The Application of General Strain Theory to College Students and their Misuse of Prescription Medication

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and their Misuse of Prescription Medication

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ABSTRACT

This thesis investigates possible associations between college students and their lifestyle choices with the misuse of prescription drugs in comparison to their academic achievements. Based on the literature regarding Robert Agnew's General Strain Theory and the misuse of prescription pain medication, sedatives and stimulants, the four hypotheses were tested:
H1: College students who misuse prescription drugs have lower G.P. A's than college students who do not misuse prescription drugs. H2: In order to deal with the stress of college life, students will self-medicate as a way of coping. H3: Most college students will use prescription drugs non-medically for the purpose of improving grades. H4: Undergraduate students in their first and second years of college are more likely to misuse prescription medication than juniors, seniors, and graduate students.

A total of 184 students from Youngstown State University responded to the College Prescription Drug Study (2018), administered by The Ohio State University's Center for the Study of Student Life, Student Life Student Wellness Center, and the College of Pharmacy. There was support for two of the four hypotheses regarding college students who misuse prescription medication. There was support of college students misusing prescription medication to help manage their stress and there was also support linking the reason why most college students misuse prescription medication to help study and/or improve grades. There was no support linking the relationship between drug use and GPA as well as no support for the idea that college students in their first and second years of college are more likely to misuse prescription medication than junior, seniors and graduate students. The findings add to the substantial literature examining drug use and academic achievement. Future research is recommended in order to develop ways in which college students can feel at ease in their environment as well as finding ways to cope and manage stress. This can lead to achieving academic success while educating college students on the prevention of prescription drug misuse.

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Chapter One

Introduction

According to the *Substance Abuse and Mental Health Services Administration*, 1 in 5 Americans ages 12 and older have reported abusing prescription drugs at least once in their lifetime (2015). According to the 2011 Drug Abuse Warning Network, 34% of emergency department admissions were due to people misusing prescription drugs. As of 2012, the misuse of prescription drugs was responsible for 31% of first-time illicit drug use among individuals aged 12 and older, only behind marijuana (Substance Abuse and Mental Health Services Administration, 2013). Rates averaged across 2012 and 2013 show that more than half of the nonmedical users of pain relievers, tranquilizers, stimulants, and sedatives aged 12 or older obtained the prescription drugs they most recently used from a friend or relative for free (Substance Abuse and Mental Health Services Administration, 2013). There are many examples of prescription misuse. Whether it is a twelve-year-old misusing their parents' prescription medication or a college student experimenting with prescription drugs, these medications are being used for illicit purposes. Although, alcohol is still the number one most commonly used mind-altering substance on college campuses (Wechsler et al., 2000), there is a reason to look at other drugs.

Historically, Marijuana is seen by high school students to be less harmful than other drugs (Luce & Merrell, 1995). In 1997, 54% of high school students said they have used at least one drug other than marijuana. According to the Office of National Drug Control Policy in 1998, drug use is very common among adolescents. Not only are high school students experimenting with drug use, it is also common for college students to

recreationally use drugs as well. According to data from the 2016 Monitoring the Future Study, 20.6% of college students indicated having used stimulants, sedatives, and prescription pain medication for nonmedical purposes during the past year (Schulenberg et al., 2017).

Ecstasy, prescription painkillers, stimulants, and sedatives are the most detrimental substances being misused by young adults (Monitoring the Future, 2005). Ecstasy, often referred to as Methylenedioxymethamphetamine (MDMA), is a stimulant with hallucinogenic properties. The drug is known to create high intense energy, raise blood pressure, and make users feel social. This drug is dangerous because it overheats the body and creates an increase in body temperature which can cause dehydration and general weakness.

Other stimulants which have similar effects as ecstasy are prescription medications such as Dexedrine, Ritalin, and Adderall. These prescription stimulants can cause high blood pressure, nervousness and create an increase in energy. Long term misuse of these drugs can cause mental illness, heart failure, seizures, and even death (Watkins, Ellickson, Vaiana, & Hiromoto, 2006). Dexedrine, Ritalin, and Adderall are known to be highly addictive when being misused. A tolerance develops which can make it hard for anyone to stop using the drug. Withdrawal from these drugs can lead to irritability, anger, intense hunger and disturbed sleep (Ridenour, Maldonado-Molina, Compton, Spitznagel, & Cottler, 2005).

Sedatives such as Valium and Xanax are central nervous system depressants which slow down brain function. These drugs can be dangerous because they can lead to an overdose when taken incorrectly, especially when mixed with alcohol or other drugs.

The normal reflexes that protect one's airways may be slower than normal when taking a sedative. In an overdose state, this can cause a person to choke on their own vomit (Ridenour et al., 2005).

Prescription medication such as OxyContin, Darvon, Vicodin and Percocet are medically used to reduce pain. When prescription pain killers are taken incorrectly, it can leave someone, particularly an adolescent, with internal and external emotional, psychological and physical damage. Examples of emotional damage an adolescent can face from chronic drug use is interpersonal confusion and loss of relationships (Ridenour, Maldonado-Molina, Compton, Spitznagel, & Cottler, 2005). Examples of psychological damage are sleep deprivation, extreme hyper- or hypothermia, and drug withdrawal. Examples of physical damage are heart conditions, loss of motor coordination, and violent and unpredictable behavior (Lee & Ross, 2011). Prescription pain medication is intended to treat patients who suffer from chronic pain. The medication tends to slow down the body's normal process by reducing heart rate which produces a sense of calmness. Teens and young adults can become addicted quickly if the drugs are being misused. They will need more of the substance in higher doses because of the tolerance that has been built over time. Misusing prescription pain killers can have permanent effects on the brain such as chronic depression and loss of interest in daily activities (Watkins et al., 2006).

Medically prescribed pain medication appears to be the drugs college students are using the most, especially those who are struggling academically (Arria, 2010). By studying these students, we are able to analyze certain behavior patterns and characteristics that may be of concern for future college students.

For this thesis, I examined four different hypotheses as they relate to my research question of college students and their behaviors of drug use, focusing on prescription medication. My four hypotheses are as follows:

H1: College students who misuse prescription drugs have lower G.P. A's than college students who do not misuse prescription drugs.

H2: In order to deal with the stress of college life, students will self-medicate as a way of coping.

H3: Most college students will use prescription drugs non-medically for the purpose of studying to improve grades.

H4: Undergraduate students in their first and second years of college are more likely to misuse prescription medication than juniors and seniors.

