (Adjusted $R^2 = .032$, $F [1, 366] = 13.31$, $p < .05$) (see Table 7).

Table 7. *Simple Regression Analyses for OCSs Subjective Norms as a Predictor for Alcohol and/or Substance Use Behavioral Intentions*

Variables	Unstandardized Coefficients		Standardized Coefficients	<i>t</i>	sig
	β	Std. Error	Beta		
(Constant)	4.04	.331		12.20	.000
Subjective Norms	.052	.014	.187	3.649	.000*

($N=409$), Note. * $p < .05$.

The third simple regression analysis examined if the self-efficacy significantly predicted OCSs alcohol and/or substance use behavioral intentions. The results of the regression analysis indicated that self-efficacy significantly predicted alcohol and/or substance use behavioral intentions ($\beta = .078$, $p < .05$) and explained 6% of the variance (Adjusted $R^2 = .061$, $F [1, 353] = 24.06$, $p < .05$). (see Table 8).

Table 8. *Simple Regression Analyses for OCSs Self-Efficacy as a Predictor for Alcohol and/or Substance Use Behavioral Intentions*

Variables	Unstandardized Coefficients		Standardized Coefficients	<i>t</i>	sig
	<i>B</i>	Std. Error	Beta		
(Constant)	2.52	.546		4.627	.000
Self-efficacy	.078	.016	.253	4.905	.000*

($N=409$), Note. * $p < .05$.

The fourth simple regression analysis tested if the perceived behavioral control significantly predicted alcohol and/or substance use behavioral intentions. Perceived behavioral

control did not significantly predict alcohol and/or substance use behavioral intentions ($\beta = .011$, $p = .743$) and accounted for zero variance (Adjusted $R^2 = -.003$, $F [1, 351] = .10$, $p = .743$) (see Table 9).

Table 9. *Simple Regression Analyses for OCSs Perceived Behavioral Control as a Predictor for Alcohol and/or Substance Use Behavioral Intentions*

Variables	Unstandardized Coefficients		Standardized Coefficients	<i>t</i>	sig
	β	Std. Error	Beta		
Constant)	5.04	.270		18.685	.000
Perceived Behavioral Control	.011	.033	.017	.328	.743

(N=409), Note. * $p < .05$.

Socio-Demographic Characteristics

RQ 4. Are there any differences between socio-demographic characteristics of OCSs and their attitudes, subjective norms, self-efficacy, perceived behavioral control, and alcohol and/or substance use behavioral intentions?

An analyses was conducted using independent sample t-test and one-way between subject ANOVA to determine if significant differences existed between the 11 socio-demographic variables: a) age, b) gender, c) father's educational level, d) mother's educational level, e) family income, f) student grades, g) college type, h) live on or off campus, i) region of permanent residence, j) religiosity, and k) sharing thoughts/feelings/plans with parents and OCSs' a) attitudes, b) subjective norms, c) self-efficacy, d) perceived behavioral control, and alcohol and/or substance use behavioral intentions.

Independent sample t-tests were used to examine the two-category socio-demographic variables, while one-way between subject ANOVA was used for socio-demographic

characteristics with more than two categories. Alpha level was set at $p < .05$ for all statistical tests.

Age, gender, college type, and live on or off campus were two-category variables, thus t-tests were performed. The results of the independent sample t-test analysis indicated that there were significant differences between age, gender and college type. Age and college type were significant for a) subjective norms (age [25+], $t = -2.09$, $p < .05$; college type [public], $t = 3.18$, $p < .05$) and b) behavioral intentions (age [25+], $t = -2.06$, $p < .05$; college type [private], $t = -1.61$, $p < .05$) (see Table 10).

Table 10. Means and Standard Deviation by Age and College Type

Constructs	Age				College Type			
	18-24		25+		Public		Private	
	M	SD	M	SD	M	SD	M	SD
Attitudes	29.68	9.24	30.03	10.30	29.04	9.18	31.53	11.25
Subjective Norms	21.21	8.50	24.00*	10.04	21.10*	8.63	16.77	7.04
Self-Efficacy	33.21	7.74	34.28	9.51	32.83	8.30	34.30	9.58
Perceived Behavioral Control	7.12	3.91	7.32	3.76	7.25	3.87	6.83	3.07
Behavioral Intentions	5.05	2.38	5.84*	2.61	5.06	2.20	6.15*	3.80

Note * $p < .05$.

Male gender was significant for a) attitudes ($t = 2.59$, $p < .05$), b) subjective norms ($t = 3.97$, $p < .05$), d) self-efficacy ($t = 2.40$, $p < .05$), and e) perceived behavioral control ($t = 2.69$, $p < .05$) (see Table 11).

No significant differences were associated with living on or off campus a) attitudes ($t = -1.170$, $p = .24$), b) subjective norms ($t = 1.99$, $p = .05$), c) self-efficacy ($t = .590$, $p = .55$), or d) perceived behavioral control ($t = -.637$, $p = .52$).

Table 11. *OCSs' Means and Standard Deviation by Gender*

Constructs	Gender			
	Male	Female	M	SD
Attitudes	31.11*	10.22	28.57	8.45
Subjective Norms	23.52*	9.16	19.95	8.08
Self-Efficacy	34.45*	7.26	32.44	8.49
Perceived Behavioral Control	7.75*	3.97	6.64	3.75
Behavioral Intentions	5.26	2.46	5.06	2.39

Note * $p < .05$.

One-way between subject ANOVAs were performed for seven socio-demographic variables with three or more categories including a) father's educational level, b) mother's educational level, c) family income, d) student's grades, e) region of permanent residence, f) religiosity, and g) sharing thoughts/feelings/plans with parents.

The results of the one-way between subject ANOVA indicated that there were no significant differences for mother's education level (i.e., less than high school, college degree, master degree, and doctoral degree) on OCSs' a) attitudes ($F [3, 372] = .086, p = .97$), b) subjective norms ($F [3, 364] = .996, p = .39$), c) self-efficacy ($F [3, 352] = .920, p = .43$), d) perceived behavioral control ($F [3, 350] = .655, p = .58$) and e) alcohol and/or substance use behavioral intentions ($F [3, 381] = 3.98, p = .38$).

However, significant differences ($p < .05$) were found between a) father's educational level, b) family income, c) student's grades, d) region of permanent residence, e) religiosity, and f) sharing thoughts/feelings/plans with parents and OCSs' a) attitudes, b) subjective norms, c) self-efficacy, and d) perceived behavioral control and e) alcohol and/or substance use behavioral intentions.

Post hoc analyses were performed using a Tukey test to explore the detailed differences

between statistically significant socio-demographic characteristics and OCSs' a) attitudes, b) subjective norms, c) self-efficacy, d) perceived behavioral control, and e) alcohol and/or substance use behavioral intentions. Regarding parental educational level, there were significant differences in subjective norms ($F [3, 364] = 7.707, p < .05$) related to father's education level (i.e., less than high school, college degree, master degree, and doctoral degree). Tukey test indicated that the mean scores for less than high school degree ($M = 23.20, SD = 8.99$) was significantly different than the mean scores for college degree ($M = 19.50, SD = 7.24$), master degree ($M = 17.45, SD = 7.87$), and doctoral degree ($M = 18.41, SD = 10.35$). Namely, those OCSs whose fathers had less than a high school education had higher mean subjective norms scores for alcohol and/or substance use behavioral intentions.

OCSs were grouped by family income (i.e. low, OMR 200 to 500/month; middle, OMR 600 to 2000/month; and high, OMR 3000 and above/month). Significant differences in a) attitudes ($F [2, 373] = 3.98, p < .05$) and b) subjective norms ($F [2, 365] = 35.44, p < .05$) were found in OCSs with high family income. The results indicated that OCSs from families with high incomes had higher positive attitudes and higher subjective norms scores.

There were significant differences between OCSs' grades (e.g., A& B, B&C, C&D, or D&F) by their a) subjective norms ($F [2, 365] = 11.03, p < .05$) and b) alcohol and/or substance use behavioral intentions ($F [2, 382] = 7.90, p < .05$). Specifically, OCSs who reported their grades to be A&B significantly differed in their mean scores from those students who reported grades of B&C, C&D and D&F. These results indicate that OCSs with higher grades had lower scores for subjective norms and alcohol and/or substance use behavioral intentions.

OCSs' were from three regions (i.e., Dhofar, Muscat, and North & South Batinah). Those OCSs from the North & South Batinah region had significantly different mean scores for a)

attitudes ($F [2,373] = 3.312, p < .05$), b) subjective norms scores ($F [2,365] = 33.251, p < .05$), c) self-efficacy ($F [2,353] = 4.637, p < .05$), and d) and behavioral intentions ($F [2,382] = 4.911, p < .05$) when compared with the students from the other two regions. There were no significant differences in perceived behavioral control [$F (2, 351) = .175, p = .84$] (see Table 12).

Table 12. *Differences in TPB Constructs by Family Income, Student Grades and Region of Permanent Residence*

Characteristics	Attitudes	Subjective Norms	Self-Efficacy	Perceived Behavioral Control	Behavioral Intentions
	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)
Family Income					
Low	27.58 (7.355)	16.64 (5.58)	31.44(8.89)	6.76(3.25)	5.13(1.86)
Middle	29.04 (9.28)	18.65 (6.98)	33.61(10.54)	7.39(3.67)	5.54(2.88)
High	30.87(9.97)*	24.68(9.16)*	33.98(6.11)	7.19(4.19)	5.00(2.40)
Student Grades					
A & B	29.73(9.37)	23.10(9.06)*	33.33(6.83)	7.22(4.12)	4.79(2.05)*
B & C	29.58(9.91)	19.03 (7.55)	33.57(9.88)	6.94(3.37)	5.80 (2.88)
C & D	-----	-----	-----	-----	-----
D & F	32.0(2.64)	13.00 (1.73)	10.11(5.84)	9.33(4.04)	5.25 (2.50)
Region of Permanent Residence					
Dhofar	30.10 (8.98)	23.86 (8.56)	34.26 (6.39)	7.01(3.98)	4.72(1.77)
Muscat	31.56 (10.81)	24.92 (8.82)	34.42 (6.76)	7.28(4.15)	5.20(2.59)
North & South Batinah	28.30(8.76)*	17.16(7.03)*	31.64(9.98)*	7.24(3.62)	5.58(2.82)*

Note * $p < .05$. M = Mean; SD = Standard Deviation.

In terms of religiosity, one-way ANOVA analyses indicated that there were significant differences in mean scores for a) attitudes ($F [4,371] = 3.987, p < .05$), b) subjective norms ($F [4,363] = 6.657, p < .05$), and c) alcohol and/or substance use behavioral intentions ($F [4,380] = 6.229, p < .05$) among OCSs who reported that they were not religious when compared with those who reportedly were often religious, more religious, somewhat religious, and very religious. Post hoc analyses revealed higher mean scores for subjective norms and behavioral intentions among

OCSs' who reportedly were not religious when compared with those who were often religious, more religious, somewhat religious, and very religious (see Table 13). Mean scores for attitudes were significantly higher for those OCSs' who responded that they were somewhat religious when compared to those in all other religiosity categories.

There were significant differences in subjective norms mean scores ($F [2,365] = 13.44, p < .05$) related to the sharing their thoughts/feelings/plans with parents (e.g., never, rare, sometimes, often, very often). and Further analysis revealed that students who often shared their thoughts/feelings/plans with parents ($M = 22.97, SD = 8.50$) were significantly different when compared to those who responded that they very often shared ($M = 17.70, SD = 8.05$).

Table 13. *Differences in Attitudes, Subjective Norms and Behavioral Intentions by Religiosity*

Response Categories	<i>Attitudes</i> <i>M (SD)</i>	<i>Subjective Norms</i> <i>M (SD)</i>	<i>Self-Efficacy</i> <i>M (SD)</i>	<i>Behavioral Intentions</i> <i>M SD</i>
Not Religious	33.3(11.80)	26.28 (15.79)*	38.20 (10.47)	8.00 (5.68)*
Somewhat Religious	37.15(13.20)*	21.26 (5.52)	33.842 (10.56)	6.90 (4.02)
Often Religious	29.69 (9.38)	23.55 (8.75)	34.01 (6.19)	4.95 (2.07)
More Religious	28.50 (7.57)	18.97 (7.86)	32.20 (9.54)	5.03 (2.17)
Very Religious	29.95 (12.10)	18.95 (9.29)	32.20 (8.35)	5.00 (2.00)

Note * $p < .05$; M = Mean; SD = Standard Deviation.

Hierarchical Regression Results

RQ 5. Is there an overall relationship between socio-demographic characteristics, attitudes, subjective norms, self-efficacy, perceived behavioral control, and behavioral intentions among OCSs?

A hierarchical multiple regression analysis was conducted to explore if TPB constructs and socio-demographic variables predicted OCSs' alcohol and/or substance use behavioral intentions. Evidence had associated college students' alcohol and/or substance use attitudes, subjective norms, self-efficacy, and perceived behavioral control with behavioral use intentions

(Bashirian, Hidarnia, Allahverdipour, & Hajizadeh, 2012; Collins et al., 2011; Gallucci, Martin, Beaujean, & Usdan, 2015; Rhodes & Clinkinbeard, 2013). Selected socio-demographic variables that were significant for relationships during previous analyses were used as test variables.

Therefore, the TPB constructs a) attitudes, b) subjective norms, and c) self-efficacy were entered in the first step of the regression model. Then, socio-demographic variables d) age, e) gender, f) father's educational level, g) family income, h) student grades, i) college type, j) region of permanent residence, k) religiosity, and l) sharing thoughts/feelings/plans with parents were entered in the second step of the regression model. The outcome variable was the OCSs' alcohol and/or substance use behavioral intentions.

Prior to conducting a hierarchical multiple regression analysis, the data were screened for normality, linearity, and outliers. Normality was demonstrated through construction of a *P-P* probability plot and histogram. The histogram of standardized residuals indicated that the data contained approximately normally distributed error, as did the normal *P-P* plot of regression standardized residuals, which showed points that were not completely on the line but close (see Appendix K). Outliers were not observed on a scatter plot graph for the independent variables. Additionally, an analysis of standardized residuals was carried out, which showed that the data contained no outliers (Std. Residual Min = -2.49, Std. Residual Max = 2.43, Mean = .000), while Cook's distance was (Min = .000, Max = .409). The data met the assumption of independent error (Durbin-Watson value = 1.74). Collinearity was measured by variance inflation factor (VIF), which assess how much the variance of an estimated regression coefficient increases if the predictors are correlated. No high correlation was found between all the predictors. (see Table 14)

Table 14. *Hierarchical Multiple Regression Collinearity Results*

Variables	Unstandardized Coefficients		<i>t</i>	Sig.	Collinearity Statistics	
	B	Std. Error			Tolerance	VIF
(Constant)	1.169	1.322	.885	.377		
Attitudes	.095	.014	6.925	.000	.782	1.278
Subjective Norm	.045	.018	2.559	.012	.554	1.803
Self Efficacy	.033	.016	2.116	.038	.780	1.280
Age	1.11	.346	3.240	.001	.821	1.217
Gender	.409	.261	1.666	.119	.737	1.320
Student grades	-.496	.233	-2.127	.034	.833	1.200
College type	.399	.422	.954	.345	.843	1.187
Region of permanent residence	.475	.188	2.546	.012	.756	1.323
Religiosity	-.351	.163	-2.140	.033	.845	1.184
Father's education level	.639	.160	3.962	.000	.763	1.310
Family income	-.375	.175	-2.142	.033	.609	1.641
Sharing thoughts/feelings/plans with parents	-.077	.187	-.410	.682	.887	1.128

The hierarchical multiple regression revealed that at step one of the regression model: a) attitudes b) subjective norms, and c) self-efficacy contributed significantly to the regression model ($F [3,310] = 26.531, p < .05$) and accounted for 19.7% of the variation in OCSs' alcohol and/or substance use behavioral intentions. In step two of the regression model, d) age, e) gender, f) father's educational level, g) family income, h) student grades, i) college type, j) region of permanent residence, k) religiosity, and l) sharing of thoughts/feelings/plans with parent's variables explained an additional 30% of variation in OCSs alcohol and/or substance use behavioral intentions ($F [12,301] = 12.178, p < .05$). Together, the 12 independent variables accounted for 49.7% of the variance for OCSs' alcohol and/or substance use behavioral intentions. Coefficient results indicated that a) attitudes ($\beta = .370, t = 6.91, p < .05$), b) subjective norms ($\beta = .161, t = 2.53, p < .05$), c) self-efficacy ($\beta = .112, t = 2.08, p < .05$), d) age ($\beta = .168, t = 3.22, p < .05$), e) region of permanent residence ($\beta = .137, t = 2.52, p < .05$), f) father's educational level ($\beta = .216, t = 3.99, p < .05$), g) religiosity ($\beta = -.110, t = -2.14, p < .05$), h)

family income student ($\beta = -.130, t = -2.14, p < .05$), and i) student grades ($\beta = -.111, t = -2.13, p < .05$) were the predictors that demonstrated a significant effect ($B = 1.399, t = 1.09, p < .05$). However, gender ($\beta = .085, t = 1.565, p = .11$), college type ($\beta = .049, t = .947, p = .34$), and sharing of thoughts/feelings/plans with parents ($\beta = -.021, t = -.412, p = .68$) were not significant predictors of OCSs alcohol and/or substance use behavioral intentions in the final model.