Chapter Two

Literature Review

According to the *National Drug Control Policy* of 2011, the fastest growing drug problem in the United States is now the misuse of prescription medication. There is a concern involving college students and their misuse of prescription medication, which is known as nonmedical prescription drug use. Non-medical prescription drug use is defined as: using a medication either without a prescription or in a way other than intended (National Institute on Drug Abuse, 2018). The most common cited reasons for college students engaging in non-medical prescription drug use is to relieve pain and for recreational and intellectual (studying) purposes (Babcock & Byrne 2000; Low & Gendaszek 2002; Teter et al. 2005). The most commonly used prescription drugs among college students are stimulants, sedatives and prescription pain medication (Andes, Wyatt, Kiss, & Mucellin, 2014).

Combining alcohol with prescription drugs can increase the likelihood of drug related problems and dependency issues (McCabe et al., 2009). A study from a Southern University examined prescription drug misuse among a sample of undergraduate college students using the tenets of social learning theory to identify potential risk factors for misuse. There were 841 students chosen to participate in this study. A survey was given to the students that asked questions related to particular drugs such as stimulants, sedatives, pain relievers and anti-depressants. Each student from the class was asked if they have misused a prescription drug in the last academic semester. The survey also asked questions which involved their peers and their perceptions about what prescription drugs they were using. In that study, 87% of participants indicated that none or only some

of their friends misused prescription medication. Similarly, 60% reported that their friends would react negatively if they publicized their use of non-medical prescription drug use, and 30% of respondents reported that using prescription drugs without a prescription is okay. Younger adults are more likely to engage in behavior which their peers approve even if that means misusing prescription drugs (Watkins, 2016). Those who felt positive reinforcement from non-prescription drug use had a higher chance of using these drugs in the future than those who had a negative experience.

The first noticeable trend of students using prescription drugs for nonmedical reasons was in the early 2000's (Shulenberg et al., 2017). According to the *American College Health Association*, non-medical prescription drug use has significantly increased on college campuses since 1999 and is the second-most illicit drug used behind marijuana. Young adults between the ages of 18-22 can be prescribed medications such as stimulants, sedatives and opiates for their health conditions. Certain health conditions such as Attention Deficient Hyperactivity Disorder (ADHD), Anxiety, and pain after a major surgery will require these medications to be prescribed. Young adults aged 18-22 are also more sensitive to addiction because of the increase in independence afforded to them compared to when they were supervised under parental controls (Martins, Kim, Chen, Levin, Keyes, Cerdá, & Storr 2015). An adolescent brain is still developing throughout the teen years and into adulthood. This causes the adolescent to have a heightened biological vulnerability for the development of addiction (Chambers, Taylor, & Potenza, 2003). Adolescent substance abuse can disrupt brain development and while the changes can be lessened over time, other changes can cause permanent damage. The

long-term damage caused by drug use can be deficits in memory and motor coordination (National Institute on Drug Abuse, 2001; Tapert & Shweinsburg, 2005).

College Environment

For some students, college's social activities are difficult to ignore. Whether you prefer extracurricular activities or a school's party culture, all such diversions and pastimes can easily spin out of control. Most students describe their college experience by the people they surround themselves with and the parties and gatherings they attend (Schulenberg, Bachman, O'Malley, and Johnston 1994; Tolone, Tieman, and Cash, 1990). There could be pressure from their peer group to experiment with drugs as a way to fit in and feel accepted, even if this was not their ideal way of making friends. The partying and experimenting with drug use can become their predominant way of life which can cause strain in other areas of their life such as poor grades and not getting enough sleep. The grade point average (GPA) of a student defines their academic achievement while attending college. Taking part in prescription drug misuse can have negative effects on GPA, which is in correspondence to H1: College students who misuse prescription drugs have lower G.P. A's than college students who do not misuse prescription drugs. There has been limited research done with the comparison of college GPA and drug use although the secondary data in the methodology chapter in this thesis will be useful for the comparison. The relationship between academics and drug use is that the latter has a negative influence on academic performance. This strain can lead to the misuse of prescription drugs which relates to H2: In order to deal with the stress of college life, students will self-medicate as a way of coping.

Each individual generates their own way of life, although as humans we often

times circulate the same patterns of behavior as others because of the environments we create (Lewis & Osborn, 2004). When attempting to understand a young adult who wants to experiment with drugs, often times it is their peers and the environment where they place themselves that has a substantial influence on their behavior. Some researchers have suggested that young adults today tend to focus less on the risk factors of using drugs and more on the social enjoyment and pleasures that drugs provide (Järvinen & Østergaard, 2011). A study provided by Järvinen & Østergaard (2011), found that the correlation between young people and their perceptions on drugs are strongly based on their own experiments with drugs (Calafat et al., 2008; Danseco et al, 1999; Duncan et al., 1995; Parsai et al., 2009). This included that if a person has used a specific drug, they deemed it to be safe. The most active party-goers seemed to have the most positive attitudes when it comes to experimenting with drugs. The researchers concluded, "friend groups" tend to gravitate toward each other and have very strong influences on one another when they are involved in similar behaviors (Järvinen & Østergaard, 2011). It is common for college students to go through tribulations and failures throughout their academic career (Pate & Bolin, 2019). Examples of these tribulations are receiving an unwanted grade or failing a particular class.

Robert Agnew's General Strain Theory

Multiple types of Strain Theory exist in the discipline of sociology linking certain behavior to deviant actions. Merton's Strain Theory of 1938 has been commonly used in examining theories of criminality (Merton, 1938). His theory focuses on the strain that comes with having socially approved goals without legitimate means, often times considered the success of the "American Dream" which can bring on social and

economic pressure (Merton, 1938). The "American Dream" is sometimes not possible for all members of society and therefore people choose to commit deviant acts as a way to get there, such as petty theft or robbery. Robert Angew's General Strain Theory applies properties from Merton's strain theory along with combining the effects of the presentation of a negatively valued stimuli and the loss of a positive valued stimuli. The focus of this thesis will be on Robert Agnew's General Strain Theory. I will be using this framework to examine the relationship between college students and misuse of prescription drugs.

General Strain Theory was developed by Robert Agnew in 1992. Here, strain refers to relationships or lack of achieving goals (Agnew, 1992). Physical abuse, receiving poor grades, the end to a friendship or a romantic relationship and a person's personal evaluation of an event. Strain tends to bring out negative unwanted emotions in people such as anger, frustration, despair and possibly depression. One response to these emotions can be crime or deviant behavior. A person can have a built up of emotions, particularly frustration, which is not being released. Negative emotions often times center around negative relationships between peers, family members, classmates in college, and romantic partners as well as failure in college.