The results of the hierarchical multiple regression analyses are presented in Table 15.

Table 15. *Hierarchical Multiple Regression Results (N= 314)*

Model	R	R ²	Adjusted R ²	Change Statistics					Durbin-Watson
				R ² change	F change	df1	df2	Sig. F change	
1	.452 ^a	.204	.197	2.158	.204	26.531	3	310	
2	.572 ^b	.327	.300	2.014	.123	6.088	9	301	1.742

a. Predictors: (constant), attitudes, self-efficacy, and subjective norms

b. Predictors: (constant), attitudes, self-efficacy, and subjective norms, age, gender, father educational level, family income, college type, student grades, religiosity, sharing thoughts/feelings/plans with parents, and region of permanent residence

c. Dependent Variable: Alcohol and/or substance use behavioral intentions

Mediation Results

RQ 6. Does OCSs' knowledge about alcohol and/or substance use mediate the effects of the TPB constructs on alcohol and/or substance use behavioral intentions?

The purpose of the analysis for RQ 6 was to examine if knowledge mediated (M) the relationship between the TPB constructs (**a**) attitudes, **b**) subjective norms, **c**) self-efficacy and **d**) perceived behavioral control (independent variables) and alcohol and/or substance use behavioral intentions (dependent variable). The mediation model was tested using the SPSS PROCESS macro provided by Hayes & Scharkow (2013) (see Table 16).

Knowledge scores for alcohol and/or substance use were summed; the higher the sum the more knowledge about alcohol and/or substance use ($M = 4.44$, $SD = 1.58$, $Range = 0-5$).

Knowledge exerted an insignificant indirect effect on the relationship between attitudes and alcohol and/or substance use behavioral intentions ($ab = -.000$, $BCa\ CI [-.0068, .0042]$). The mediation effect of knowledge accounted for 10% of the total effect $P_M = -.0090$ between OCSs attitudes and alcohol and/or substance use behavioral intentions.

Knowledge also exerted an insignificant indirect effect on the relationship between subjective norms and alcohol and/or substance use behavioral intentions ($ab = -0.000$, $BCa\ CI [-.0111, .0102]$). Knowledge accounted for 5% of the total effect $P_M = -.0063$. In addition, knowledge exerted an insignificant indirect effect on the relationship between self-efficacy on alcohol and/or substance use behavioral intentions ($ab = -0.002$, $BCa\ CI [-.0061, .0050]$).

Knowledge accounted for 7% of the total effect $P_M = -.0036$. Finally, knowledge exerted an insignificant indirect effect on the relationship between perceived behavioral control on alcohol and/or substance use behavioral intentions composite ($ab = 0.000$, $BCa\ CI [-.0041, .0054]$). Knowledge accounted for 1% of the total effect $P_M = .0055$.

Table 16. *Results of Mediation Model*

Model	Coefficient	R^2	Df	t	p
Attitudes	.0317	.0358	374.00	3.680	.000
Subjective norms	.0538	.0890	366.00	6.80	.000
Self-efficacy	.0314	.0246	353.00	3.21	.004
Perceived Behavioral Control	.001	.000	351.00	.051	.958

Note * $p < .05$; $N = 40$

Logistic Regression Results

RQ 7. Do the behavioral use intentions of OCSs predict alcohol and/or substance use in the past 30 days?

TPB suggests that there is a strong prediction relationship between behavioral intentions and behaviors (Ajzen, 1991). Therefore, a binary logistic regression was conducted to predict OCSs' alcohol and/or substance use in the past 30 days using OCSs' alcohol and/or substance use behavioral intentions as predictor. Results of the binary logistic regression analyses are presented in Table 17, which provides results of the Hosmer and Lemeshow Goodness-of-Fit Test for the model. The Hosmer and Lemeshow Goodness-of-Fit test compares the frequencies of alcohol and/or substance user and non-alcohol and/or substance user in the regression model. Hosmer and Lemeshow Goodness-of-Fit Test is also an indicator of the extent to which the predictor variable account for variance within the outcome variable.

Table 17. *Reported Alcohol and/or Substance Use: Hosmer & Lemeshow-Goodness-of-Fit Test*

Chi –square	df	sig
1.05	2	.59

A test of the full model against a constant-only model was statistically significant, indicating that the predictor reliably distinguished between alcohol and/or substance used and not-used ($\chi^2 = 24.88, p = .00$ with $df = 1$). This result implies that the regression model had a good fit to the data. See Table 18 for the model summary including Cox and Snell R²—an

estimate of the strength of association between OCSs' alcohol and/or substance use behavioral intentions (predictor) and the OCSs' alcohol and/or substance use in the past 30 days (outcome).

Table 18. *Alcohol and/or Substance Use Regression Model Summary*

-2 Log likelihood	Cox & Snell R Square	Negelkerke R Square
264.73	.06	.11

Negelkerke R^2 of .11 indicated a relationship between predictor and outcome. Success overall prediction was 88% (99% for not-used and 10% for use). The Wald criterion demonstrated that alcohol and/or substance use behavioral intentions made a significant contribution to prediction ($p < .05$). Alcohol and/or substance use behavioral intentions was significant in the logistic regression model to the extent that scoring high in alcohol and/or substance use behavioral intentions raised the odds of using alcohol and/or substance to (odds ratio (OR) = 1.29; 95% confidence interval (CI) = 1.167-1.429; $p < .05$) (see Table 19)

Table 19. *Binary Logistic Regression Model of OCSs Alcohol and/or Substance Use Behavioral Intentions and Alcohol and/or Substance Use 30 Day Prevalence*

Predictor variable	Odds Ration	95% Confidence Interval		p
		lower	Upper	
Behavioral Intention	1.291	1.167	1.429	.000
Constant	.033			.000

Note * $p < .05$.

CHAPTER V

DISCUSSION

OCSs are at a growing risk for alcohol and/or substance use and associated health issues. Although, programming aimed at preventing alcohol and/or substance use has been implemented in Oman, there is a paucity of research about the predictors of alcohol and/or substance use among OCSs. Evidence is needed to inform the design of culturally relevant programming and interventions. The current study investigated alcohol and/or substance use behavioral intentions and behaviors in a sample of 409 OCSs. A cross-sectional survey design was used to explore OCSs' knowledge, attitudes, subjective norms, self-efficacy, perceived behavioral control, and their alcohol and/or substance use behavioral intentions and use behaviors. An analysis of OCSs' socio-demographic characteristics was also conducted. These included a) age, b) gender, c) father's educational level, d) mother's educational level, e) family income, f) student grades, g) college type, h) live on or off campus, i) region of permanent residence, j) religiosity, and k) sharing thoughts/feelings/plans with parents.

The results of our study make a significant contribution to the limited evidence about alcohol and/or substance use behavioral intentions and use behaviors among OCSs. They provide empirical evidence about socio-demographic characteristics and TPB constructs as predictors of alcohol and/or substance use behavioral intentions among OCSs. Most importantly, given the need for valid and reliable measures, the survey instrument used for this study may also be used to collect data about alcohol and/or substance use among other Omani young adults.

Major Findings

The 30-day and lifetime alcohol and/or substance use prevalence rates found among OCSs support and extend previous research findings. In our sample, the 30-day and lifetime prevalence rates were 3.2 % and 15.9% respectively, as compared to prevalence rates reported in other GCC countries which ranged from 13% to 52% (Almogbel et al., 2012; Gupta et al., 2013; Karimy et al., 2013; Osman et al., 2016). However, when compared to earlier studies of alcohol and/or substance use among Omani populations (4% to 15%) (Al Riyami et al., 2004; Jaffer et al., 2006; Moh'd Al-Mulla et al., 2008; Zaidan et al., 2007), the overall lifetime prevalence rate for our sample was slightly higher. The 30-day use prevalence rate for alcohol (1%) in our study was consistent with what the WHO reported for alcohol use among other GCC college students, including Egypt (0.44%), Jordan (0.32%), and Saudi Arabia (0.32%) (WHO, 2012). In our study, the substance use prevalence rate was 2.2% as compared to prevalence rates for substance use in Egypt (1.3%), Jordan (0.01%), and Saudi Arabia (0.63%) (WHO, 2012).

Among our sample, tobacco (9.5%) and hashish (2%) were the most commonly used substances. Our results aligned with the results of a recent meta-analyses of the most commonly used substances other GCC countries: amphetamines (4-70.7%), heroin (6.6-83.6%), alcohol (9-70.3%) and hashish (1-60%) (Sweileh et al., 2014).

Socio-demographic Characteristics of OCS

Our study was a novel effort targeted at exploring potential differences and associations between OCSs socio-demographic characteristics and alcohol and/or substance use related attitudes, subjective norms, self-efficacy, perceived behavioral control, and behavioral intentions.

There were no significance differences in the attitudes, subjective norms, self-efficacy, perceived behavioral control, and alcohol and/or substance use behavioral intentions of those students who lived off campus (82.9%) when compared with those who lived on campus. Our findings may have been skewed by the fact that the majority of our sample lived off campus. There has been previous work that looked at substance use behavior in the context of living on or off campus. For example, Atwoli et al. (2011) found that substance use behavior for college students who lived on campus (59.7%) were not significantly different from those who lived off campus. Research has also indicated that certain university residences, such as sorority and fraternity houses, facilitate college students' alcohol and/or substance consumption through the social influence of peers in these settings (Larimer et al., 2004; Page & O' Hegarty, 2006). In our study, a possible explanation of lack differences in the alcohol and/or substance use behavioral intentions may be related to the fact that in Omani culture, students who lived off campus were monitored by their families, thus had less freedom and more social activities with family and community.

In regard to parental educational level, we also did not find any differences in alcohol and substance use-related attitudes, subjective norms, self-efficacy, perceived behavioral control, alcohol and/or substance use behavioral intentions related to mother's educational level. The majority of the OCSs (77.5%) reported that their mother's educational level was less than a high school degree. These findings may be explained by Omani family norms; females often get married around the time they reach puberty. In 2004, 15% of Omani female adolescents aged 15-20 years old were married. This is much higher than has been reported than other GCC countries (Al-Barwani et al., 2007; Al Riyami, Afifi & Mabry, 2004). However, there was a significant difference in subjective norms among those OCSs who reported that their fathers had less than a

high school degree. This finding was not surprising; in Omani society, fathers hold higher authority and decision-making power. Regardless of the father's educational level, his authority and position as head of the family is valued and respected (Al-Barwani et al., 2007).

There was a difference related to age; those OCSs in our study who were aged 25 years and older had significantly higher scores for alcohol and/or substance use-related attitudes and behavioral use intentions when compared with the alcohol and/or substance use-related attitudes and behavioral use intentions of those aged 18 to 24 years. This finding might be explained by the fact that older OCSs may be employed and have more financial independence. This also may imply that OCSs alcohol and/or substance use prevalence rates, in general, increase with age.

In terms of gender, male OCSs scored significantly for higher alcohol and/or substance use-related attitudes, subjective norms, and self-efficacy when compared with females OCSs. The link between gender and alcohol and/or substance use related attitudes, subjective norms, and self-efficacy has been intensively explored in the EMR countries as well as GCC countries (Almogbel et al., 2012; Bashirian et al., 2012; Obaid et al., 2015). Our findings are consistent with studies done in other GCC countries, where male gender was associated with higher alcohol and/or substance use behaviors such as tobacco smoking (WHO, 2012). In addition, Jaffer et al. (2006) concluded that Omani male high school students were more likely than females to practice alcohol and/or substance use behavior; 4.6 % (6.4% males, 2.9% females) were current smokers, and 14.9% (26.2% males, 3.8% females) had ever smoked, while 4.3% (6.6% males, 2.0% females) had drunk alcohol and 4.6% (7.2% males, 2.2% females) had been persuaded to take drugs by their peers. The association between male gender and tobacco use may be explained by the fact that smoking is a more acceptable social behavior for males and, thus, may be underreported by female students (Al-Lawati et al., 2003; Jaffer et al., 2006).

In our study, those OCSs with more financial stability expressed positive attitudes about and higher peer influences to engage in alcohol and/or substance use behavior. Notably, there was a relationship between income level and differences in OCSs' alcohol and/or substance use behavioral intentions as regards their attitudes and subjective norms. Those OCSs with reportedly high incomes (OMR 3000 and above per month) had higher scores for alcohol and/or substance use-related attitudes and subjective norms when compared with those with low and middle family income. Evidence has indicated that socioeconomic status has been associated with college students' alcohol and/or substance use behaviors (Alhyas et al., 2013; Perera, Torabi, Jayawardana, & Perera, 2010). For example, Perera and colleagues (2010) found that smokers were more likely to have come from lower income families, while Alhyas and colleagues (2013) indicated that the opposite was true in their study.

In addition, alcohol and/or substance use behavioral intentions was significantly lower for those OCSs who reported that their grades were A&B. These findings are consistent with what's been in other similar studies (Almogbel et al., 2012; Bavarian, Flay, & Smith, 2014; Obaid et al., 2010; Ponnet et al., 2015). In their study of school students aged 10 to 20 years old in United Arab Emirates, Obaid and colleagues (2010) found that lower academic performance was a predictor of tobacco use. Bavarian and associates (2014) investigated illicit prescription stimulants use among college students (N=520) from Northwestern University. They found that higher academic achievement and lower grade point average were reasons for college students to initiate drug use.

Enrollment in private HEIs was significantly associated with lower subjective norms. This specific result was surprising because evidence suggests that higher alcohol and/or substance use-related subjective norms have been associated with higher behavioral intentions to

consume alcohol and/or substance among college students (SAMHSA, 2015; Crawford et al., 2010). However, these studies were conducted in the West where social norms are quite different.

Religiosity was another influencing factor identified in our study. OCSs who reported that they were not religious and/or somewhat religious had higher positive attitudes, subjective norms and behavioral intentions for alcohol and or substance use. This result was supported by other studies that found a link between self-reported high religiosity with abstinence from alcohol and/or substances (Burke et al., 2014; Ghandour, Karam, & Maalouf, 2009; Hefner et al., 2011;). For example, Ghandour, Karam, & Maalouf (2009) used a random sample of Lebanese college students from two universities. They studied lifetime abuse and dependency of alcohol and found that believing in God and practicing one's faith were inversely related to alcohol abuse and dependency. Ghandour and his colleagues (2009) also found that the association with Muslim college students were sometimes stronger than Christian college students.

Finally, scores for subjective norms for alcohol and/or substance use intentions were lower for those OCSs who very often shared their thoughts/feelings/plans with their parents as compared with those who often shared. This aligns with previous work that indicated that the sharing of thoughts/feelings/plans with parents is a proactive factor against alcohol and substance use (Alhyas et al., 2013). There is a growing body of evidence that illustrates that parents have a role in preventing risky behaviors such illegal substance use (Griffin & Botvin, 2011). Evidence also support the effectiveness of family-targeted interventions including family-focused programming that helps parents to learn effective parenting skills (Ewing et al., 2015; Griffin & Botvin, 2011; Van Ryzin et al., 2012).

TPB Constructs and OCSs

Our findings generally support the value of the TPB constructs in predicting OCSs alcohol and/or substance use behavioral intentions and are consistent with established evidence (Bashirian et al., 2012; Collins, 2011; Gallucci et al., 2015; Rhodes & Clinkinbeard, 2013).

OCSs' alcohol and/or substance use behavioral intentions were significantly predicted by attitudes, subjective norms and self-efficacy. The variance explained by attitudes (16%), subjective norms (4%), and self-efficacy (6%) were similar to what was found by Rhodes and Clinkinbeard (2014). They studied used TPB as predictor model for engaging in risky drinking in a sample of students from two US west coast universities (N=837). However, the amount of variance attributed to attitudes, subjective norms, and self-efficacy in our study were somewhat less than that was reported by Gallucci (40%) (Collins et al., 2011; Gallucci et al., 2015). OCSs' positive attitudes about alcohol and/or substance use emerged as the most significant predictor of OCSs alcohol and/or substance use behavioral intentions, suggesting that intentions to engage in alcohol and/or substance use were based on consideration of possible positive outcomes of alcohol and/or substance consumption.

In our study, the influence of peers and family (i.e., injunctive subjective norms) as well as perceptions about the number of OCSs who were consuming alcohol and/or substances (i.e., descriptive subjective norms) were the principle types of OCSs subjective norms. We found that descriptive subjective norms were associated with higher intentions to use alcohol and/or substances. Evidence has supported that peers' influence is a powerful factor in patterns of alcohol and/or substance use; greater than the family's protective role (Al-Houqani et al., 2012; Alam-Mehrjerdi et al., 2016; Crawford & Novak, 2010; Griffin & Botvin 2011; Monahan et al., 2014; Van Ryzin et al., 2012). It has also shown that alcohol and/or substance users often seek

the approval of their peers and consider use as a symbol of group unity. According to alcohol and/or substance use literature, approval of alcohol and/or substance use by peers, parents, and other key persons is likely to increase the probability of engaging in alcohol and/or substance use behavior. For example, Page and Roland (2004) found that college students (N=258) who reported higher prevalence perceptions of marijuana use among their campus peers were more likely to report marijuana use.

OCSs' self-efficacy was found to be a stronger predictor of alcohol and/or substance use behavioral intentions than their perceived behavioral control. This supports Bandura's theory (1977) and associated empirical work (Heinz et al., 2013; Mcmillan & Conner, 2003; O'Callaghan, Chang, Callan & Baglioni, 1997; Ross & Jackson, 2013). OCSs who believed they were able to avoid or resist engaging in alcohol and/or substance use behavior reported higher alcohol and/or substance use behavioral intentions. A possible explanation could be that OCSs who reported high self-efficacy believed that they could control their alcohol and/or substance use behavioral intentions.

Additionally, we found that perceived behavioral control was not a predictor of alcohol and/or substance behavioral use intentions. This was consistent with what Ross & Jackson (2013) reported. They studied factors that predicted binge drinking and examined social facilitation and self-efficacy in relation to binge among college students (N=161), attitudes, subjective norms, and self-efficacy accounted for 50% of the college students' intentions to binge drink. However, they concluded that perceived behavioral control failed to predict binge drinking among college students. Although Ajzen (1991) proposed that perceived behavioral control is a strong determinant of behavior that it can override a person's attitudes and subjective norms, our results did not support that assertion. Perceived behavioral control may not be a

significant predictor for OCSs' alcohol and/or substance use behavioral intentions for variety of reasons. Possibly the OCSs represented in our sample did not perceive that accessibility of alcohol and/or substance had an influence on their behavior; they may have believed that alcohol and/or substances are already widely available. Accessibility was measured by two items in the survey; 51% of OCSs responded that it is fairly easy or very easy to obtain alcohol and/or substances in Oman. A second reason could be due to overlap or the fact that perceived behavioral control also correlated with the other TPB constructs in the model. Therefore, the role of self-efficacy and perceived behavioral control in modeling OCSs alcohol and/or substance use behavior is an area requiring further investigation.

OCSs' alcohol and/or substance use behavioral intentions significantly predicted OCSs' alcohol and/or substance use in the past 30 days. That is, the higher the alcohol and/or substance use behavioral intentions score, the higher the likelihood using alcohol and/or substance use to (odds ratio 13%; 95% CI= 1.167-1.429; $p < .05$). These findings support Ajzen's (1991) theoretical proposition that having greater positive intentions towards performing a behavior the more likelihood of engaging in the behavior. Other researchers have come to similar conclusions (Collins et al., 2011; Crawford et al., 2010; Gallucci et al., 2015; Rhodes & Clinkinbeard, 2013).

Knowledge

College students with inadequate knowledge related to alcohol and/or substance use have been found to be more likely to engage in the behavior (Stefanidi et al., 2015; White et al., 2005; Ramirez et al., 2004). We found that the mean scores for alcohol and substance use knowledge was high among OCSs ($M= 4.44$, range =0-5), indicating that college OCSs are aware of the

negative health and legal consequences of alcohol and/or substance use. Additionally, the mediation analysis revealed that there is a direct effect between knowledge and OCSs attitudes, subjective norms, and self-efficacy. Nonetheless, in our study, a mediation analysis did not indicate that knowledge indirectly mediated the relationship between attitudes, subjective norms, self-efficacy, perceived behavioral control and OCSs' alcohol and/or substance use behavioral intentions. We, therefore, concluded that programming designed to increase OCSs knowledge about alcohol and substance use was not designed to address their alcohol and substance avoidance skills, change attitudes, or subjective norms. For example, in Bahrain, it was reported that despite the presence of information about hazards of smoking in the preparatory and secondary school curriculum, only 45.4% of the students were actually taught about the harmful effects of smoking, and only 37.7% were aware of the risk factors of smoking (Ministry of Health Bahrain, 2003). They concluded that their findings may be related to improper design of the school curriculum information and/or improper methods of information delivery. Thus, the proper selection and implementation of school prevention programs are crucial to enhance protection and reduce prevalence of alcohol and/or substance use among students.

The evidence has shown that interventions aiming at increasing the knowledge of college students had provided promising results (Abu-Helalah et al., 2015; Elarabi, et al., 2013; Heckman, Dykstra, & Collins, 2011; Ramirez et al., 2004). Abu-Helalah et al. (2015) noted that knowledge of negative effects of substances influences attitudes and hinders a person's intent to use. According to the findings reported by these authors, the majority of the ex-smokers noted that their knowledge about the family history of heart ailments affected their decision to stop smoking hookah and seek treatment (Abu-Helalah et al., 2015).

Nonetheless, other studies have shown that increasing knowledge and awareness about

the negative consequences of smoking alone was not sufficient to change smoking behavior or facilitate smoke cessation; therefore, the incorporation of other strategies was recommended (White et al., 2005; Ramirez et al., 2004). Increasing the knowledge and awareness of students about alcohol and/or substances should be accompanied by other strategies such as training skills, family and community-based programs to guarantee better response and optimize education and persuasion.

Implications

We aimed to a) identify knowledge, attitudes, subjective norms, self-efficacy, and perceived behavioral control associated with alcohol and/or substance usage patterns among OCSs; and b) identify behavioral intentions for alcohol and/or substance use among OCSs for the purposes of a facilitating the development of culturally relevant, evidenced-based interventions for Omani young people. We explored the utility of the TPB constructs as predictors of alcohol and/or substance use behavioral intentions and use among OCSs. These results could help advance the field of prevention and guide the development of initiatives to decrease alcohol and/or substance use on OCSs. Our findings yielded important implications for prevention and intervention messaging and programming.

Notably, alcohol and/or substance behavioral use intentions and behaviors of surveyed OCSs were influenced by their attitudes, subjective norms, and self-efficacy rather than by their knowledge of the health consequence of alcohol and/or substance use behavior. Secondly, OCSs reported a strong self-efficacy in their ability to avoid alcohol and/or substances; however, this did not translate to lower intentions. Therefore, public health professionals, educators, and

policymakers should focus on influencing intentions as well as on strengthening OCSs confidence to abstain from alcohol and/or substance use through incorporating avoidance or refusal training skills in HEIs alcohol and/or substance prevention programs. Incorporating this same skill training grounded these constructs in other settings (e.g., youth recreation centers or community based prevention program) and assessing the outcomes may yield further evidence about which TPB constructs, public health professionals should be included in the development of Omani national alcohol and/or substance use prevention programs.

Additionally, outcomes of from this study could also aid HEIs professionals and health educators to tailor health intervention messages to specific OCSs subpopulations that are deemed to be more at risk for engaging in alcohol and/or substance consumption. We learned that those who were male, over 25 years old, from high income families, and permanent residents of North & South Batinah had significantly different scores for alcohol and/or substance use behavioral intentions. This information could be used to create programming specifically relevant to these particular populations.

Communication with family was also a factor that predicted intentions. Scores for subjective norms for alcohol and/or substance use intentions were lower for those OCSs who very often shared their thoughts/feelings/plans with their parents as compared to those who often shared. Those in Omani families are either from the same tribe or related to each other. Therefore, strengthening family communication, support, and understanding may be a key protective factor in preventing and intervening with alcohol and substance use behaviors. It may be important to create interventions that encourage parent–student discussions stigmatized issues such as alcohol and/or substance use.

The impact of religiosity among OCSs in our study was particularly evident in light of

the clear prohibition against alcohol and substance use in Islam. Thus, focusing on religious prohibitions may be a useful strategy when developing awareness campaigns and designing prevention/intervention programming targeted at OCSs. The influence of families and religion necessitates involving Omani families when planning for OCSs alcohol and/or substance prevention program and highlighting the impact of the father's role, may have importance implications for culturally relevant alcohol and/or substance use reduction strategies.

Implications from this line of research support further exploration of the relationship between attitudes, subjective norms, self-efficacy, and alcohol and/or substance use behavioral intentions as well as other potential external influences of OCSs' perceptions of control over their behavior. For example, other alcohol and/or substance use-related external influences, such as perceptions of alcohol and/or substance use health risk and risk of engagement in criminal behaviors. OCSs norms may be important factors that influence perceptions of control. Further research to determine what consideration are important for OCSs will inform prevention programs.

Our findings support the utility of a multi-faceted policy approach to the prevention of OCSs' alcohol and/or substance use that includes not only educators, health professionals, and families but also law enforcement (i.e., ROP). Attitudes, subjective norms, and self-efficacy were important predictors of OCSs' alcohol and/or substance use behavioral intentions. For example, OCSs who estimated that higher number of other OCSs were consuming alcohol and/or substances and who reported were confident in their ability to avoid alcohol and/or substance had higher scores for alcohol and/or substance use behavioral intentions. Data from the Royal Oman Police such as the actual prevalence rates of Omani young adults who do consume alcohol and/or substances as well as law enforcement regulations about the criminality of buying and selling

alcohol and/or substances and sentencing guidelines could be incorporated in to public awareness campaigns, primary and secondary school programming as well as HEIs programming.

Limitations

Due to the exploratory cross-sectional nature of our study several limitations must be acknowledged:

- a) The cross-sectional design limits the inferences that can be drawn from our findings about OCSs' alcohol and/or substance use intentions and behaviors. Cross-sectional studies can obtain data from only one particular point in time; thus one may only assess alcohol and/or substance use behavioral intentions and behaviors at any given point in time rather assess trends. Because our study employed a cross-sectional study design, trends in OCSs' alcohol and/or substance use over the course of a semester, as well as definitive conclusions regarding the utility of the TPB, could not be identified. Ideally, studies of alcohol and/or substance use should adopt a time series design that can discern trends over the course of an academic semester, year, or other times periods.
- b) OCSs reported on their own use of alcohol and/or substance. Self-report data is subject to recall bias as well as underreporting (e.g., due to social acceptability bias). Because alcohol and/or substance use is culturally and religiously unacceptable and also illegal for Omanis, participants may have been unwilling to provide an honest and accurate accounts of their intentions and behavior. However, online anonymous survey methods were used to increase the probability that these students would provide truthful responses. Despite the limitations of self-report data presents, this method has been widely adopted

by investigators exploring alcohol and/or substance use, energy drink use, and non-medical prescription use among college students (Collins et al., 2011; Rhodes et al., 2013; Ross & Jackson, 2013).

- c) OCSs participated in an anonymous online survey via invitations sent from HEIs. This approach to surveying participants has several limitations. For example, the size of the sampling frame may be difficult to establish because of such issues as having multiple emails or phone numbers for the same students, invalid/inactive emails and/or phone numbers makes accurately sizing an online population difficult (Andrews, Nonnecke, & Preece, 2003). Also, relatively little may be known about the characteristics of students in online survey, aside from some basic demographic variables, and even this information may be questionable (Couper, 2000).
- d) Our recruitment approach had limitations, because the HEIs sent out study participation invitations via their email and SMS systems and did not share the total of students who received invitations. We are unable to accurately calculate a response rate. In addition, the HEI officials did not share data about the overall socio-demographic characteristics of their respective student bodies. Hence, it is difficult to determine if our sample is representative of the Omani HEI student population at large.
- e) Notably, our study was well powered with a sample size of 409 OCSs. However, the convenience nature of our sampling scheme limits the generalizability of our study to the larger college student population. Although convenience sampling is often employed when studying these particular behaviors (Brache & Stockwell, 2011), random sampling techniques should be used in future work.

Future Research

The following recommendations are made for further research regarding OCSs alcohol and/or substance use intentions and behaviors:

- a) The current study represents the first attempt to establish validity and reliability of a newly modified survey instrument designed for use with OCSs instead of a European or US-based population. As a result, a second examination of this survey is warranted. Data obtained from this second examination should be used to further establish the psychometric properties of the survey instrument.
- b) A qualitative examination should be conducted to explore the contextual context of OCSs alcohol and/or substance use behaviors. Phenomena such as knowledge of negative health consequences, influence of family roles, social and economic transitions, impact of Omani college policies, and awareness of community-based health initiatives could be studied. Such studies might be used to inform the policy formation, as well as the design and development of intervention/prevention programming.
- c) The majority of current literature has examined alcohol and/or substance use behavior by cross-sectional data-collection methods. In these studies, attitudes, subjective norms and self-efficacy have consistently predicted alcohol and/or substance use among college students (Ponnet et al., 2015; Gallucci et al., 2015; Rhodes et al., 2013). Therefore, future research which uses longitudinal or time series designs is warranted.
- d) Further research related to alcohol and/or substance use among OCSs is necessary. The present investigation was the first of its kind, using the TPB constructs to examine

- alcohol and/or substance use behavior. A replication of this study that employs a stratified random sampling of OCSs across all regions of Oman would further assist in determining the theory's usefulness as a framework for predicting OCSs alcohol and/or substance use behavior.
- e) Additionally, studies that explore the association between mental health conditions such as anxiety, depression, and stress and alcohol and/or substance use among OCSs should be conducted.
 - f) An assessment of current regional and national Omani alcohol and/or substance use prevention programs to determine if content related to addressing attitudes, subjective norms, and self-efficacy is incorporated in those programs. The assessment is necessary before spending significant resources targeted at enhancing alcohol and substance use prevention messaging.

Conclusion

The purpose of this study was to: a) identify knowledge, attitudes, subjective norms, self-efficacy and perceived behavioral control associated with alcohol and/or substance usage patterns among OCSs; b) identify behavioral intentions for alcohol and/or substance use among OCSs; and c) facilitate the development of culturally relevant evidenced-based interventions for Omani young people by communicating study findings to policymakers and healthcare program leaders.

Our findings emphasize the contributions of attitudes, subjective norms, self-efficacy, and intentions as motivators to engage in alcohol and/or substance use behaviors. What we found

supports the use of the TPB as a framework for designing, developing, implementing, and evaluating intervention and prevention programming.

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APPENDICES

APPENDIX A

ASUS-OCSs Survey (English Version)

Alcohol and Substance Use Scale for Omani College Student

We are asking you to join higher education students who are helping us to study higher education student's viewpoints about the use of alcohol and substances. Your responses will be anonymous. Your answers will not be linked to you personally. Please note that your responses will not have any influence/impact on your grades and/or academic status. Your honest answers will help us to learn about your experience. Therefore, please honestly respond to all questions and/or statements.

Instruction: There are four sections in this survey. Please complete each questions in the four sections

Section I: Please tell us about you. Please select the appropriate answers

1. How old are you? _____
2. Are you currently enrolled in one of the higher education institutes in Oman?
a. Yes () b. No ()
3. What institute or college you enrolled in? _____
4. What is your nationality? a (Omani) b (Non-Omani)
5. What is your sex a. Male () b. Female ()
6. Do you live on campus? a. Yes () b. No ()
7. Where is your permanent home? ***Please select the appropriate region***
a. Muscat () b. Dhofar () c. Musandam () d. Batinah North ()
e. Batinah South () f. Sharqiyah North () g. Sharqiyah South ()
h. Ad Dakhiliyah () i. Al Wusta () j. Al Buraimi ()
8. On a scale of 1(not religious) to 5 (very religious), how strongly would you classify your religious beliefs? **Please indicate the answer.**
a. Not Religious b. Some what religious c. often religious d. More religious. e. Very religious

9. What is your father's educational level? **Please check the appropriate level**
- a. less than high school () Completed high school () College degree ()
Master degree () Doctoral degree ()
10. What is your mother's educational level? **Please check the appropriate level**
- a. less than high school () Completed high school () College degree ()
Master degree () Doctoral degree ()
11. What is your family's monthly income? ***Please check your response.***
- a. 200 to 500 Rail ()
- b. 600 to 900 Rail ()
- c. 1000 to 2000 Rail ()
- d. 3000 Rail and above ()
12. How many family members live in your house (i.e. permanent home)?