The three types of strain Agnew highlights are: the inability of individuals to achieve their goals with the disjunction of expectations and achievements, the presentation of noxious or negatively valued stimuli, and the loss of positively valued stimuli (Agnew, 1992, p. 52). Some people have a hard time achieving their goals because the goals seem far out of reach for them, which can lead to feelings of disappointment and dissatisfaction. A student whose goal is to be successful and wealthy

may not be able to obtain those goals because of financial reasons, which can lead them to committing acts of deviance in order to fill that emotional void. They feel a loss of accomplishment which creates strain in other relationships in their life. This strain becomes heavy when people start comparing themselves to other people. This can lead to self-doubt and feelings of not being good enough, or as good as their peers. This feeling of jealously or hostility towards another person can create a negative environment.

The second type of strain involves the presentation of noxious or negatively valued stimuli, referring to being abused or being bullied or harassed from peers as well as negative relationships with family members. This type of strain centers on interactive relationships in which a person is exposed to circumstances that are not desirable but are not preventable either. For example, when a child matures from childhood to an adolescent, they become concerned about what their peers think and being accepted by their peers.

The third type of strain is loss of positively valued stimuli. This type of strain focuses on the loss of a valued property or the loss of a romantic relationship or friendship. The death of a loved one or moving to a new school, such as college, can create strain on an individual and the individual may act out because they are fighting against the change, trying to prevent the loss from feeling real. They try and obtain substitutes over what has been lost and seek revenge for the loss against the person who created it. All three types of strain bring on negative unwanted emotions that can cause a person to react inappropriately in order to cope with the situation. Agnew (1992) states that "Strain Theory is distinguished from social control and social learning theory in its specification of (1) the type of social relationship that leads to delinquency and (2) the

motivation for delinquency" (p. 48). Strain Theory explains how deviance can come from certain social relationships, especially negative relationships in which an individual does not like how they are being treated. Often times these relationships prevent the person from achieving certain goals which are positively valued. Strain can set the stage for individual failure and can become a search for deviant solutions (Brown, Esbensen, & Geis, 2013).

Some may look at a problem or certain task and become frustrated with it before they even start. This can leave them wanting to give up because they are experiencing negative emotions of not being able to get the job done or that the effort is inadequate to the reward. For example, a student failed a test but studied for hours and felt as though they should have done better. The amount of time the student spent studying is not reflected by the grade he/she received. This leads to the student becoming frustrated and turning to deviant behavior as a result of those negative emotions. Deviant actions, such as the student cheating on the next exam or binge drinking instead of spending hours studying, can substitute for their loss of positive stimuli. This can happen when people become stressed over their environment and turn to deviance to fill the void of frustration to accomplish what they want, even if illegitimately.

Not all youth will become delinquent when engaged in negative emotions, rather it will depend on their intra and inter-personal ways of coping, because every individual copes differently. Thus, strain is not necessarily the main cause of delinquency but a mechanism that interacts with strategies of coping that increase the probability of acting out in a delinquent or deviant manner (Agnew, 1992). Coping with strain can be different for every individual, and as humans we have the ability to react aggressively to negative

situations. The reaction of an individual can come from their overall life experiences as well as their personality traits. College students are susceptible to feelings of strain because of the adaptation to the new lifestyle, developing new peer groups and the possibility or non-possibility of romantic relationships. Students are also being challenged with a different standard of course work academically, which can be demanding and bring on negative or un-wanted emotions such as stress, anxiety and depression. Each individual will have their own personal strain and have different ways of coping. One way students may decide to cope with their strain is by misusing illicit drugs, overconsumption of alcohol, as well as the misuse of prescription pain medication.

My second hypothesis states, in order to deal with the stress of college life, students will self-medicate as a way of coping. Students have high hopes of achieving their goals in college. A student will work extremely hard to get there but may not receive their desired goal which can cause strain. Strain is brought upon by working hard for something and not receiving it and turning to deviant behavior to substitute for the feelings of discouragement. A student may turn to medicating themselves as a way of coping or relieving the stress. If they feel anxiety, they turn to sedatives because sedatives are known to help relieve anxiety and promote sleep, but they also might turn to pain relievers to numb the stress. However, students may engage in non-medically necessary prescription drug use to help them become more efficient in their studies.

My third hypothesis is that college students will use prescription drugs non-medically, especially stimulants, for the purpose of studying to improve grades, rather than to get high. The strain a college student faces when trying to maintain a healthy lifestyle, create and obtain a peer group, get enough rest, and handle multiple classes

simultaneously can become overwhelming. They become disheartened by the negative stimuli of having too much on their plate and not having enough energy to do well academically which can make stimulants appealing to the strain in their life.

My fourth hypothesis is that undergraduate students in their first and second years of college are more likely to misuse prescription medication than students in their third or fourth year or graduate students. When someone is presented with a new lifestyle or a change, they become frightened. They may have preconceived feelings of not being accepted or feeling as if they will not do well. These negative emotions can cause a build up of strain. Undergraduate students are more at risk for misusing prescription pain medication to avoid feelings of discomfort when getting accustomed to a new lifestyle. Students in their third or fourth year or graduate students, have had time to become used to the college way of life. Their strain is not completely gone, but it has decreased or become manageable.

Agnew's Strain Theory and Students

There has been limited research testing Strain Theory within the college community, however there is research testing the theory on high school students and delinquency. According to Baron (2003), the choice to commit acts of deviance compared to the choice not to commit acts of deviance is said to be influenced by various conditions such as deviant peers, attitudes, self-esteem, self-efficacy and external attributions (p. 458). This study applied aspects of GST to a higher risk sample of homeless street youths, the victimization that occurs on the streets, and the failure to achieve goals which can result in unemployment and dissatisfaction. This study looked at how strain can give a young adult a negative image of themselves in terms of self-esteem

and self-efficacy. The interview asked students how often they broke into cars, stole cars, have been physically attacked, physically attacked someone else and how many times in the past year they had personal items stolen from them. The interview also asked questions about childhood traumas such as being abused or neglected, which relates to the presentation of a negative valued stimuli. The results indicated that strain leads to anger with total crime correlating strongly to deviant peers and deviant attitudes.

According to Aseltine, Gore, and Gordon (2000), exposure to stress as well as relationship strain are positively associated with deviant behavior. This study looked at 9th, 10th, and 11th graders measuring their stress, mental health, and social adaptation. These youths were then re-interviewed in person or over the telephone two years later. The measurement of delinquency was conducted by asking the youth questions such as have they ever stolen anything, driven while impaired, ran away or taken a car without permission. Approximately 35 percent of youths reported committing one or more delinquent acts in the past year. They compared this deviant behavior to the negative life events experienced by the respondent in the last year, frequency of arguments with mother and father and the degree to which family members have arguments amongst each other, which is how strain was measured. The interview also asked questions of self-esteem, exposure to delinquent peers, how often they have the urge to break things and how often they experience feelings of frustration and annoyance. This study concluded that negative past life events as well as dysfunction in family life are positive and significantly related to drug use (Aseltine, Gore, Gordon, 2000).