13. How often do you share your thoughts/feelings/ plans with your parents? ***Please circle your answer***
- a. Very often b. Often c. Sometimes d. Rarely e. Never
14. What type of school grades do you currently receive in college? ***Please select the most appropriate answer***
- a. Mostly A's and B's (90's and 80s) ()
- b. Mostly B's and C's (80's and 70s) ()
- c. Mostly C's and D's (70's and 60s) ()
- d. Mostly D's and F's (60's and lower) ()
15. Have you ever heard about any bad health consequences related to alcohol and illicit drug use? ***Please check your response.***
- a. Yes () b. No ()

16. Are you aware of Oman Drug Laws (article 43) regarding the punishment of smuggling, possessing or consuming any amount of illegal drugs? ***Please check your response.***

- a. Yes () b. No ()

17. In your opinion, how important is it to conform to society's laws, norms and value?
Please select the answer that most closely reflects your views

- a. Unimportant b. of Little importance Moderately important c. d. Important d. Very important

18. Have you ever received any information regarding the effects of alcohol and/or illegal drugs on health? ***Please check your response.***

- b. Yes () b. No ()

19. In the past 12 months, have you attended any lectures or educational sessions about the dangers of the use of alcohol and/or illegal drugs? ***Please check your response.***

- a. Yes () b. No ()

20. Within the **past 30 days** (One calendar month) on how many days did you use any of the substances below (please mark appropriate column for each row)

	Never Used	Used but Not the Last 30 Days	Used once Only	Used Daily
Cigarettes, Tobacco from a water pipe (shisha or hookah)				
E. Cigarettes, Smokeless tobacco				
Alcohol (beer, wine, vodka, any liquors)				
Marijuana (pot, weed, hashish, hash oil)				
Cocaine (crack, rock, freebase)				
Methamphetamine (crystal meth, ice, crank)				
Opiates (Heroin, smack)				
Inhalants (glue, gas, solvents)				
Other amphetamines (diet pills, bennies)				
Other illegal drugs				

21. Have you ever used a needle to inject drugs into your body?

- a. Yes () b. No ()

22. If yes, how many times during your life have you used a needle to inject any illegal drug into your body during your lifetime?

- a. 0 times
 b. 1 to 2 times
 c. 3 to 9 times
 d. 10 to 19 times
 e. 20 and more times

23. Within the past 12 months, in your opinion how many students at your school have used tobacco product (e.g. cigarettes, shisha, or Dhoka)? ***Please insert the number here***

24. Within the past 12 months, in your opinion how many students at your school have used alcohol? ***Please insert the number here*** _____
25. Within the past 12 months, in your opinion how many students at your school have used illegal drugs such as hashish, heroin, khat or any other drugs? ***Please insert the number here*** _____
26. I plan to drink alcohol sometimes in the next year. ***Please circle the answer that most closely corresponds to your thoughts.***
a. Strongly Agree b. Agree c. Undecided d. Disagree e. Strongly disagree
27. I plan to use drugs sometimes in the next year. ***Please circle the answer that most closely corresponds to your thoughts.***
a. Strongly Agree b. Agree c. Undecided d. Disagree e. Strongly disagree
28. I plan to smoke, try shisha or Dhoka sometime next year. ***Please circle the answer that most closely corresponds to your thoughts.***
a. Strongly Agree b. Agree c. Undecided d. Disagree e. Strongly disagree
29. I have made a final decision to stay away from alcohol and illegal drugs. ***Please circle the answer that most closely corresponds to your thoughts.***
a. Strongly Agree b. Agree c. Undecided d. Disagree e. Strongly disagree

Section II: What do you think?

Please read each statement carefully. Record the response that best describes your opinions.

Example for practice: It is fun to participate in weekend fundraising. ***Please circle the answer that most closely corresponds to your opinion.***

- a. Strongly Agree () b. Agree () c. Undecided () d. Disagree () e. Strongly disagree ()

If you disagree with the above statement, you should put an "x" in the parenthesis as following:

- a. Strongly Agree () b. Agree () c. Undecided () d. Disagree (X) e. Strongly disagree ()

1. Heavy drinkers and drug user should be identified and required to take treatment. ***Please circle the answer that most closely corresponds to your opinion.***

- a. Strongly Agree () b. Agree () c. Undecided () d. Disagree () e. Strongly disagree ()

2. A heavy drinker or drug user is sure to become an addict. ***Please circle the answer that most closely corresponds to your opinion.***

- a. Strongly Agree () b. Agree () c. Undecided () d. Disagree () e. Strongly disagree ()

3. It is sinful to drink alcoholic beverages or use illegal drugs. ***Please circle the answer that most closely corresponds to your opinion.***

- a. Strongly Agree () b. Agree () c. Undecided () d. Disagree () e. Strongly disagree ()

4. There is really no acceptable reason why a person should drink alcohol or use drugs. ***Please circle the answer that most closely corresponds to your opinion.***

- a. Strongly Agree () b. Agree () c. Undecided () d. Disagree () e. Strongly disagree ()

5. Abstinence from drinking alcohol and drugs is an important safety factor in our daily lives. ***Please circle the answer that most closely corresponds to your opinion.***

- a. Strongly Agree () b. Agree () c. Undecided () d. Disagree () e. Strongly disagree ()

6. Drinking or using drugs socially is a normal part of one's life style. ***Please circle the answer that most closely corresponds to your opinion.***

- a. Strongly Agree () b. Agree () c. Undecided () d. Disagree () e. Strongly disagree ()

7. Using drugs or getting drunk once in a while helps to get rid of one's tensions. ***Please circle the answer that most closely corresponds to your opinion.***

- a. Strongly Agree () b. Agree () c. Undecided () d. Disagree () e. Strongly disagree ()

8. Social drinking serves a very useful purpose in the business world. ***Please circle the answer that most closely corresponds to your opinion.***

- a. Strongly Agree () b. Agree () c. Undecided () d. Disagree () e. Strongly disagree ()

9. Moderate use of alcohol and drugs have more health benefits than negative effects on health.

Please circle the answer that most closely corresponds to your opinion.

- a. Strongly Agree () b. Agree () c. Undecided () d. Disagree () e. Strongly disagree ()

10. A person should avoid social drinking or using drugs because it leads to addiction. ***Please circle the answer that most closely corresponds to your opinion.***

- a. Strongly Agree () b. Agree () c. Undecided () d. Disagree () e. Strongly disagree ()

11. A person should not drive under the influence of alcohol. ***Please circle the answer that most closely corresponds to your opinion.***

- a. Strongly Agree () b. Agree () c. Undecided () d. Disagree () e. Strongly disagree ()

12. Drinking alcoholic beverages or using drugs of any type or amount is a serious threat to health and safety. ***Please circle the answer that most closely corresponds to your opinion.***

- a. Strongly Agree () b. Agree () c. Undecided () d. Disagree () e. Strongly disagree ()

13. Drinking alcohol or using drugs while engaging in recreational sports may lead to serious injury. ***Please circle the answer that most closely corresponds to your opinion.***

- a. Strongly Agree () b. Agree () c. Undecided () d. Disagree () e. Strongly disagree ()

14. Drinking alcohol or using drugs is a major cause of health problems for people at all ages. ***Please circle the answer that most closely corresponds to your opinion.***

- a. Strongly Agree () b. Agree () c. Undecided () d. Disagree () e. Strongly disagree ()

15. Oman law should not allow the selling of alcohol beverages in any hotels and restaurants. ***Please circle the answer that most closely corresponds to your opinion.***

- a. Strongly Agree () b. Agree () c. Undecided () d. Disagree () e. Strongly disagree ()

16. Drinking alcohol and using drugs with a group of persons help make a person more popular. ***Please circle the answer that most closely corresponds to your opinion.***

- a. Strongly Agree () b. Agree () c. Undecided () d. Disagree () e. Strongly disagree ()

17. Alcohol and drug use helps one be more relaxed and confident in social situations. ***Please circle the answer that most closely corresponds to your opinion.***

- a. Strongly Agree () b. Agree () c. Undecided () d. Disagree () e. Strongly disagree ()

18. The government has a responsibility to provide strict legal control over the consumption of alcohol and drugs. ***Please circle the answer that most closely corresponds to your opinion.***

- a. Strongly Agree () b. Agree () c. Undecided () d. Disagree () e. Strongly disagree ()

Section III: Peers and Family Values

Please read each statement carefully. Record the response that best reflects your feelings.

1. If my friends offer a cigarette, it would be hard for me to say no. ***Please circle the answer that most closely corresponds to your feelings.***

- a. Strongly Agree () b. Agree () c. Undecided () d. Disagree () e. Strongly disagree ()

2. If my friends offer alcohol or drugs, it would be hard for me to say no. ***Please circle the answer that most closely corresponds to your feelings.***

- a. Strongly Agree () b. Agree () c. Undecided () d. Disagree () e. Strongly disagree ()

3. At times, I've drunk alcohol because my friends urged me to. ***Please circle the answer that most closely corresponds to your feelings.***

- a. Strongly Agree () b. Agree () c. Undecided () d. Disagree () e. Strongly disagree ()

4. At times, I've used drugs because my friends urged me to. ***Please circle the answer that most closely corresponds to your feelings.***

- a. Strongly Agree () b. Agree () c. Undecided () d. Disagree () e. Strongly disagree ()

5. I often feel pressured to drink or use drugs when I normally would not. ***Please circle the answer that most closely corresponds to your feelings.***

- a. Strongly Agree () b. Agree () c. Undecided () d. Disagree () e. Strongly disagree ()

6. If my friends are drinking, it would be hard for me to resist having a drink. ***Please circle the answer that most closely corresponds to your feelings.***

- a. Strongly Agree () b. Agree () c. Undecided () d. Disagree () e. Strongly disagree ()

7. If my friends are using drugs, it would be hard for me to resist using drugs. ***Please circle the answer that most closely corresponds to your feelings.***

- a. Strongly Agree () b. Agree () c. Undecided () d. Disagree () e. Strongly disagree ()

8. I've felt pressured to get drunk at parties. ***Please circle the answer that most closely corresponds to your feelings.***

- a. Strongly Agree () b. Agree () c. Undecided () d. Disagree () e. Strongly disagree ()

9. I've felt pressured to get high at parties. ***Please circle the answer that most closely corresponds to your feelings.***

- a. Strongly Agree () b. Agree () c. Undecided () d. Disagree () e. Strongly disagree ()

10. At times I have drunk alcohol or used drugs because my best friend urged me to. ***Please circle the answer that most closely corresponds to your feelings.***

- a. Strongly Agree () b. Agree () c. Undecided () d. Disagree () e. Strongly disagree ()

11. If my parents or relatives knew that my friends' drunk alcohol or used drugs they would be very disappointed. ***Please circle the answer that most closely corresponds to your feelings.***

- a. Strongly Agree () b. Agree () c. Undecided () d. Disagree () e. Strongly disagree ()

12. How many of your friend's drink alcohol or use drugs?

- a. None
b. Some
c. Do not know
d. A lot
e. All

Section IV: What do you think you will do in different situations?

Please select a response for each question, indicating what you would likely to do in each situation.

1. Imagine that you are going to a party where you will meet new people. You feel that drug/alcohol use will relax you and make you more confident. Could you avoid drug/alcohol use? ***Please circle the answer that most closely corresponds to your decision.***

- a. Strongly Agree () b. Agree () c. Undecided () d. Disagree () e. Strongly disagree ()

2. Imagine that you have just blown a good job, you are home alone and depressed. Would you

give in to the urge to take drugs/alcohol which are in the house? ***Please circle the answer that most closely corresponds to your decision.***

- a. Strongly Agree () b. Agree () c. Undecided () d. Disagree () e. Strongly disagree ()

3. Imagine that you are home with a loved one, and are feeling angry after a fight. You want to make up, but at the same time you want to get drunk/loaded. Could you resist the urge to take drugs/alcohol? ***Please circle the answer that most closely corresponds to your decision.***

- a. Strongly Agree () b. Agree () c. Undecided () d. Disagree () e. Strongly disagree ()

4. Imagine that you are feeling good and have no responsibilities for a couple of days. The only thing you see against getting a bit drunk/loaded is that you have promised yourself you would go straight for 2 months, and you still have 3 weeks to go. Would you take drugs/alcohol? ***Please circle the answer that most closely corresponds to your decision.***

- a. Strongly Agree () b. Agree () c. Undecided () d. Disagree () e. Strongly disagree ()

5. Imagine it is late, you cannot sleep and drugs/alcohol are available in the house. You have decided not to use drugs. Could you resist the urge to use drugs to help you get to sleep? ***Please circle the answer that most closely corresponds to your decision.***

- a. Strongly Agree () b. Agree () c. Undecided () d. Disagree () e. Strongly disagree ()

6. Imagine that a new job is starting tomorrow, you are going out with friends and expecting a good time. Could you resist the urge to celebrate with drugs/alcohol? ***Please circle the answer that most closely corresponds to your decision.***

- a. Strongly Agree () b. Agree () c. Undecided () d. Disagree () e. Strongly disagree ()

7. Imagine that you are home with your loved one, and very angry after a fight. You are tempted to get back at your partner by getting drunk/loaded. Would you give in to the temptation? ***Please circle the answer that most closely corresponds to your decision.***

- a. Strongly Agree () b. Agree () c. Undecided () d. Disagree () e. Strongly disagree ()

8. Imagine that a very important relationship has just ended, and you are very depressed. Would you give in to the urge to take drugs/alcohol? ***Please circle the answer that most closely corresponds to your decision.***

- a. Strongly Agree () b. Agree () c. Undecided () d. Disagree () e. Strongly disagree ()

9. Imagine that you have run into 2 friends who are celebrating a \$100 lottery win with drugs/alcohol. Could you resist their urging to join them in drug/alcohol use? ***Please circle the answer that most closely corresponds to your decision.***

- a. Strongly Agree () b. Agree () c. Undecided () d. Disagree () e. Strongly disagree ()

10. Imagine that you are at a party and feeling uptight. Most people seem to be having a good time. You are tempted to use drugs/alcohol to loosen up. Would you? ***Please circle the answer that most closely corresponds to your decision.***

- a. Strongly Agree () b. Agree () c. Undecided () d. Disagree () e. Strongly disagree ()

11. Imagine that you promised yourself to stay straight for two months but you have just blown your five weeks' record with one hit or drink. Would this situation lead you to take a second one? ***Please circle the answer that most closely corresponds to your decision.***

- a. Strongly Agree () b. Agree () c. Undecided () d. Disagree () e. Strongly disagree ()

12. Imagine that you had managed to stay straight for a near record time, but last night you blew it. Because of last night you are feeling weak. Would you take drugs/alcohol tonight? ***Please circle the answer that most closely corresponds to your decision.***

- a. Strongly Agree () b. Agree () c. Undecided () d. Disagree () e. Strongly disagree ()

13. Imagine that you are home alone and depressed. Could you resist the urge to go out and find some drugs/ alcohol? ***Please circle the answer that most closely corresponds to your decision.***

- a. Strongly Agree () b. Agree () c. Undecided () d. Disagree () e. Strongly disagree ()

14. Imagine that a good friend has accused you of being insensitive. Now you are feeling hurt and tempted to use drugs/alcohol. Could you resist? ***Please circle the answer that most closely corresponds to your decision.***

- a. Strongly Agree () b. Agree () c. Undecided () d. Disagree () e. Strongly disagree ()

15. Imagine that a good friend is feeling miserable. He wants you to join him in heavy discussion about drug/ alcohol use to pick his spirits up. Could you resist the urge to take drugs/alcohol? ***Please circle the answer that most closely corresponds to your decision.***

- a. Strongly Agree () b. Agree () c. Undecided () d. Disagree () e. Strongly disagree ()

16. Imagine that you are home alone; it is a dull weekend with nothing in particular to look forward to. You are bored. Would you give in to the urge to get drunk/loaded? ***Please circle the answer that most closely corresponds to your decision.***

- a. Strongly Agree () b. Agree () c. Undecided () d. Disagree () e. Strongly disagree ()

17. How difficult do you think it would be for you to get any illegal drugs (e.g. Hashish, Heroin,

Opium etc.) if you wanted to?

- a. Possible
- b. Very easy
- c. Fairly easy
- d. I do not know
- e. Fairly difficult
- f. Very difficult
- g. Impossible

18. How difficult do you think it would be for you to get alcohol if you wanted to?

- a. Possible
- b. Very easy
- c. Fairly easy
- d. I do not know
- e. Fairly difficult
- f. Very difficult
- g. Impossible

(The questionnaire ends here. Thank you ☺)

APPENDIX B

IRB Approval Letter (Old Dominion University)



OFFICE OF THE VICE PRESIDENT FOR RESEARCH

Physical Address
 4111 Monarch Way, Suite 203
 Norfolk, Virginia 23508
Mailing Address
 Office of Research
 1 Old Dominion University
 Norfolk, Virginia 23529
 Phone(757) 683-3460
 Fax(757) 683-5902

DATE: September 20, 2016
 TO: Kimberly Adams Tufts
 FROM: Old Dominion University Institutional Review Board
 PROJECT TITLE: [933376-2] An Exploration of Alcohol and Substance Use Knowledge, Attitudes, Subjective Norms, Perceived Behavioral Control and Behavioral Intentions Among Omani Higher Education Students
 REFERENCE #: 16-130
 SUBMISSION TYPE: New Project
 ACTION: MODIFICATIONS REQUIRED
 DECISION DATE: September 20, 2016
 REVIEW TYPE: Full Committee Review

Thank you for your submission of New Project materials for this project. Old Dominion University Institutional Review Board has reviewed your submission and has determined that the following MODIFICATIONS are REQUIRED in order to secure approval:

1. *Translations - English to Arabic translations have been provided for the the flyers and other messages, However, back-translations of Arabic to English provided by a second translator have not been provided. This documentation is required for final approval of these items.*
2. *Sample size The sample size has been increaed in #7 of the application form to 450 but the number of males/females does not add to 450. Please reconcile these numbers.*

Research activities in accordance with this submission may not begin until this office has received a response to these conditions and issued final approval.




This submission has received Full Committee Review based on the applicable federal regulation.

If you have any questions, please contact Adam Rubenstein at 757-683-3686 or arubens@odu.edu. Please include your project title and reference number in all correspondence with this committee.

APPENDIX D

IRB Approval Letter

Ministry of Health -Oman

<p><i>Sultanate of Oman</i> <i>Ministry of Health</i> <i>Directorate General of Planning & Studies</i></p>		<p>سلطنة عُمان وزارة الصحة المديرية العامة للتخطيط والدراسات</p>
<p>Ref. MoH/DGPS/CSR/PROPOSAL_APPROVED /44/2016</p>	الرقم:
<p>Date :..... 30.11.2016.....</p>	التاريخ:
<p>Muna Shaaban Bait Ajzoon Principal Investigator</p>	البراق:
<p>Study Title : "An Exploration of Alcohol and Substance Use Knowledge, Attitudes, Subjective Norms, Perceived Behavioral Control and Behavioral Intentions Among Omani Higher Education Students. (MoH/CSR/16/5150)"</p>		
<p>After compliments</p>		
<p>We are pleased to inform you that your research proposal "An Exploration of Alcohol and Substance Use Knowledge, Attitudes, Subjective Norms, Perceived Behavioral Control and Behavioral Intentions Among Omani Higher Education Students" has been approved by Research and Ethical Review & Approve Committee, Ministry of Health.</p>		
<p>Regards,</p>		
		
<p>Dr. Ahmed Mohamed Al Qasbi Director General of Planning and Studies Chairman, Research and Ethical Review and Approve Committee Ministry of Health, Sultanate of Oman.</p>		
<p>Cc Day file</p>		

APPENDIX E
IRB Approval Letter
Dhofar University

Department of Research



دائرة البحوث

Dear Ms. Muna,

Subject: Approval of your Request for Distribution of Questionnaire (DU/AY/2016-17/Ques-004)

Date: 10th January, 2017

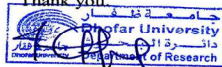
I am very pleased to inform you that your request for the distribution of questionnaire for your research titled:

- An exploration of alcohol and substance use knowledge, attitudes, subjective norms, perceived behavioral control and behavioral intentions among Omani higher education students

has been approved by the University Research Board (URB) for distribution. You can now distribute the questionnaire. We wish you ever continuing successful contributions to research.

Please note that as per DU policy, the Researcher has to manage the distribution process him/herself.

Thank you



Best wishes,
Dr. Israr UI Hassan
Director Department of Research
Dhofar University, PO Box 2509, 211 Salalah
Sultanate of Oman
Tel: +968 23237490

APPENDIX F

Consent Cover letter

Study Title: Alcohol and substance use knowledge, attitudes, subjective norms, self-efficacy, perceived behavioral control and intentions among Omani Higher Education students

Dear Omani College Student,

The purpose of this letter is to give you information that may affect your decision whether to say YES or NO to participating in this research study. You are being invited to participate in a study exploring Omani higher education students' knowledge, attitudes about alcohol and substance use. The purpose of the proposed study is to: 1) identify knowledge, attitudes, subjective norms and perceived behavioral control associated with alcohol and substance usage pattern among Omani Higher Education Students (HES), 2) identify behavioral intentions for alcohol and substance use among Omani HES, and 3) facilitate the development of culturally relevant evidenced-based interventions for Omani young people. We want to know this information so that health promotion programs can be developed that are culturally appropriate for Omani young people. This study is being conducted by Mrs. Muna Bait Ajzoon, health services research doctoral student and Dr. Kimberly Adams Tufts, Professor of Nursing. The study is being completed in partial fulfillment of the requirements for doctoral study.

The survey will take approximately 25-30 minutes to complete. You will be asked questions regarding your knowledge, attitudes, and intentions regarding alcohol and substance use. You will also be asked questions about how your friends influence your behaviors regarding alcohol and substance use. Please click on the answer that best describes what you have experienced, perceive or feel. Please answer honestly.

Your participation in this study will not directly benefit you. However, information collected from this study could help policy makers and public health organization to design culturally relevant health promotion programs and to allocate resources for these programs.

There is a risk that your personal health information could be disclosed. However, we will make every effort to prevent this. Although, the study is powered by Qualtrics software programming and in order for the Qualtrics to power the survey, your computer cookies must be enabled. The researchers will not use the cookies or IP addresses for any purpose other than to administer this survey and will not share them with anyone else. In addition, any personal information you provide will not be sold or shared with anyone. Data is being collected only for research purposes. Your completed survey will be assigned a unique identification number for tracking purposes only. There will be no personal identification information obtained from the surveys thus your responses will be anonymous. **YOUR NAME WILL NEVER BE LINKED TO THIS SURVEY.** Only the researchers will have access to study data. All study data will be stored in a password protected electronic file. Any study results will only be reported in aggregate form. No individuals will ever be identified.

Completing the survey is voluntary. If you choose to participate, you may exit the survey at any time without any penalty. At any point you may withdraw from participation in this study. You will not be penalized for choosing not to answer particular questions that are asked in the survey. **Your academic standing will not be negatively impacted by your participation or non-participation.**

If you have questions or concerns about this research, contact the Responsible Investigator, Dr. Kimberly Adams Tufts at 001- 757-683-5011 or at ktufts@odu.edu or Mrs. Muna Bait Ajzoon, Oman 968 92478102 or majzoon@gmail.com or Dr. Tancy Vandecar-Burdin, Chair of the Old Dominion University Institutional Review Board, at 001-757- 683-3802, Old Dominion University. She will be happy to review the matter with you.

If you do not wish to participate, please exit now. If you choose to participate, click ‘Continue’ below. This will serve as documentation of your consent to participate.

Sincerely,

Mrs. Muna Bait Ajzoon, BSN, MSN, PhD Candidate
In Health Services Research

Dr. Kimberly Adams Tufts, DNP, WHNP-BC, FAAN
Professor of Nursing

Consent Cover letter

Arabic Version

عنوان الدراسة: استكشاف مدى معرفة واستعمال وردود الفعل والتقييم الشخصي ودرجة التحكم في السلوكيات والنوايا حول استعمال الكحول والمخدرات بين طلاب الدراسات العليا العمانيين

عزيزي طالب الدراسات العليا العماني: غرض هذه الرسالة هو أن أقدم لكم المعلومات الكافية عن هذه الدراسة البحثية، لأنها قد تؤثر على اتخاذك لقرارك حول المشاركة فيها، سواء كان نعم أو لا. نحن نود دعوتك للمشاركة في دراسة لاستكشاف مدى معرفة طلبة التعليم العالي العمانيين، ومواقفهم حيال الكحول واستخدام المواد المخدرة. الغرض من الدراسة المقترحة هو: (١) تحديد مستويات المعرفة والمواقف، والمعايير الشخصية والسيطرة السلوكية المحسوسة المرتبطة بتعاطي الكحول وانماط استخدام المواد المخدرة، ونمط الاستخدام بين طلاب الدراسات العليا العمانيين، (٢) تحديد النوايا السلوكية لاستخدام الكحول والمخدرات بين طلاب الدراسات العليا العمانيين، و (٣) تيسير تطوير أساليب التدخلات لمعاونة الشباب العماني، اعتماداً على الإفادات المثبتة وذات الصلة الثقافية. نريد أن نعرف هذه المعلومات حتى نتمكن من تعزيز برامج الصحة وأوضاعها لغرض أن تكون مناسبة ثقافياً للشباب العماني. وتجرى هذه الدراسة من قبل السيدة منى بيت عززون، طالبة الدكتوراه في بحوث الخدمات الصحية، والدكتور كيمبرلي آدمز تافنس، أستاذ التمريض. ويجري استكمال الدراسة كجزء من متطلبات دراسة الدكتوراه. سوف تستغرق المشاركة في الدراسة ما يقرب من 25-30 دقيقة لإكمالها. وسوف يطلب منك الإجابة على أسئلة بخصوص معرفتك ومواقفك ونواياك حول الكحول واستخدام المخدرات. كما سيطلب منك الإجابة على أسئلة حول كيفية تأثير أصدقائك على سلوكياتك فيما يخص الكحول وتعاطي المخدرات. الرجاء النقر على الإجابة التي تصف ما خبرته، أو تصورته أو شعرت به. الرجاء الإجابة بصدق. ومشاركتكم في هذه الدراسة لن تفيدكم مباشرة. ولكن المعلومات التي سيتم جمعها من هذه الدراسة ستساعد واضعي السياسات ومؤسسات الصحة العامة في تصميم برامج تعزيز الصحة ذات الصلة الثقافية وتخصيص الموارد لهذه البرامج. هناك خطر من أن يتم الكشف عن معلوماتك الصحية الشخصية، ولكننا سوف نبذل كل جهد ممكن لمنع تشغيل الاستطلاع، يجب Qualtrics للبرمجة، ولكي يتسنى لل Qualtrics ذلك. وهذه الدراسة مدعومة باستخدام برنامج تمكين ملفات تعريف الارتباط بجهاز الكمبيوتر الخاص بك، ولكن الباحثين لن يستخدموا ملفات تعريف الارتباط أو عناوين ال لأي غرض آخر سوى غرض هذا الاستطلاع، ولن يشاركو هذه المعلومات مع أي شخص آخر. وبالإضافة إلى ذلك، لن IP يتم بيع أي من هذه المعلومات الشخصية التي تقدمها أو يشارك فيها أي شخص آخر. جمع البيانات يتم فقط لأغراض البحث. سيتم تعيين رقم تعريف فريد وخاص بك عقب الانتهاء من الاستطلاع لأغراض المتابعة فقط، ولن تكون هناك معلومات عن الهوية الشخصية التي تم الحصول عليها من الاستطلاعات، وبالتالي فإن ردودكم ستكون مجهولة الهوية، فإسمك لن يكون مرتبطاً بإجاباتك في هذه الدراسة. سيكون الباحثون فقط هم المسموح لهم الحصول على بيانات الدراسة، وسيتم تخزين جميع بيانات الدراسة في ملف الكتروني محمي بكلمة مرور. سيتم الإبلاغ عن أي نتائج للدراسة في شكل متوسط المجموع، ولن يتم أبداً تحديد هوية أي من الأفراد المشاركين. استكمال الاستطلاع سيكون عملاً طوعياً، وإذا اخترت المشاركة، يمكنك الخروج من الدراسة في أي وقت دون أي عقوبة. ولك أن تنسحب من المشاركة بالدراسة في أي لحظة تريد، ولن يعاقب أحد لاختيار لا للإجابة على الأسئلة الخاصة التي توجه في الاستطلاع. ومستواك الأكاديمي الخاص بك لن يتأثر سلباً بسبب المشاركة أو عدم المشاركة.

إذا كان لديك أسئلة أو استفسارات حول هذا البحث، اتصل بالمحقق المسؤول، الدكتورة كيمبرلي آدمز تافنس في 001-757-

683-5011 على أو ktufts@odu.edu

أو اتصل بالسيدة منى شعبان بيت عجزون، عمان 968 92478102 أو majzoon@gmail.com

أو اتصل بالدكتور Tancy Vandecar-Burdin ,جامعة اولد دومنيون ، رئيس مجلس المؤسسة جامعة اولد دومنيون

على ٣٨٠٢-٦٨٣-٧٥٧-٠٠١ وسوف تكون سعيدة لمراجعة الامر معك

إذا كنت لا ترغب في المشاركة، يرجى الخروج الآن. إذا اخترت المشاركة، انقر فوق "متابعة" أدناه. وهذا سيكون بمثابة توثيق موافقتك على المشاركة.

المخالصة

السيدة منى شعبان بيت عجزون BSN, MSN, PhD Candidate
طالبة مرشحة للدكتوراه في الابحاث والخدمات الصحيه

أستاذ تمريض التمريض كيمبرلي آدمز تافتس.

DNP,WHNP, BC, FAAN

APPENDIX G

Scripts for Email & SMS Messages

Email Message

Dear Higher Education Student,

We are currently conducting an online survey with Omani Higher Education Students, and we would like to invite you to participate. The purpose of this research study is to explore Omani higher education student's attitudes and beliefs regarding alcohol and substance use.

Title: An exploration of alcohol and substance use knowledge, attitudes, subjective norms, perceived behavioral control and Behavioral Intentions.

Length: 25-30 minutes

Valid Through: 1ST September, 2016 or when we reach our desired number of completes.

Begin the Survey by Clicking the Below Link

https://odu.co1.qualtrics.com/SE/?SID=SV_bCQtKxGXv7EBFgV--

Please note: Your opinions are very valuable to us and our survey data is equally as valuable. To successfully complete the study, please do not speed through answers, and please do not assign the same rating or number throughout the the entire survey. You will need to answer a few screening questions in order to qualify to complete this survey.

Thank you for your time and participation

Muna Bait Ajzoon

Muna Bait Ajzoon
PhD Candidate, Health Services Research
Old Dominion University
Majzo001@odu.edu

Arabic Version

Scripts for Email and SMS Messages

Email Message

رسالة بريد إلكتروني

عزيزي طالب الدراسات العليا:
نحن نقوم حالياً بعمل استطلاع على شبكة الانترنت لطلاب الدراسات العليا العمانيين ونود أن ندعوك للمشاركة في الاستطلاع. الغرض من هذه الدراسة البحثية هو تحديد مستويات المعرفة والمواقف، والمعايير الشخصية والسيطرة السلوكية المرتبطة بتعاطي الكحول وانماط تعاطي المواد المخدرة، ونمط الإستخدام بين طلاب الدراسات العليا العمانيين.

العنوان: استكشاف مدى معرفة واستعمال وردود الفعل والتقييم الشخصي ودرجة التحكم في السلوكيات والنوايا حول استعمال الكحول والمخدرات.

الزمن: 25-30 دقيقة.

صالح حتى: أول سبتمبر 2016 أو حتى استيفاء العدد المطلوب.

ابدأ الاستطلاع بالنقر على الرابط أدناه

https://odu.co1.qualtrics.com/SE/?SID=SV_bCQtKxGXv7EBFgV--

الرجاء ملاحظة: إن أراكم في غاية الأهمية بالنسبة لنا، وكذلك المعلومات الخاصة بالاستطلاع هي على نفس الدرجة من الأهمية. وحتى نكمل هذه الدراسة بنجاح الرجاء عدم استعجال الإجابات والرجاء كذلك عدم وضع نفس درجة التقييم على جميع الأسئلة بالاستطلاع. سيتوجب عليك الإجابة على بعض الأسئلة للتأكد من صلاحية واستكمال المشاركة في الاستطلاع. نشكركم على التبرع بوقتكم والمشاركة.