A study by Bachman, Wadsworth, O'Malley, Johnson, and Shulenberg (2007), used a structural equation model to compare the effects between school success, drinking,

and depression. It identified the direct and indirect strain and ways of coping in regard to stress and the impact it has on grade point average (GPA). They created two hypotheses, the first one was that GPA will have a direct and negative impact on depressed mood, suggesting that poor GPA will increase depressed mood. The second hypothesis stated that drinking occasionally will negatively affect GPA. Data was collected from the longitudinal Youth Developmental Study of 1,139 randomly selected 9th to 12th graders enrolled at the St. Paul Public school system. Variables such as race, family composition, drinking habits, depression, and GPA were all observed on the survey. Success was measured by each student's self-reported GPA. There was support for the hypothesis that drinking has a direct and negative impact on GPA in regard to 9th and 10th grade students, although there was mixed support for 11th and 12th grade students. Lower grades have predicted more frequent drinking. The other hypothesis, GPA is expected to have a direct and negative impact on depressed mood was supported by 10th, 11th and 12th graders but not by 9th graders. These results indicate that behavioral and emotional coping are parallel mechanisms linking strain, distress, and drinking. There was a noticeable chain of events linking GPA, and depression on drinking and GPA, and drinking on depression.

Agnew's Strain Theory provides the theoretical framework in this study, comparing the strain college students are under with the risk of them turning to the consumption of non-medical prescription drug use. Agnew defines strain as events or conditions that are disliked by the individual (1992). The student can become enraged or feel as though they are a failure when they receive an unwanted grade in which they had high hopes of success. This becomes a loss of a positive stimuli because they feel as though they are losing something in which they value.

College students can also face strain in their relationships, such as having roommate problems or ending a relationship with a significant other. Some students choose to engage in non-medical prescription drug use in order to cope. According to Agnew (1992) in order for strain to occur, there must be negative emotions taking place that make the individual want to act in a deviant manner. General Strain Theory insists that an individual may turn to deviance to relieve stress from a certain situation that produced enhanced negative emotions. It seems as though non-medical prescription drug use can be tied to emotions, especially emotions that are negative. Some individuals lack coping mechanisms in order to deal with negative emotions that are taking place, so in correspondence to H2: In order to deal with the stress of college life, students will self-medicate as a way of coping. Non-medical prescription drug use is one way students decide to cope with their strain. People, in general, often use substances in order to escape from reality or manage their stress (Pedalono & Frailing, 2018; Schroeder & Ford, 2012; Vegh, 2011). It can be assumed that this would be true of college students, although there is limited research to support this to date.

Sources of Strain among College Students

In correspondence to H2: In order to deal with the stress of college life, students will self-medicate as a way of coping, the following research provides insight as to which college students are stressed and the different reasons behind the stress. According to Struthers, Perry, and Menec (2000), the most commonly reported stress related problems in college were anxiety (24.3% of women and 11.4% of men) and depression (18.8% of women and 10.5% of men) (Struthers et al., 2000). A recent nationally representative survey conducted by the *American College Health Association* (2017) found that 45.1%

of college students reported experiencing higher than average levels of stress, and 12% reported tremendous amounts of stress. Similarly, 87% of students felt overwhelmed with responsibilities within the last year, and 84% felt mentally exhausted (American College Health Association, 2017). The most common stressors rated by students as "traumatic or very difficult to handle" were academics (47.5%), finances (31.8%), intimate relationships (30.9%), and sleep problems (30%). Women, compared to men, reported being affected more by each of the 11 individual stressors asked about on the survey.

Ford and Schroeder (2009), found that students who have academic strain tend to have higher levels of depression. Depression is most severe among adults between the ages of 18 to 25 years old (Substance Abuse and Mental Health Services Administration, 2016). This is the same age group as traditional college students and why it is important to know what college students experience in terms of stress and how they cope with their stress and depression.

Another common form of strain among college students is academic strain and strain among friendships and significant others. Having a heavy class schedule, test taking, balancing time for projects and having a low-grade point average can cause strain (Agnew & White, 1992; Beiter et al., 2015; Ford & Schroeder, 2009; Kumaraswamy, 2013; Vowell & Chen, 2004). A student that was successful in high school and not as successful in college may experience strain due to a change in their academic setting. If a student has to work forty hours a week, or even less in order to pay bills and survive, there can be a strain financially and emotionally which can lead to negative effects on their academic performance.

There are intimate relationships which can form over a period of time while a

student is attending college. Both being in a relationship and not being in a relationship can cause strain on an individual. According to the 2011 *College Dating Violence and Abuse* Poll, 43% of women in college who have dated reported being in an abusive or violent relationship (Knowledge Networks, 2011). This can cause strain to the student's life on campus in terms of their academic performance and influence their decision to use non-medical prescription drugs. Research indicates that one of the top stressors of college students is the ability to form significant relationships (Jackson & Finney, 2002). In order to cope with their pain of loss in a relationship or not being able to attain a romantic relationship, students are more likely to use prescription drugs for non-medical purposes.

Family characteristics can also play a part in the lifestyle of a drug user. Older siblings may influence whether or not a younger sibling experiments with drug use or contrarily, a stricter family can create resilience against drug use (Whiteman, Brook, & Gordon, 1991). College students who live with their parents have lower rates of drug and alcohol use than students who do not live with their parents, concluding that a college student's family can effect whether they choose to engage in drug use (Bell et al. 1997; Gfroerer, Greenblatt & Wright 1997; Gliksman et al. 1997).

Peer influences have been noted to be one of the most important characteristics in a young person's life, especially a student who is in the process of learning to be on their own (Mustaine & Tewksbury, 2004). Some research suggests that peer influences are more important than family characteristics. Drug use among peers is not directly in the form of peer pressure where students are being bullied into doing the drugs, rather a lifestyle of the college student in terms of being socially accepted. One factor of a college student's lifestyle is that they are influenced by a new-found independence with a variety

of choices to make for themselves regarding who they will invite into their lives, how hard they will study, and what kind of activities they will engage in (including drug and alcohol use) (Mustaine & Tewksbury, 2004).

For those with real medical issues, it is unclear whether students are taking their prescribed drugs as they should be, for example, consistently taking the prescribed amount. Research has shown that one third of users who are on antidepressants stopped taking their medication altogether within the first six weeks (Maddox , Levi , & Thompson, 1994). Most prescription bottles have a warning label on the harm associated with taking the medication with alcohol or other drugs, although not everyone follows that warning label. When a student mixes their medication with alcohol, it can have detrimental consequences such as the loss of motor skills (Castaneda, Sussman, Westreich & Levy, 1996). This can be very dangerous for the overall health of a student and function of daily activities.