منى بنت عجزون

طالبة مرشحة لدرجة الدكتوراة في أبحاث الخدمات الصحية

جامعة أولد دومنيون

Majzoool@odu.edu

APPENDIX H

Study Flyer

Opportunity for Volunteers to Participate in a Research Study

What?

Volunteers are needed to participate in a research study. The purpose of this research study is to explore Omani higher education students' attitudes and beliefs regarding alcohol and substance use.

Why?

Your opinions are important. Information gained during the study will be used to help us to develop educational programs regarding alcohol and/or substance use that meet the needs of Omani Higher Education students.

Who?

If you are Omani and currently a higher education student aged 18 and above, and able to read Arabic you may be eligible to participate.

How?

You will be asked to complete an online survey that will take approximately 25 -30 minutes to complete. The survey link will be sent to you via e mail or short text message (SMS) by your institute administration office. The survey link is anonymous and all information will be kept confidential.

Interested?

If you are interested in participating in this study and would like more information, please contact the principal investigator, Mrs. Muna S. Bait Ajzoon, Oman

968 92478102 or majzoon@gmail.com. Or visit the survey site at
https://odu.co1.qualtrics.com/SE/?SID=SV_bCQtKxGXv7EBFgV--

OR to read more about the study and complete the survey.

Study Flyer

Arabic Version

إعلان

فرصة للمتطوعين للمشاركة في دراسة بحثية

ماذا؟

وهناك حاجة إلى متطوعين للمشاركة في دراسة بحثية. والغرض من هذه الدراسة البحثية هو تحديد مستويات المعرفة والمواقف، والمعايير الشخصية والسيطرة السلوكية المحسوسة المرتبطة بتعاطي الكحول وانماط استخدام المواد المخدرة، ونمط الاستخدام بين طلاب الدراسات العليا العمانيين

لماذا؟

وسيتم استخدام المعلومات المكتسبة أثناء الدراسة لمساعدتنا في تطوير البرامج التعليمية المتعلقة بتعاطي الكحول. أرائكم مهمة. و، أو، استخدام المواد المخدرة، والتي تلبي احتياجات طلاب التعليم العمانيين

من؟

إذا كنت عماني وحاليا أنت طالب بالتعليم العالي وممن تتراوح أعمارهم بين 18 سنة فأكثر، وقادر على قراءة اللغة العربية، قد تكون مؤهلاً للمشاركة

كيف؟

سوف يطلب منك استكمال استطلاع على الانترنت، والذي سوف يستغرق حوالي 25-30 دقيقة لإكماله، وسيتم إرسال رابط من خلال مكتب إدارة المعهد الخاص بك. رابط الاستطلاع (SMS) الاستطلاع لكم عبر البريد الإلكتروني في رسالة قصيرة. سيكون مجهولاً، وستبقى كل المعلومات سرية

إذا كنت موافقاً على الأشتراك في هذه الدراسة وتحتاج لمزيد من المعلومات فيمكنك الإتصال بالباحث الرئيسي 'السيدة منى بنت عجزون على رقم هاتفها بعمان 9689247802 او عن طريق البريد الإلكتروني

majzoon@gmail.com

أو أقرأ المزيد على موقع الدراسة ثم أكمل الإستبيان.

https://odu.co1.qualtrics.com/SE/?SID=SV_bCQtKxGXv7EBFgV--

APPENDIX I

ASUS-OCSs Survey
(Arabic Version)

الكحول/المخدرات و جوهر مقياس استخدامها لطالب التعليم العالي

نطلب منك الانضمام الى طلاب تعليم عالي و الذين يساعدوننا على دراسة النظرة العامة لطلاب التعليم العالي لأستخدام الكحول و اسبابها. اجاباتك ستكون بدون هويتك و لن ترتبط بك شخصيا . الرجاء العلم بأن اجاباتك لن تكون ذات تأثير على درجاتك او حالتك الاكاديمية. اجاباتك الصادقة ستساعدنا لتعلم من تجربتك. لذلك نرجو منك الاجابة على جميع الاسئلة و العبارات .

تعليمات: هنالك اربع اقسام في هذا المسح. الرجاء الاجابة على جميع الاسئلة في كل قسم .

القسم الاول: ارجوك اخبرنا عن نفسك. اختر الاجابة المناسبة

1.. كم عمرك؟ _____

2. هل انت جزء من اي من معاهد التعليم العالي بالسلطنة حاليا؟

أ. نعم ب. لا

3. ماهي الكلية او المعهد المسجل لديه؟ _____

4. ما جنسيتك؟

أ. عماني ب. غير ذلك

5

. ما هو جنسك؟ أ. ذكر ب. انثى

6. هل تعيش بسكن الكلية/معهد؟

أ. نعم ب. لا

7

. اين هو مسكنك الدائم؟ الرجاء اختيار المنطقة/المحافظة الصحيحة.

أ. مسقط ب. ظفار ت. مسندم ث. شمال الباطنة

ج. جنوب الباطنة ح. شمال لاشرقية خ. جنوب الشرقية د. الداخلية

ذ. الوسطى ز. البريمي

8

. في تقدير (1 ليس متدين) الى (5متدين جدا) , كيف يمكنك وصف التزامك الديني. ارجاء اختيار الاجابة.

أ. غير متدين ب. ضعيف التدين ج. متدين بالعادة د. متدين ه. متدين جدا

9. ما هي الدرجة العلمية لوالدك؟ علم على الاجابة المناسبة.

أ. اقل من المدرسة الثانويه ب. اكمل المدرسة الثانويه ج. درجة جامعية د. شهادة ماجستير

ه. شهادة دكتوراه

10. ما هي الدرجة العلمية لوالدتك؟ اختر الاجابة المناسبة.

أ. اقل من المدرسة الثانويه ب. اكمل المدرسة الثانويه ج. درجة جامعية د. شهادة ماجستير

ه. شهادة دكتوراه

11. ما هو الدخل الشهري لأسرتك؟

- أ. من 200 الى 500 ريال ()
 ب. من 600 الى 900 ريال ()
 ج. من 1000 الى 2000 ريال ()
 د. من 3000 فما فوق ()
 12. كم فردا من الاسرة يعيشون في منزلك؟

13. كم من العادة مشاركتكم لافكارك و احاسيسك و خططك مع والديك ؟ ضع دائرة.
 أ. اغلب الاحيان ب. عادة ج. بعض الاحيان د. نادرا ه. نهائيا

14. مع نوع الدرجات التي تحصل عليها حاليا في الكلية الرجاء اختيار الاجابة الانسب
 أ. أ او ب (تسعينات و ثمانينات) ()
 ب. ب او ج (ثمانينات و سبعينات) ()
 ج. ج او د (سبعينات و ستينات) ()
 د. د او ه (ستينات او اقل) ()

15. هل سمعت من قبل بالمشاكل الصحية المتعلقة باستخدام الكحول او المخدرات؟ علم على الاجابة.
 أ. نعم ب. لا

16. هل انت على علم بقوانين المخدرات بالسلطنة ؟ (مقالة 43) المتعلقة بعقوبات البيع او الحيازة او الاستهلاك لاي كمية من المخدرات غير القانونية؟ علم على الاجابة.
 أ. نعم ب. لا

17. في رأيك , كم من المهم الالتزام لقوانين و قيم المجتمع ؟
 أ. مهم ب. ذواهمية قليلة ج. مهم نوع ما د. مهم ه. مهم جدا

18. هل استقبلت اي معلومات عن تاثير الكحول و المخدرات على الصحة ؟
 أ. نعم ب. لا

19. في ال 12 شهر الماضية, هل حضرت اي محاضرة او جلسة عن اخطار استخدام الكحول و المخدرات غير القانونية؟
 أ. نعم ب. لا

20. في الثلاثون يوما الماضية, كم يوما استخدمت ايا من المذكور ادناه؟ (علم على العمود المناسب لكل صف).

21. هل سبق لك استخدام حقنة لحقن المخدرات في جسدك؟
أ. نعم ب. لا

22. اذا نعم, كم مرة في حياتك استخدمت الحقنة لضخ المخدرات في جسدك؟

نهائيا	نعم لكن ليس ال 30	استخدمت مرة واحدة	يومية
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السجائر , التبغ (شيشة او غليون)

سجائر الكترونية , التبغ غير المدخن

الكحول (الجمعة , النبيذ , فودكا او اية كحول)

مارجوانا (حشيش , زيت الحشيش , الجانجا ...)

كوكايين (بانواعه)

ميثافيتامين (تلج)

المستنشقات (جاز غراء سلوفينتس)

غيرها من المخدرات

أ. صفر

ب. من 1 الى 2 مرة

ج. 3 الى 9 مرة

د. 10 الى 19 مرة

ه. 20 او اكثر

23. خلال الاثني عشر شهرا الماضية, في رأيك ما عدد الطلاب في كليتك الذين استخدموا منتجات التبغ (سجائر , شيشة , دوخة) اكتب الرقم هنا _____ .

24. خلال الاثني عشر شهرا الماضية, في رأيك ما عدد الطلاب في كليتك الذين استخدموا الكحول؟ اكتب الرقم هنا _____ .

25. خلال الاثني عشر شهرا الماضية, في رأيك ما عدد الطلاب في كليتك الذين استخدموا المخدرات غير القانونية (حشيش , هيروين , قات او غيرها)؟ اكتب الرقم هنا _____ .

26. اني انوي شرب الكحول في السنة المقبلة . الرجاء وضع دائرة على الاجابة التي تمثل افكارك.

ا. اوافق بشدة () ب. اوافق () ج. غير مقرر () د. لا اوافق ه. لا اوافق بشدة ()

27. اني انوي تعاطي مخدرات في السنة المقبلة . الرجاء وضع دائرة على الاجابة التي تمثل افكارك .
 ا. اوافق بشدة () ب. اوافق () ج. غير مقرر () د. لا اوافق هـ. لا اوافق بشدة ()

28. اني انوي ان ادخن او اجرّب الشيشة او الدوخة في السنة المقبلة . الرجاء وضع دائرة على الاجابة التي تمثل افكارك .
 ا. اوافق بشدة () ب. اوافق () ج. غير مقرر () د. لا اوافق هـ. لا اوافق بشدة ()

29. لقد اتخذت قرارا نهائيا بالابتعاد عن الكحول و المخدرات. الرجاء وضع دائرة على الاجابة التي تمثل افكارك .
 ا. اوافق بشدة () ب. اوافق () ج. غير مقرر () د. لا اوافق هـ. لا اوافق بشدة ()

القسم الثاني: ما رأيك؟

الرجاء قراءة العبارات جيدا, ثم اجب بأفضل ما يمثل رأيك

مثال للتجربة: من المرح المشاركة في نشاطات نهاية الاسبوع. الرجاء وضع دائرة على الاجابة التي تمثل افكارك .
 ا. اوافق بشدة () ب. اوافق () ج. غير مقرر () د. لا اوافق هـ. لا اوافق بشدة ()

في حالة عدم الاتفاق بشده مع العبارة اعلاه , ضع علامة كالآتي " X " . الرجاء وضع دائرة على الاجابة التي تمثل افكارك .
 ا. اوافق بشدة () ب. اوافق () ج. غير مقرر () د. لا اوافق هـ. لا اوافق بشدة X

1. مدمني الكحول و متعاطي المخدرات يوجب الكشف عنهم و خضوعهم للعلاج. الرجاء وضع دائرة على الاجابة التي تمثل افكارك .
 ا. اوافق بشدة () ب. اوافق () ج. غير مقرر () د. لا اوافق هـ. لا اوافق بشدة ()

2. شارب الكحول و متعاطي المخدرات سيصبحون مدمنين لا محالة. الرجاء وضع دائرة على الاجابة التي تمثل افكارك .
 ا. اوافق بشدة () ب. اوافق () ج. غير مقرر () د. لا اوافق هـ. لا اوافق بشدة ()

3. انه من المحرم شرب الكحول او الجعة و المخدرات. الرجاء وضع دائرة على الاجابة التي تمثل افكارك .
 ا. اوافق بشدة () ب. اوافق () ج. غير مقرر () د. لا اوافق هـ. لا اوافق بشدة ()

4. لا يوجد عذر مقنع للانسان لتعاطي المخدرات او تعاطي الكحول. الرجاء وضع دائرة على الاجابة التي تمثل افكارك .
 ا. اوافق بشدة () ب. اوافق () ج. غير مقرر () د. لا اوافق هـ. لا اوافق بشدة ()

5. عدم الاكثار و التقشف في شراب الكحول و المخدرات هو عامل مهم في الحفاظ على صحتنا. الرجاء وضع دائرة على الاجابة التي تمثل افكارك .
 ا. اوافق بشدة () ب. اوافق () ج. غير مقرر () د. لا اوافق هـ. لا اوافق بشدة ()

6. الشرب و المخدرات اجتماعيا هو جزء طبيعي من طريقة الحياة. الرجاء وضع دائرة على الاجابة التي تمثل افكارك .
 ا. اوافق بشدة () ب. اوافق () ج. غير مقرر () د. لا اوافق هـ. لا اوافق بشدة ()

7. تعاطي المخدرات او الكحول مرة كل فترة يساعد في التخلص من النرفزة و التوتر. الرجاء وضع دائرة على الاجابة التي تمثل افكارك .
 ا. اوافق بشدة () ب. اوافق () ج. غير مقرر () د. لا اوافق هـ. لا اوافق بشدة ()

8. تعاطي الكحول اجتماعيا يخدم طبقة كبير من سوق العمل. الرجاء وضع دائرة على الاجابة التي تمثل افكارك .
 ا. اوافق بشدة () ب. اوافق () ج. غير مقرر () د. لا اوافق هـ. لا اوافق بشدة ()

9. الاستخدام الحديث للكحول و المخدرات له تأثير افضل على الصحة من التأثير السيئ. الرجاء وضع دائرة على الاجابة التي تمثل افكارك.
 ا. اوافق بشدة () ب. اوافق () ج. غير مقرر () د. لا اوافق ه. لا اوافق بشدة ()
10. الشخص يجب ان يتجنب المخدرات و الشراب الاجتماعي لانه يؤدي الى الادمان. الرجاء وضع دائرة على الاجابة التي تمثل افكارك.
 ا. اوافق بشدة () ب. اوافق () ج. غير مقرر () د. لا اوافق ه. لا اوافق بشدة ()
11. لا يجب ان يفقد الشخص تحت تأثير الكحول. الرجاء وضع دائرة على الاجابة التي تمثل افكارك.
 ا. اوافق بشدة () ب. اوافق () ج. غير مقرر () د. لا اوافق ه. لا اوافق بشدة ()
12. شرب البيرة و الكحول او تعاطي المخدرات باية كمية كانت، له اثر سيئ جدا على الصحة و الامن. الرجاء وضع دائرة على الاجابة التي تمثل افكارك.
 ا. اوافق بشدة () ب. اوافق () ج. غير مقرر () د. لا اوافق ه. لا اوافق بشدة ()
13. شرب الكحول او تعاطي المخدرات اثناء ممارسة الرياضات الترفيهيه قد يؤدي الى جروح خطيرة. الرجاء وضع دائرة على الاجابة التي تمثل افكارك.
 ا. اوافق بشدة () ب. اوافق () ج. غير مقرر () د. لا اوافق ه. لا اوافق بشدة ()
14. استخدام المخدرات و الكحول هو سبب رئيسي للامراض في كل الفئات العمرية. الرجاء وضع دائرة على الاجابة التي تمثل افكارك.
 ا. اوافق بشدة () ب. اوافق () ج. غير مقرر () د. لا اوافق ه. لا اوافق بشدة ()
15. القانون العماني يجب الا يسمح ببيع البيرة و الكحول في اي من الفنادق و المطاعم. الرجاء وضع دائرة على الاجابة التي تمثل افكارك.
 ا. اوافق بشدة () ب. اوافق () ج. غير مقرر () د. لا اوافق ه. لا اوافق بشدة ()
16. تعاطي المخدرات و الكحول في مجموعات يساعد على جعل الشخص محبوبا . الرجاء وضع دائرة على الاجابة التي تمثل افكارك.
 ا. اوافق بشدة () ب. اوافق () ج. غير مقرر () د. لا اوافق ه. لا اوافق بشدة ()
17. الكحول و المخدرات تساعد الشخص على الاسترخاء و كسب الثقة بالنفس في المواقف الاجتماعية. الرجاء وضع دائرة على الاجابة التي تمثل افكارك.
 ا. اوافق بشدة () ب. اوافق () ج. غير مقرر () د. لا اوافق ه. لا اوافق بشدة ()
18. تتحمل الحكومة مسؤولية كبيرة في ضبط و استهلاك المخدرات و الكحول. الرجاء وضع دائرة على الاجابة التي تمثل افكارك.
 ا. اوافق بشدة () ب. اوافق () ج. غير مقرر () د. لا اوافق ه. لا اوافق بشدة ()

القسم الثالث : العلاقات و القيم الاسرية.