A 2008 study examined the ways in which prescription drugs were being prescribed to college students and if the students were taking the medications as directed. The participants of this study were accepted into the study if they answered yes to the question, “Are you currently taking medication to help you cope with depression, anxiety, panic attacks or severe mood swings?” The interview assessed which medication the student was on, the consistency of taking the medication, and how often they see their psychiatrist. The results of the study showed that college students saw their physician regularly and each visit they were screened for their symptoms. Students admitted to taking their prescription in different quantities than prescribed, and 70% of students combined their medication with alcohol and other illicit drugs. This suggests that college

students and their physicians should communicate with each other better, in an attempt to control over medicating (Oberleitner, Tzilos, Zumberg & Grekin, 2011). The phenomenon that college students use prescription drugs that are not medically prescribed to them for recreational purposes, is turning into the phenomenon that college students are using these drugs as a form of self-medicating (Dowling, Storr & Chilcoat 2006; SAMHSA 2007), which is in relation to H2: In order to deal with the stress of college life, students will self-medicate as a way of coping.

College Students who Self-Medicate

The medical definition of a Psychotropic drug is any drug capable of affecting the mind, emotions, and behavior (*MedicineNet,* 2018). Some legal drugs, such as lithium for bipolar disorder and Illicit drugs, such as cocaine, are classified as psychotropic. These drugs are capable of effecting behavior and bringing on different emotions, particularly emotions of happiness and alertness. The use of these drugs has dramatically increased in past years, especially among college students. Data from the *National Health and Nutrition Examination* survey examined persons not institutionalized from the years of 1994-1998 to the years of 1999-2002 and found an increase in the number of students taking prescription drugs. There is a concern that students are using these drugs without a prescription and are not worried about the side effects or harm that can go along with them. A horrific side effect of these drugs is suicide. If a patient is experiencing suicidal thoughts or other frightening side effects, the doctor can and should change the dosage or change to a different medication altogether.

Prescription drugs are often looked at as being safe because they are regulated by the U.S Food and Drug Administration (Manchikanti, 2006). In 2009, the *National*

Survey on Drug Use and Health researched the possible link between non-medical prescription drug use and mental illness among college students. The survey found that 6% of adults, mostly white females, aged 18-25 were known to have a mental illness and were prescribed drugs (Substance Abuse and Mental Health Services Administration, 2010). However, males and non-whites were more likely to have a substance abuse problem or become dependent on a drug (Substance Abuse and Mental Health Services Administration, 2010).

College Students Use of Stimulants to Improve Grades

The most common drugs young adults between the ages of 18-25 are self-medicating with are stimulants, sedatives, and tranquilizers (Substance Abuse and Mental Health Services Administration, 2016). Students self-medicate with drugs that they find help their symptoms, most often symptoms of ADHD, depression and anxiety. They also help their peer's do the same by finding a drug that is available (without the means of a prescription) that will help their peer's symptoms of anxiety, depression or their inability to concentrate (Arria & DuPont, 2010; McCabe, Cranford, et al., 2007; McCabe et al., 2004; Varela & Pritchard, 2011). The daily routines of a student's life can wear the student down and make them feel as though they have a problem worthy of medicating, whereas it could only be the stressors of their daily lifestyle. Research here will provide an explanation of what a stimulant is, who is using them, and for what purposes. This discussion focuses in on H3: Most college students will use prescription drugs non-medically for the purpose of studying to improve grades.

Stimulants act on the central nervous system to improve attention and concentration and are primarily used to treat Attention Deficit/Hyperactivity Disorder,

most commonly known as ADHD (Loe, 2008). ADHD is the most common childhood psychiatric disorder and is characterized by a "persistent pattern of inattention and/or hyperactivity- impulsivity that is more frequently displayed and is more severe than is typically observed in individuals at a comparable level of development" (American Psychiatric Association, 2000). Over the past two decades, a high number of children, adolescents, and adults in the United States have been diagnosed with Attention-Deficit /Hyperactivity Disorder (ADHD) and prescribed treatment with medications such as Ritalin and Adderall. Stimulants, such as Adderall, are consistently proven to be effective for treating ADHD symptoms and improving academic performance, especially among college students (Swanson, Baler, and Volkow 2011; Zoëga, Valdimarsdóttir, and Hernández-Díaz, 2012). Although, when taking a stimulant such as Adderall and you are not diagnosed with ADHD by a professional, you may experience side effects such as headaches, loss of appetite, and jitteriness along with elevated blood pressure, palpitations, and insomnia. You are also likely to feel sluggish because of the overload of brain activity.

Students who have been on medication for a majority of their lives, particularly those who have been diagnosed with ADHD by a professional, continue the use of stimulants to treat their learning disorders when transitioning from high school to college. There are also students who take stimulant medication such as Adderall, without a prescription, during their college years. It is said that 5-15% of college students report taking Adderall to help academic performance, but most do so only on occasion (Swanson, Baler, and Volkow 2011; Zoëga, Valdimarsdóttir, and Hernández-Díaz, 2012). A college student may decide to use a stimulant because it is known to create energy.

This energy will allow the student to focus on classes and exams in a more effective manner, which is in correspondence with H3: Most college students will use prescription drugs non-medically for the purpose of studying to improve grades.

Colleges with higher entry criteria have a higher prevalence of stimulant use. According to national research conducted by public health researchers at the University of Michigan, 25% of college students on any given campus have used stimulants without a prescription. They found rates were highest at colleges in the northeastern United States and colleges with more competitive admission standards. They reported using prescription drugs to enhance, fix, and/or normalize their education experience (Loe & Cuttino, 2008).

Class Rank and Prescription Drug Misuse among College Students

Research has shown an increase of 85.7% in prescription opioid misuse from the first year of college to the second (Arria, et al., 2008), which shows an opposing view in relation to H4: Undergraduate students in their first and second years of college are more likely to misuse prescription medication than juniors, seniors, and graduate students. According to the *National Institute on Alcohol Abuse and Alcoholism* (2015), the first six weeks of freshman year are a vulnerable time for heavy drinking and alcohol-related consequences because of student expectations and social pressures at the start of the academic year. The transition of entering college has its radical shift in responsibilities, the likelihood of a sudden drop in a support system, and a change of social environments compared to high school. Students' responsibility for their academic achievement is emphasized as they progress through the education system from a first-year undergraduate to a fourth year undergraduate. Some students tend to perceive their first