الرجاء اقرا العبارات التالية جيدا و اجب بما يعكس احساسك بشفافية.

1. اذا عرض على اصدقائي سجائر , سيصعب علي الرفض . الرجاء وضع دائرة على الاجابة التي تمثل مشاعرك.
 ا. اوافق بشدة () ب. اوافق () ج. غير مقرر () د. لا اوافق ه. لا اوافق بشدة ()

2. اذا عرض علي اصدقائي الكحول او المخدرات سيصعب علي رفضها. الرجاء وضع دائرة على الاجابة التي تمثل مشاعرك.
- ا. اوافق بشدة () ب. اوافق () ج. غير مقرر () د. لا اوافق ه. لا اوافق بشدة ()
3. في بعض المرات قد شربت الكحول لان اصدقائي الحوا علي بذلك. الرجاء وضع دائرة على الاجابة التي تمثل مشاعرك.
- ا. اوافق بشدة () ب. اوافق () ج. غير مقرر () د. لا اوافق ه. لا اوافق بشدة ()
4. في بعض المرات تعاطيت المخدرات لان اصدقائي الحوا علي بذلك. الرجاء وضع دائرة على الاجابة التي تمثل مشاعرك.
- ا. اوافق بشدة () ب. اوافق () ج. غير مقرر () د. لا اوافق ه. لا اوافق بشدة ()
5. اشعر بالضغط عند الشرب او تعاطي المخدرات عندما لا اتعاطاها. الرجاء وضع دائرة على الاجابة التي تمثل مشاعرك.
- ا. اوافق بشدة () ب. اوافق () ج. غير مقرر () د. لا اوافق ه. لا اوافق بشدة ()
6. اذا شرب اصدقائي الكحول سيصعب علي مقاومة الشرب. الرجاء وضع دائرة على الاجابة التي تمثل مشاعرك.
- ا. اوافق بشدة () ب. اوافق () ج. غير مقرر () د. لا اوافق ه. لا اوافق بشدة ()
7. اذا تعاطى اصدقائي المخدرات سيصعب علي رفضها. الرجاء وضع دائرة على الاجابة التي تمثل مشاعرك.
- ا. اوافق بشدة () ب. اوافق () ج. غير مقرر () د. لا اوافق ه. لا اوافق بشدة ()
8. قد شعرت بالضغط لاشرب الكحول في الحفلات. الرجاء وضع دائرة على الاجابة التي تمثل مشاعرك.
- ا. اوافق بشدة () ب. اوافق () ج. غير مقرر () د. لا اوافق ه. لا اوافق بشدة ()
9. قد شعرت بالضغط لتعاطي المخدرات في الحفلات. الرجاء وضع دائرة على الاجابة التي تمثل مشاعرك.
- ا. اوافق بشدة () ب. اوافق () ج. غير مقرر () د. لا اوافق ه. لا اوافق بشدة ()
10. في بعض الاحيان كنت قد استخدمت الكحول و المخدرات بسبب ارغامي على ذلك من اصدقائي المقربين. الرجاء وضع دائرة على الاجابة التي تمثل مشاعرك.
- ا. اوافق بشدة () ب. اوافق () ج. غير مقرر () د. لا اوافق ه. لا اوافق بشدة ()
11. اذا علم والداي او اقارب والداي بشربي الكحول او تعاطي المخدرات فانهم سيشعرون بخيبة الامل. الرجاء وضع دائرة على الاجابة التي تمثل مشاعرك.
- ا. اوافق بشدة () ب. اوافق () ج. غير مقرر () د. لا اوافق ه. لا اوافق بشدة ()
12. كم من اصدقائك يستعملون الكحول او المخدرات ؟
- أ. لا احد.
ب. البعض.
ج. لا اعلم.
د. الكثير.
ه. الجميع.

القسم الرابع : ما الذي تعتقد انك فاعله في هذه المواقف المختلفة؟

الرجاء اختيار رد فعل لكل موقف مختلف. معيارا عما كنت ستفعله في كل موقف.

1. تخيل انك ذاهب الى حفلة والتي ستلتقي فيها باناس جدد. هل تعتقد ان الكحول و المخدرات ستجعلك مسترخيا و اكثر ثقة بالنفس؟ هل يمكنك تجنبها؟ الرجاء وضع دائرة على الاجابة التي تمثل قرارك.
 ا. اوافق بشدة () ب. اوافق () ج. غير مقرر () د. لا اوافق ه. لا اوافق بشدة ()
2. تخيل انك فشلت في عمل جيد للتو. انت وحيد في المنزل و محبط ستفكر في تعاطي المخدرات الموجودة في المنزل؟ الرجاء وضع دائرة على الاجابة التي تمثل قرارك.
 ا. اوافق بشدة () ب. اوافق () ج. غير مقرر () د. لا اوافق ه. لا اوافق بشدة ()
3. تخيل انك مع من تحب بالمنزل و حدثت مشاجرة. كنت غاضبا و تريد اصلاح ما حدث. هل تستطيع مقاومة الرغبة في تعاطي المخدرات او الكحول؟ الرجاء وضع دائرة على الاجابة التي تمثل قرارك.
 ا. اوافق بشدة () ب. اوافق () ج. غير مقرر () د. لا اوافق ه. لا اوافق بشدة ()
4. تخيل انك سعيد و مرتاح البال بدون مسؤوليات لعدة ايام. الشئ الوحيد الذي يمنعك من الشرب/المخدرات هو انك قد وعدت نفسك بالبقاء نظيفا لمدة شهرين متتابعين و المتبقي هو 3 اسابيع. هل ستتتعاطي؟ الرجاء وضع دائرة على الاجابة التي تمثل قرارك.
 ا. اوافق بشدة () ب. اوافق () ج. غير مقرر () د. لا اوافق ه. لا اوافق بشدة ()
5. تخيل ان الوقت متأخر و انت لا تستطيع النوم مع وجود مخدرات/كحول بالمنزل. وانت قررت ان تتوقف. هل ستأتيك الرغبة بالاستعانة بها للنوم؟ الرجاء وضع دائرة على الاجابة التي تمثل قرارك.
 ا. اوافق بشدة () ب. اوافق () ج. غير مقرر () د. لا اوافق ه. لا اوافق بشدة ()
6. تخيل ان عمل جديد سيبدأ بالغد. انت ذاهبا مع الاصدقاء هل تستطيع مقاوة الاحتفال بل الكحول/المخدرات؟ الرجاء وضع دائرة على الاجابة التي تمثل قرارك.
 ا. اوافق بشدة () ب. اوافق () ج. غير مقرر () د. لا اوافق ه. لا اوافق بشدة ()
7. تخيل انك بالمنزل مع من تحب و حدوث مشاجرة. انت غاضب و تريد العودة اليهم عن طريق المخدرات/الكحول. هل ستتماشى مع هذه الرغبة؟ الرجاء وضع دائرة على الاجابة التي تمثل قرارك.
 ا. اوافق بشدة () ب. اوافق () ج. غير مقرر () د. لا اوافق ه. لا اوافق بشدة ()
8. تخيل ان علاقة مهمة جدا قد انتهت لتوها. و انت محبط جدا. هل ستستلم للرغبة في تعاطي الكحول/المخدرات؟ الرجاء وضع دائرة على الاجابة التي تمثل قرارك.
 ا. اوافق بشدة () ب. اوافق () ج. غير مقرر () د. لا اوافق ه. لا اوافق بشدة ()
9. تخيل انك ذاهب الى اصدقاء يحتفلون ب ايجازة الاقامة بل الخارج بقيمة ١٠٠٠ ريال عماني بالكحول/المخدرات. هل تستطيع مقاومة عروضهم بالانضمام و الاحتفال؟ الرجاء وضع دائرة على الاجابة التي تمثل قرارك.
 ا. اوافق بشدة () ب. اوافق () ج. غير مقرر () د. لا اوافق ه. لا اوافق بشدة ()
10. تخيل انك بحفل و لست مرتاح. معظم الناس يبدو عليهم قضاء وقت ممتع. يجب عليك استخدام الكحول/المخدرات للاسترخاء. هل ستفعل ذلك؟ الرجاء وضع دائرة على الاجابة التي تمثل قرارك.
 ا. اوافق بشدة () ب. اوافق () ج. غير مقرر () د. لا اوافق ه. لا اوافق بشدة ()
11. تخيل انك و عدت نفسك ان تستمر باستقامة لمدة شهرين ولكن في اسبوعك الخامس قد خرقت ذلك بتناولك كأس واحد من الكحول. هل تستمر بالشرب ام تواصل مسيرتك؟ الرجاء وضع دائرة على الاجابة التي تمثل قرارك.

11. اوافق بشدة () ب. اوافق () ج. غير مقرر () د. لا اوافق ه. لا اوافق بشدة ()
12. تخيل انك قد توقفت عن التعاطي لوقت مثالي ولكنك قد رجعت بالامس و تشعر بالضعف. هل ستتعاطى المخدرات/الكحول الليلة؟ الرجاء وضع دائرة على الاجابة التي تمثل قرارك.
ا. اوافق بشدة () ب. اوافق () ج. غير مقرر () د. لا اوافق ه. لا اوافق بشدة ()
13. تخيل انك وحيد و محبط. هل تستطيع مقاومة الرغبة و العثور على كحول/مخدرات ؟ الرجاء وضع دائرة على الاجابة التي تمثل قرارك.
ا. اوافق بشدة () ب. اوافق () ج. غير مقرر () د. لا اوافق ه. لا اوافق بشدة ()
14. تخيل ان صديق عزيز اتهمك بانك حساس. انت الان مجروح. هل ستقاوم الكحول/المخدرات؟ الرجاء وضع دائرة على الاجابة التي تمثل قرارك.
ا. اوافق بشدة () ب. اوافق () ج. غير مقرر () د. لا اوافق ه. لا اوافق بشدة ()
15. تخيل ان صديق عزيز يشعر بسوء. يريد ان يشاركك نقاش عميقا عن الكحول و المخدرات ليرفع من روحه المعنوية. هل ستقاوم الكحول/المخدرات ؟ الرجاء وضع دائرة على الاجابة التي تمثل قرارك.
ا. اوافق بشدة () ب. اوافق () ج. غير مقرر () د. لا اوافق ه. لا اوافق بشدة ()
16. تخيل انك وحيد بالمنزل. كان اسبوعا مملًا مع عدم وجود الكثير لتفعله. هل ستاتيك الرغبة في السكر او النشوة؟ الرجاء وضع دائرة على الاجابة التي تمثل قرارك.
ا. اوافق بشدة () ب. اوافق () ج. غير مقرر () د. لا اوافق ه. لا اوافق بشدة ()
17. كم من الصعب عليك تعتقد بانك يمكنك الحصول على مخدرات غير قانونية؟ (كالحشيش او الهيروين.. إلخ) اذا اردت ذلك؟
أ. ممكن
ب. سهل جدا
ج. سهل
د. لا اعلم
ه. صعب
و. صعب جدا
ي. مستحيل
18. كم من الصعب عليك الحصول على الكحول اذا اردت ذلك؟
أ. ممكن
ب. سهل جدا
ج. سهل
د. لا اعلم
ه. صعب
ي. مستحيل
و. صعب جدا

نهاية الاستفتاء هنا . شكرا

APPENDIX J

Translation Authentication

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خطاف مسقط للتجارة ترجمة معتمدة

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ملصق

الكحول و جوهر مقياس استخدامها لطالب التعليم العالي
تطلب منك الانضمام الى طلاب تعليم عالي و الذين يساعدوننا على دراسة النظرة العامة لطالب التعليم العالي لأستخدام الكحول و اسبابها. اجابتك ستكون بدون هويتك و لن ترتبط بك شخصيا . الرجاء العلم بان اجابتك لن تكون ذات تأثير على درجاتك او حالتك الاكاديمية. اجابتك الصادقة ستساعدنا لتعلم من تجربتك. لذلك، نرجو منك الاجابة على جميع الاسئلة و العبارات .

تعليمات: هنالك اربع اقسام في هذا المسح. الرجاء الاجابة على جميع الاسئلة في كل قسم .

القسم الاول: ارجوك اخبرنا عن نفسك. اختر الاجابة المناسبة

1. كم عمرك؟
أ. هل انت جزء من اي من معاهد التعليم العالي بالسلطنة حاليا؟
ب. لا
أ. نعم
2. ما هي الكلية او المعهد المسجل لديه؟
أ. عماني
ب. غير ذلك
أ. ما هو جنسك؟
ب. ذكر
ب. انثى
3. هل تعيش بسكن الكلية/معهد؟
أ. نعم
ب. لا
4. اين هو مسكن الدائم؟ الرجاء اختيار المنطقة/المحافظة الصحيحة.
أ. مسقط
ب. ظفار
ت. مسمند
ث. شمال الباطنة
ج. جنوب الباطنة
ح. شمال لشرقية
خ. جنوب الشرقية
د. الداخلية
ذ. الوسطى
ز. البريمي
5. في تقدير (1 ليس متدين) الى (5متدين جدا) ، كيف يمكنك وصف التزامك الديني. ارجاء اختيار الاجابة.
أ. غير متدين
ب. ضعيف التدين
ج. متدين بالعادة
د. متدين
ه. متدين جدا

9. ما هي الدرجة العلمية لوالدك؟ علم على الاجابة المناسبة.
أ. اقل من المدرسة
ب. اكمال المدرسة
ج. درجة جامعية
د. شهادة ماجستير
ه. شهادة دكتوراه

10. ما هي الدرجة العلمية لوالدتك؟ اختر الاجابة المناسبة.
أ. اقل من المدرسة
ب. اكمال المدرسة
ج. درجة جامعية
د. شهادة ماجستير
ه. شهادة دكتوراه

11. ما هو الدخل الشهري لأسرتك؟
أ. من 200 الى 500 ريال ()
ب. من 600 الى 900 ريال ()
ج. من 1000 الى 2000 ريال ()
د. من 3000 فما فوق ()

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12. كم فردا من الاسرة يعيشون في منزلك؟
13. كم من العادة مشاركتكم لافكارك و احاسيسك و خططك مع الديك ؟ ضع دائرة.
14. مع نوع الدرجات التي تتحصل عليها حاليا في الكلية الرجاء اختيار الاجابة الانسب.
15. هل سمعت من قبل بالمشاكل الصحية المتعلقة بالكحول او المخدرات؟ علم على الاجابة.
16. هل انت على علم بقوانين المخدرات بالسلطنة ؟ (مقالة 43) المتعلقة بعقوبات البيع او الحيازة او او الاستهلاك لاي كمية من المخدرات غير القانونية؟ علم على الاجابة.
17. في رأيك , كم من المهم الالتزام لقوانين و قيم المجتمع ؟
18. هل استقبلت اي معلومات عن تأثير الكحول و المخدرات على الصحة ؟
19. في ال 12 شهر الماضية, هل حضرت اي محاضرة او جلسة عن اخطار استخدام الكحول و المخدرات غير القانونية؟
20. في الثلاثون يوما الماضية, كم يوما استخدمت ايا من المذكور اثناء؟ (علم على العمود المناسب لكل صف).