year of college as having an increased amount of control. This newfound sense of control can create opportunities for the misuse of prescription medication in order to deal with the stress that comes from having an increased amount of responsibilities. If a student feels stressed because of the academic pressure to succeed as well as form relationships, especially a first or second year student, they may decide to use prescription medication as a coping mechanism. Students who go into their first year of college thinking critically about their college environment are more likely to recognize the opportunities the college environment can provide (Perry et al., 2005). For example, college students can generally decide what classes to take, when they are offered and from which professors. By thinking critically and enrolling in the classes that best fit their schedules, they are utilizing their opportunities of control. If a first year freshman student starts off their college career thinking critically and remaining focused, it can benefit them for the remainder of their career as a student. Although, some students tend to take advantage of the personal freedom found in living away from home and being able to make their own decisions (Perry et al., 2005). Class rank can be associated with opportunities of control, especially the first and second year of a student's college career. This can lead to making a choice to misuse prescription drugs, which shows the effect in H4: Undergraduate students in their first and second years of college are more likely to misuse prescription medication than juniors, seniors, and graduate students. Students who are more frequently engaged in critical thinking about their experiences in college would have a better chance of noticing these controllable aspects of their environment, which could bolster greater overall perceptions of control and lead to more academic success. Logic and empirical research suggest that the disposition to think critically is a valuable quality for college

students to possess. For example, if students believe they have the capacity to influence their academic outcomes, they are more motivated to invest the effort of thinking critically about those outcomes. Tasks in college are frequently carried out under conditions that can make students feel out of control, such as multiple exams on the same day, which can have an effect on their academic achievement. These circumstances also include emphasis on success and failure, heightened academic competition, increased pressure to excel, more frequent failure, unfamiliar tasks, new social networks, and critical career choices. In comparison with other years, freshmen endorse higher levels of ongoing and chronic stress (Misra & McKean, 2006).

A study of undergraduate students recruited from four large universities in the United States indicated that twenty seven percent of college students have reported at least one traumatic event in their lives (Frazier et al., 2009). These events can lead to an increase in the chance that the student will participate in alcohol and drug use in order to cope with their memory of that traumatic event. Individuals who have been exposed to trauma may be more reactive to their emotional stimuli. This can result in more emotional experiences a person is subjected to throughout their lifetime. Individuals with high levels of stress associated with past traumas may engage in heavy drinking or drug use in order to avoid certain emotions.

In 2011, the Clergy Center for Security on Campus organized an event known as a National Summit which took place in Pennsylvania. The focus of this seminar was the use of non-medical prescription drugs as well as binge drinking on college campuses. Over 200 participants attended the summit, most of which were law enforcement administrators and prevention educators. Both the panelists and educators engaged in a

discussion about the different trends that are happening with substance abuse among college campuses and the safety concerns of students using prescription medication for non-medical purposes. The panel then pinpointed three key areas which were of focus: the availability of prescription drugs that students are exposed to, informing pharmaceutical industry and schools of pharmacy in prevention as well as response, and eliminating different preventive strategies that are not working (Dowdall & Kiss, 2012).

The summit was used to conduct "a needs assessment" use of non-medical prescription drugs by college students. The methodology of this particular project focused around questions that were directed to law enforcement, educators and college campus leaders who attended the summit. Such questions were, "What are some of the unique challenges in addressing non-medical prescription drug use with college students on your campus?" as well as "Which policies have been effective in addressing non-medical prescription drug use in higher education institutions and communities?" (Wyatt, Kiss & Muccelin, 2014). The results of this study indicated that there is an increased need to educate key leaders on campus on prescription drug misuse and the need to implement preventative measures.

This literature review provides a backdrop for the study I am conducting in regard to my research question: What effect does the misuse of prescription medication have on college students?

In the next chapter, the methodology design will be presented which will include how the particular data set was selected for my research, what population was sampled, and what statistical analysis was performed.

Chapter Three

Methodology

The research question posed in this study is: what effect does the misuse of prescription medication have on college students? This chapter will provide insight on prescription drug misuse by using secondary data gathered from a random sample of college students from Youngstown State University. The four hypotheses are as follows:

H1: College students who misuse prescription drugs have lower G.P. A's than college students who do not misuse prescription drugs. H2: In order to deal with the stress of college life, students will self-medicate as a way of coping. H3: Most college students will use prescription drugs non-medically for the purpose of improving grades. H4: Undergraduate students in their first and second years of college are more likely to misuse prescription medication than junior or seniors.

The Data

Secondary data from the College Prescription Drug Study is a collaboration between The Ohio State University's Center for the Study of Student Life, Student Life Student Wellness Center, and the College of Pharmacy. The data has been approved by Youngstown State University's Institutional Review Board. The College Prescription Drug Study (CPDS) is a multi-institutional survey involving students in undergraduate, graduate, and professional programs. The study examines non-medical use of prescription drugs, surveying students on their perception of drug use, providing reasons for and consequences of use, how they are accessing the drugs and their perception of other students misusing prescription drugs. The results provide an understanding of the current

prescription drug misuse on college campuses including information on different types of prescription drugs but with a focus on pain medication, stimulants and sedatives as well as the use of alcohol and illicit drug use. For the purpose of this thesis, the only analyses performed were on pain medication, stimulants and sedatives. The survey instrument was based on previous research of prescription drug misuse at The Ohio State University beginning in the year 2009. In 2015 the first multi-institutional administration of the CPDS became accessible. The College Prescription Drug Study was administered in the spring of 2018 to random samples of students attending 26 different institutions across the United States. For the purposes of this research, the only data examined was collected from Youngstown State University students.

There were a total of 3,000 students from Youngstown State University invited to participate in this survey, 184 students responded. The online surveys were administered anonymously using Qualtrics Survey Software, contacting random samples of undergraduate, graduate and professional students who were at least 18 years of age.

The demographics of the students who responded to the survey vary between age, class rank, gender, and race/ethnicity, this profile can be found in table 1 of the results chapter. One advantage of this data in relation to this present study is the population. The sample centered on students in the college environment which aligns well with the hypotheses posed in this research. Other demographics used to profile the students were student employment, whether the student worked on or off campus and the students major.

Analytic Approach

Table 1 was created to profile the 184 students from Youngstown State University

who answered the survey questions provided by CPDS. This profiling includes demographics such as the student's age, gender, race, class rank, and if the student is employed. Descriptive statistic frequencies were run on each variable listed above in order to organize the information provided in table 1. The frequency analysis done accounts for the number (*N*) of people who were in that level of category demonstrated in the table. The percentage shown is what percent of people were in that category. There is a row in each category that accounts for missing cases. The missing cases are the number *(N)* of students, out of the total 184, who did not respond or who decided to skip the question altogether. An additional Table was created (Table 1a) to show the profiling of the students who responded 'yes' to any drug use (prescription medication, stimulants, and sedatives). This table was created by running a cross tab between the variable any drug use and each individual variable used to profile the students, such as age, gender, race, major, class rank, enrollment status, and employment status. This profiling provides an overview of how many of the 184 students answered 'yes' to any drug use. This will help provide an insight of the sample size used to run the analysis. Similar to Table 1, there is a row that indicates missing cases, which are the number *(N)* of students, out of the total number who did not respond or who decided to skip the question altogether.

Data as a result of surveys often require recoding of variables in order to run particular analyses. These variables were re-coded in a way that would group certain variables and values with others for the purpose of this thesis. First, a new variable, any drug use, was created. This variable was created to reflect a responding answer of 'yes' if a student responded that they have used any of the following prescription drugs: prescription pain medication, sedatives, and/or stimulants. This new variable was created

to simplify the analysis.

Next, the variable GPA was created to reflect students who responded with having a GPA of 3.0 or higher, which is considered good academic standing. This new variable (GPA) was created to analyze the relationship between the variable any drug use and students who were considered to be in good academic standing.

Lastly, I recoded the variable class rank to group together first- and second-year students in one category and all other students in a separate category. This displayed as first and second year students in their own category which = 1 in the data set and all other class ranks which = 0 in the data set. This new class rank variable was created to analyze the relationship between any drug use and class rank.

After recoding the GPA and class rank variable and also creating the new any drug use variable, the next step is to run the different analyses on the data. The significance of the p-value for the purpose of this thesis is $p < .05$. A Pearson's correlation coefficient was calculated to examine the possible relationship between GPA and drug misuse variable (Prescription pain medication, Sedatives and Stimulants). Table 2 will show the bivariate correlation that was run to compare the relationship between drug use and a student who is considered in good academic standing. This analysis will either provide support or no support for H1: College students who misuse prescription drugs have lower G.P. A's than college students who do not misuse prescription drugs.

Table 3 reflects the crosstab that was run to create a chi-square of the data to analyze the students who answered 'yes' to any drug use in comparison to their response to the question, "How often do you use drugs or alcohol to manage your stress". The students who responded could answer the question by selecting the options of: never,

rarely, sometimes, often, and always. This will either provide support or no support for H2: In order to deal with the stress of college life, students will self-medicate as a way of coping.

Table 4 reflects the relationship between any drug use and students who responded to the question, "I have used pain medication, sedatives, and/or stimulants for non-medical reasons to help study or improve grades". A simple frequency distribution of the reasons offered for misusing drugs will be used. This will either provide support or no support to H3: Most college students will use prescription drugs non-medically for the purpose of improving grades.

Lastly, in regard to the recoded variable (First and Second year undergraduate students) and H4: Undergraduate students in their first and second years of college are more likely to misuse prescription medication than junior, seniors and graduate students, a crosstab was run on the data to create a chi-square to test if class rank is dependent on drug misuse, which is reflected in Table 5.

Conclusion

This chapter gave a detailed explanation behind the methodology of this present study. In the next chapter of this thesis, I will show the results, if drug use compared to other variables is statistically significant.

Chapter Four

Results

This chapter discusses the results from the analyses first proposed in the methodology chapter. After reviewing the literature in the field regarding prescription drugs and strain that college students are experiencing, the four hypotheses tested in the analysis are:

H1: College students who misuse prescription drugs have lower G.P. A's than college students who do not misuse prescription drugs. To test this I expect to find that as GPA increases, the misuse of prescription drugs decreases.

H2: In order to deal with the stress of college life, students will self-medicate as a way of coping. To test this I expect a strong correlation between stress and misuse of prescription drugs.

H3: Most college students will use prescription drugs non-medically for the purpose of improving grades. To test this, I expect that the number one reason for the misuse of prescription drugs to be to improve grades/study habits.

H4: Undergraduate students in their first and second years of college are more likely to misuse prescription medication than students who are juniors, seniors, and graduate students. I expect to find that freshman and sophomore students misuse prescription drugs more than juniors and seniors.

Student Respondent Profile

As shown in Table 1, about ¾ of respondents were of the age 18-23, the traditional age of a college student. There were 13.6% who were of the age 24-29, 6% were of the age 30-39, 4.9% were of the age 40-49, 2.2% were of the age 50-59 and only .5% were 60 and older. The category 'missing' indicates students who did not respond or skipped the question. The mean of the age category was 24.21, the median is 21.00, the range is 42 and the standard deviation is 8.30.

Although gender will not be included in any of the testing throughout this thesis, for the purpose of profiling the students, there were 104 females (56.5%) and 49 males (26.6%), 1 transgender, and 2 prefer not to answer. Race was also not included in any of the analysis although for the purpose of profiling the students, there were 2.7% Hispanic, 2.2% Asian American, 3.3% African American, 0.5%Native Hawaiian, 1.1% Native American, 2.2% Middle Eastern, and 85.2% were White/European American and 1.1% Other.

About ¼ of respondents were first year undergraduate students, 20.7% were second year undergraduate, 18.5% were third year undergraduate. There were also 13.6% who were fourth year undergraduate, 7.1% were fifth year undergraduate, and 15% were graduate students, 2.2% answered "other". This provided a fairly balanced range of class ranks for analysis.

The most popular major declared on the survey was the major of health or medicine, which was 16.8% of the respondent's answer. The next highest reported major was STEM, 16.3% of respondents. Other majors included Business, Arts and Humanities, Social Sciences and Education. Major did not have a purpose in this thesis except to

provide a profile of the students. Most students, (68.5%) were full-time students and 9.8% were part-time. About ½ of the students were employed.

An additional table was created (Table 1a) to show the profile of the students who responded 'yes' to any drug misuse (prescription pain medication, stimulants, and sedatives). This table provides an overview of how many of the 184 students answered 'yes' to any drug use. There were 37 students who responded 'yes' to any drug use. As seen in Table 1, there are missing cases of students who did not answer or chose to skip the question of drug use. This number (37) is the sample size that was used to run the analyses such as the effect of GPA, coping with stress, studying habits and class rank compared to drug use.

There were thirty-seven total students who responded 'yes' to the use of any of the following drugs: prescription pain medication, stimulants, and sedatives, which is 20% of the overall 184 students who responded to the CPDS. Thirty (81%) students between the ages of 18-23 responded 'yes', there were two (5.4%) students between the ages of 24-29, one (2.7%) between the ages of 30-39, three (8.1%) between the ages 40-49, and one (2.7%) between the ages of 50-59.