يوميا	استخدمت مرة واحدة	نعم لكن ليس ال 30 يوم الماضية	نهائيا
السجائر , التبغ (شيشة او غليون)			
سجائر الكترونية , التبغ غير المدخن			
الكحول (الجمعة , النبيذ , فودكا او اية كحول)			
مارجوانا (حشيش , زيت الحشيش , الجانجا)			
كوكايين (بانواعه)			
ميثامفيتامين (تلج)			
المستنشقات (جاز غراء سلوفينتنس)			
غيرها من المخدرات			

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21. هل سبق لك استخدام حقنة لحقن المخدرات في جسدك؟

أ. نعم ب. لا

22. اذا نعم، كم مرة في حياتك استخدمت الحقنة لضخ المخدرات في جسدك؟

أ. صفر
ب. من 1 الى 2 مرة
ج. 3 الى 9 مرة
د. 10 الى 19 مرة
هـ. 20 او اكثر

23. خلال الاثني عشر شهرا الماضية، في رأيك ما عدد الطلاب الذين استخدموا منتجات التبغ (سجائر ، شيشة ، دوخة) اكتب الرقم هنا _____

24. خلال الاثني عشر شهرا الماضية، في رأيك ما عدد الطلاب الذين استخدموا الكحول؟
اكتب الرقم هنا _____

25. خلال الاثني عشر شهرا الماضية، في رأيك ما عدد الطلاب الذين استخدموا المخدرات غير القانونية (خشيش ، هيروين ، قات او غيرها)؟
اكتب الرقم هنا _____

26. اني انوي شرب الكحول في السنة المقبلة . الرجاء وضع دائرة على الاجابة التي تمثل افكارك.
أ. اوافق بشدة () ب. اوافق () ج. غير مقرر () د. لا اوافق () هـ. لا اوافق بشدة ()

27. اني انوي تعاطي مخدرات في السنة المقبلة . الرجاء وضع دائرة على الاجابة التي تمثل افكارك.
أ. اوافق بشدة () ب. اوافق () ج. غير مقرر () د. لا اوافق () هـ. لا اوافق بشدة ()

28. اني انوي ان ادخن او اجرب الشيشة او الدوخة في السنة المقبلة . الرجاء وضع دائرة على الاجابة التي تمثل افكارك.
أ. اوافق بشدة () ب. اوافق () ج. غير مقرر () د. لا اوافق () هـ. لا اوافق بشدة ()

29. لقد اتخذت قرارا نهائيا بالابتعاد عن الكحول و المخدرات. الرجاء وضع دائرة على الاجابة التي تمثل افكارك.
أ. اوافق بشدة () ب. اوافق () ج. غير مقرر () د. لا اوافق () هـ. لا اوافق بشدة ()

القسم الثاني: ما رأيك؟

الرجاء قراءة العبارات جيدا، ثم اجب بالفضل ما يمثل رأيك
مثال للتجربة: من المرح المشاركة في نشاطات نهاية الاسبوع. الرجاء وضع دائرة على الاجابة التي تمثل افكارك.
أ. اوافق بشدة () ب. اوافق () ج. غير مقرر () د. لا اوافق () هـ. لا اوافق بشدة ()
في حالة عدم الاتفاق مع العبارة اعلاه ، ضع علامة كالآتي . الرجاء وضع دائرة على الاجابة التي تمثل افكارك.
أ. اوافق بشدة () ب. اوافق () ج. غير مقرر () د. لا اوافق () هـ. لا اوافق بشدة ()

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KHATAF MUSCAT TRADING- AUTHORISED TRANSLATION

1. ممنى الكحول و متعاطي المخدرات يتطلبون تمييزهم و خضوعهم للعلاج. الرجاء وضع دائرة على الاجابة التي تمثل افكارك.
ا. اوافق بشدة () ب. اوافق () ج. غير مقرر () د. لا اوافق () هـ. لا اوافق بشدة ()
2. شارب الكحول و متعاطي المخدرات سيصبحون ممنين لا محالة. الرجاء وضع دائرة على الاجابة التي تمثل افكارك.
ا. اوافق بشدة () ب. اوافق () ج. غير مقرر () د. لا اوافق () هـ. لا اوافق بشدة ()
3. انه من المحرم شرب الكحول او الجمعة و المخدرات. الرجاء وضع دائرة على الاجابة التي تمثل افكارك.
ا. اوافق بشدة () ب. اوافق () ج. غير مقرر () د. لا اوافق () هـ. لا اوافق بشدة ()
4. لا يوجد عذر مقنع للانسان لتعاطي المخدرات او تعاطي الكحول. الرجاء وضع دائرة على الاجابة التي تمثل افكارك.
ا. اوافق بشدة () ب. اوافق () ج. غير مقرر () د. لا اوافق () هـ. لا اوافق بشدة ()
5. عدم الاكثار و التثقف في شراب الكحول و المخدرات هو عامل مهم في الحفاظ على صحتنا. الرجاء وضع دائرة على الاجابة التي تمثل افكارك.
ا. اوافق بشدة () ب. اوافق () ج. غير مقرر () د. لا اوافق () هـ. لا اوافق بشدة ()
6. الشرب و المخدرات اجتماعيا هو جزء طبيعي من طريقة الحياة. الرجاء وضع دائرة على الاجابة التي تمثل افكارك.
ا. اوافق بشدة () ب. اوافق () ج. غير مقرر () د. لا اوافق () هـ. لا اوافق بشدة ()
7. تعاطي المخدرات او الكحول مرة كل فترة يساعد في التخلص من النزفة و التوتر. الرجاء وضع دائرة على الاجابة التي تمثل افكارك.
ا. اوافق بشدة () ب. اوافق () ج. غير مقرر () د. لا اوافق () هـ. لا اوافق بشدة ()
8. تعاطي الكحول اجتماعيا يخدم طبقة كبير من سوق العمل. الرجاء وضع دائرة على الاجابة التي تمثل افكارك.
ا. اوافق بشدة () ب. اوافق () ج. غير مقرر () د. لا اوافق () هـ. لا اوافق بشدة ()
9. الاستخدام الحديث للكحول و المخدرات له تأثير افضل على الصحة من التأثير السمي. الرجاء وضع دائرة على الاجابة التي تمثل افكارك.
ا. اوافق بشدة () ب. اوافق () ج. غير مقرر () د. لا اوافق () هـ. لا اوافق بشدة ()
10. الشخص يجب ان يتجنب المخدرات و الشراب الاجتماعي لانه يؤدي الى الانمان. الرجاء وضع دائرة على الاجابة التي تمثل افكارك.
ا. اوافق بشدة () ب. اوافق () ج. غير مقرر () د. لا اوافق () هـ. لا اوافق بشدة ()
11. لا يجب ان يقود الشخص تحت تأثير الكحول. الرجاء وضع دائرة على الاجابة التي تمثل افكارك.
ا. اوافق بشدة () ب. اوافق () ج. غير مقرر () د. لا اوافق () هـ. لا اوافق بشدة ()

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12. شرب البيرة و الكحول او تعاطي المخدرات بآية كمية كانت له اثر سيى جدا على الصحة و الامن. الرجاء وضع دائرة على الاجابة التي تمثل افكارك.
ا. اوافق بشدة () ب. اوافق () ج. غير مقرر () د. لا اوافق () هـ. لا اوافق بشدة ()
13. شرب الكحول او تعاطي المخدرات اتناء ممارسة الرياضة قد يؤدي الى جروح خطيرة. الرجاء وضع دائرة على الاجابة التي تمثل افكارك.
ا. اوافق بشدة () ب. اوافق () ج. غير مقرر () د. لا اوافق () هـ. لا اوافق بشدة ()
14. استخدام المخدرات و الكحول هو سبب رئيسي للامراض في كل الفئات العمرية. الرجاء وضع دائرة على الاجابة التي تمثل افكارك.
ا. اوافق بشدة () ب. اوافق () ج. غير مقرر () د. لا اوافق () هـ. لا اوافق بشدة ()
15. القانون العماني يجب الا يسمح ببيع البيرة و الكحول في اي من الفنادق و المطاعم. الرجاء وضع دائرة على الاجابة التي تمثل افكارك.
ا. اوافق بشدة () ب. اوافق () ج. غير مقرر () د. لا اوافق () هـ. لا اوافق بشدة ()
16. تعاطي المخدرات و الكحول في مجموعات يساعد على جعل الشخص محبوبا . الرجاء وضع دائرة على الاجابة التي تمثل افكارك.
ا. اوافق بشدة () ب. اوافق () ج. غير مقرر () د. لا اوافق () هـ. لا اوافق بشدة ()
17. الكحول و المخدرات تساعد الشخص على كسب الثقة بالنفس في المواقف الاجتماعية. الرجاء وضع دائرة على الاجابة التي تمثل افكارك.
ا. اوافق بشدة () ب. اوافق () ج. غير مقرر () د. لا اوافق () هـ. لا اوافق بشدة ()
18. تتحمل الحكومة مسؤولية كبيرة في ضبط و استهلاك المخدرات و الكحول. الرجاء وضع دائرة على الاجابة التي تمثل افكارك.
ا. اوافق بشدة () ب. اوافق () ج. غير مقرر () د. لا اوافق () هـ. لا اوافق بشدة ()

القسم الثالث : العلاقات و القيم الاسرية.

الرجاء اقرأ العبارات التالية جيدرا اجب بما يعكس احساسك بشفاافية.

1. اذا عرض علي اصدقائي سجانر , سيصعب علي الرفض . الرجاء وضع دائرة على الاجابة التي تمثل مشاعرك.
ا. اوافق بشدة () ب. اوافق () ج. غير مقرر () د. لا اوافق () هـ. لا اوافق بشدة ()
2. اذا عرض علي اصدقائي الكحول او المخدرات سيصعب علي رفضها. الرجاء وضع دائرة على الاجابة التي تمثل مشاعرك.
ا. اوافق بشدة () ب. اوافق () ج. غير مقرر () د. لا اوافق () هـ. لا اوافق بشدة ()

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3. في بعض المرات قد شربيت الكحول لان اصدقائي الحوا علي بذلك. الرجاء وضع دائرة على الاجابة التي تمثل مشاركتك.
ا. اوافق بشدة () ب. اوافق () ج. غير مقرر () د. لا اوافق () هـ. لا اوافق بشدة ()
4. في بعض المرات تعاطيت المخدرات لان اصدقائي الحوا علي بذلك. الرجاء وضع دائرة على الاجابة التي تمثل مشاركتك.
ا. اوافق بشدة () ب. اوافق () ج. غير مقرر () د. لا اوافق () هـ. لا اوافق بشدة ()
5. اشعر بالضغط عند الشرب او تعاطي المخدرات عندما لا اتعاطاها. الرجاء وضع دائرة على الاجابة التي تمثل مشاركتك.
ا. اوافق بشدة () ب. اوافق () ج. غير مقرر () د. لا اوافق () هـ. لا اوافق بشدة ()
6. اذا شرب اصدقائي الكحول سيصعب علي مقاومة الشرب. الرجاء وضع دائرة على الاجابة التي تمثل مشاركتك.
ا. اوافق بشدة () ب. اوافق () ج. غير مقرر () د. لا اوافق () هـ. لا اوافق بشدة ()
7. اذا تعاطى اصدقائي المخدرات سيصعب علي رفضها. الرجاء وضع دائرة على الاجابة التي تمثل مشاركتك.
ا. اوافق بشدة () ب. اوافق () ج. غير مقرر () د. لا اوافق () هـ. لا اوافق بشدة ()
8. لم يكن سهلا علي الشرب في الحفلات. الرجاء وضع دائرة على الاجابة التي تمثل مشاركتك.
ا. اوافق بشدة () ب. اوافق () ج. غير مقرر () د. لا اوافق () هـ. لا اوافق بشدة ()
9. لم يكن سهلا علي تعاطي المخدرات في الحفلات. الرجاء وضع دائرة على الاجابة التي تمثل مشاركتك.
ا. اوافق بشدة () ب. اوافق () ج. غير مقرر () د. لا اوافق () هـ. لا اوافق بشدة ()
10. في بعض الاحيان كنت قد استخدمت الكحول و المخدرات بسبب ارغامي علي ذلك من اصدقائي المقربين. الرجاء وضع دائرة على الاجابة التي تمثل مشاركتك.
ا. اوافق بشدة () ب. اوافق () ج. غير مقرر () د. لا اوافق () هـ. لا اوافق بشدة ()
11. اذا علم قارب والذي يشربي الكحول او تعاطي المخدرات فاتهم سيشعرون بالاحباط. الرجاء وضع دائرة على الاجابة التي تمثل مشاركتك.
ا. اوافق بشدة () ب. اوافق () ج. غير مقرر () د. لا اوافق () هـ. لا اوافق بشدة ()
12. كم من اصدقائك يستعملون الكحول او المخدرات ؟
ا. لا احد.
ب. البعض.
ج. لا اعلم.
د. الكثير.
هـ. الجميع.

القسم الرابع : ما الذي تعتقد انك فاعله في المواقف المختلفة؟
الرجاء اختيار رد فعل لكل موقف مختلف. معبرا عما كنت ستفعله في كل موقف.

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Department of Modern Languages and Literatures

August 4, 2016

Dear Mrs. Muna Ajzoon

Attached is documents that you have send a long with the Arabic translation and the translation back into English, of all the documents you've provided me with. Good luck and please feel free to get back to me any time you need. Thank you for your trust in me to do this task.

Malik MB

Translation from English into Arabic & back into English

This is to certify that the attached documents of the research investigator, Mrs. Muna Ajzoon, were translated from English into Arabic and back to English. The translation was done to be available to any Arabic speaker at the standard version of Modern Standard Arabic, to the best of knowledge and abilities in both languages. I can be reached at the address below, as well as my personal email, balla@oakland.edu. or at my direct office phone 248-370-4606 or my cell phone 517-410-7112.

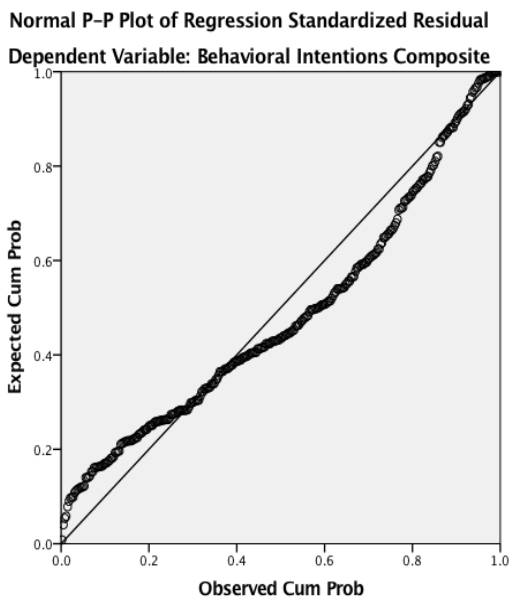
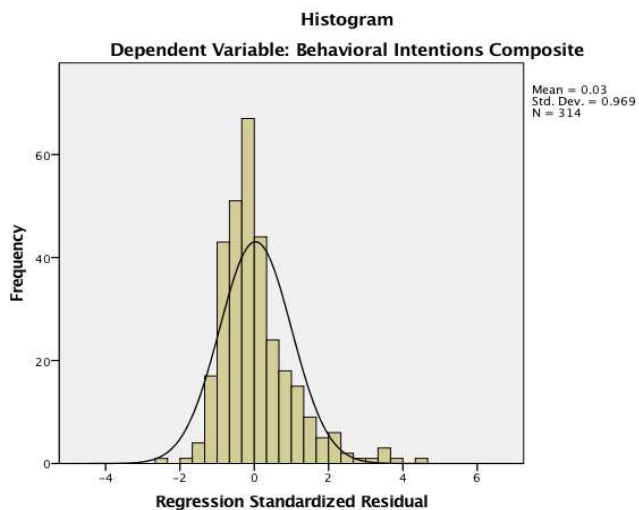

Malik Balla, PhD

Associate Professor of Arabic,

Director of Islamic Studies Program

APPENDIX K

Hierarchical Regression Histogram & P-P Plot



VITA

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EDUCATION

- Old Dominion University
 Doctor of Philosophy in Health Services Research 2017
- Villanova University
 Master of Science in Nursing Education 2003
- Villanova University
 Bachelor of Science in Nursing 1999

WORKSHOP AND PROFESSIONAL TRAINING

- Old Dominion University
 Global Health Certificate 2016
- Eastern Virginal Medical School (EVMS)
 Internship in Family & Community Medicine
 Behavioral Health 2015
- Innovations in Nursing
 Education & Practice leading to Quality care
 Sultan Qaboos University-Muscat 2011

PROFESSIONAL EXPERINCE

- Dean of Salalah Nursing Institute- Oman 2010-2012
- Acting dean in Salalah Nursing Institute- Oman 2006-2009
- Assistant Tutor in Salalah Nursing Institute- Oman 2004-2005
- Clinical Instructor Salalah Nursing Institute- Oman 2000-2001
- Staff nurse Sultan Qaboos Hospital -Oman 1997-1998

PUBLICATIONS & PRESENTATIONS

- Tufts, K. A., Johnson, K. F., Shepherd, J. G., Lee, J. Y., Ajzoon, M. S. B., Mahan, L. B., & Kim, M. T. (2015). Novel interventions for HIV self-management in African American women: a systematic review of mHealth interventions. *Journal of the Association of Nurses in AIDS Care*, 26(2), 139-150.
- Ajzoon, M. (2007). *Omani Nurses' Burnout in Sultan Qaboos Hospital*. Paper presented at GCC International Conference Dubai- United Arab Emirates.