With respect to gender, there were sixteen females (43.2%), thirteen males (35.2%) and one prefer not to say who responded 'yes' to the misuse of any prescription drugs. There were two students (5.4%) with the race of Hispanic, four (10.8%) African American, one (2.7%) Pacific Islander, twenty-nine (78.3%) White, and one other who responded 'yes' to the use of prescription pain medication, stimulants and sedatives. There were eight first year students (21.6%), four second year (10.8%), eight third year (21.6%), ten fourth year (27.0%), three fifth year (8.1%), two graduate students (5.4%)

and two “other” students (5.4%) who responded ‘yes’ to the use of prescription drugs. Regarding major, there were five students (13.5%) in Arts and Humanities, five students (13.5%) in Business, three students (8.2%) in Education four students (10.8%) in Health or Medicine, four students (10.8%) in Social Sciences and seven students (18.9%) declaring “other” as their major, who responded ‘yes’ to the use of prescription pain medication, stimulants and sedatives. One student was part-time and 18 students (48.6%) were full time and one student was non-degree seeking who responded ‘yes’ to the use of prescription drugs. There were ten students (27%) who are employed and sixteen students (43.3%) who are not employed and responded they have used prescription pain medication, stimulants and/or sedative

Table 1

Student Respondent Profile (N=184)

Age	*N*	Percentage
18-23	134	72.8
24-29	25	13.6
30-39	11	6.0
40-49	9	4.9
50-59	4	2.2
60 or older	1	.5
Mean= 24.21		
Median= 21.00		
Mode= 19		
Range=42		
Std. Deviation= 8.30		
Gender		
Female	104	56.5
Male	49	26.6
Transgender	1	0.5
Prefer not to answer	2	1.08
Missing	28	15.2
Race		
Hispanic	5	3.06
Asian American/Asian	4	2.45
Black/African American	6	3.68
Native Hawaiian/ Pacific Islander	1	0.61
Native American/American Indian/Alaskan	2	1.22
Middle Eastern/Arab American	4	2.45
White/European American	139	85.2
Other	2	1.22
Missing	21	11.4
Class Rank		
First year undergraduate	39	21.2
Second year undergraduate	38	20.7
Third year undergraduate	34	18.5
Fourth year undergraduate	25	13.6
Fifth year undergraduate	13	7.1
Graduate Student (Masters)	17	9.2
Graduate Student (Doctoral/Professional)	10	5.4
Other	4	2.2
Missing	4	2.2

Table 1 ***continued***

Major	*N*	Percentage
Arts or Humanities	16	8.7
Business	13	7.1
Education	19	10.3
Health or Medicine	31	16.8
Social Sciences	28	15.2
STEM	30	16.3
Vocational	0	0.0
Other	4	2.2
More than one major	16	8.7
Missing	27	14.7
Enrollment status		
Part-time	18	9.8
Full-time	126	68.5
Non-Degree Seeking	1	.5
Missing	39	21.2
Employed		
Yes	97	52.7
No	33	17.9
Missing	54	29.3

Table 1a

Student Respondent Profile to the Misuse of Any Drug (N=37)

Age	*N*	Percentage
18-23	30	81.1
24-29	2	5.4
30-39	1	2.7
40-49	3	8.1
50-59	1	2.7
60 or older	0	0.0
Gender		
Female	16	43.2
Male	13	35.2
Transgender	0	0.00
Prefer not to answer	1	2.7
Missing	7	18.9
Race		
Hispanic	2	5.40
Asian American/Asian	0	0.00
Black/African American	4	10.8
Native Hawaiian/ Pacific Islander	1	2.7
Native American/American Indian/Alaskan	0	0.00
Middle Eastern/Arab American	0	0.00
White/European American	29	78.4
Other	1	2.7
Class Rank		
First year undergraduate	8	21.6
Second year undergraduate	4	10.9
Third year undergraduate	8	21.6
Fourth year undergraduate	10	27.0
Fifth year undergraduate	3	8.10
Graduate Student (Masters)	2	5.40
Graduate Student (Doctoral/Professional)	0	0.00
Missing	2	5.40
Major		
Arts or Humanities	5	13.5
Business	5	13.5
Education	3	8.2
Health or Medicine	4	10.8
Social Sciences	4	10.8
STEM	2	5.40
Other	7	18.9
Missing	7	18.9

Table 1a *continued*

Enrollment status	*N*	Percentage
Part-time	1	2.7
Full-time	18	48.6
Non-Degree Seeking	1	2.7
Missing	17	46.0
Employed		
Yes	10	27.0
No	16	43.3
Missing	11	29.7

HYPOTHESIS 1

GPA and Drug Use

When looking at Grade Point Average (GPA) and drug use, I expected to find that the increase of drug use (prescription pain medication, sedatives, and stimulants), which is the dependent variable of this thesis, would lead to a decrease in GPA. Table 2 reflects the bivariate correlation that was used to determine if GPA and drug use move in the same direction. The results indicate that the p-value is .08 which is not significant, indicating that there is no relationship. There is no credible evidence linking GPA and drug use, therefore, they do not effect one another in this particular analysis. In correspondence to H1: College students who misuse prescription drugs have lower G.P. A's than college students who do not misuse prescription drugs.

Table 2

		Any Drug Use (1=yes, 0=no)
GPA(1=3.0-4.0, 0=<3.0)	Pearson Correlation	.08
	Sig. (2-tailed)	.381
	N	131

HYPOTHESIS 2

Response of Stress and Drug Use

Regarding any drug use in comparison to the question "How often do you use drugs or alcohol to manage your stress", indicated that there were a total of 30 respondents who responded that they have both used a prescription pain medication, sedative, and/or stimulate and answered the question, "How often do you use drugs or

alcohol to manage your stress?" Of those 30 respondents, eight (26.7%) indicated that they never used drugs or alcohol to manage their stress, seven (23.4%) indicated that they rarely use drugs or alcohol to manage their stress, eight (26.7%) responded that they sometimes used alcohol and drugs to manage their stress, five (16.7%) responded often, and two (6.7%) responded always.

There were eight (26.7%) students who indicated that they have used a prescription pain medication, sedative, and/or stimulant but never for the reason of managing stress. Although, there are fifteen students altogether who responded that they sometimes, often, or always use drugs or alcohol to manage their stress, while seven students responded that they rarely use the drugs to manage the stress. There is an assumption that at one time or another, the students who responded "rarely" to the question of using alcohol and drugs to manage stress, has so on occasion. This is in support for H2: In order to deal with the stress of college life, students will self-medicate as a way of coping.

Table 3 **Any Drug Use**

Survey Question		**Yes (%)**
"How often do use drugs or alcohol to manage your stress?"	Never	8 (26.7%)
	Rarely	7 (23.3%)
	Sometimes	8 (26.7%)
	Often	5 (16.7%)
	Always	2 (6.7%)
Total		30

HYPOTHESIS 3

Using Drugs to Study or Improve Grades

Students responded to the question "I have used pain medication, sedatives, and/or stimulants for non-medical reasons to help study or improve grades". A crosstab was run to compare the students who responded 'yes' to any drug use to the students who responded 'yes' to using the prescription drugs in order to help study or improve grades, which is reflected in Table 4. The crosstab indicates that 20 of the 37 (54%) students who responded 'yes' to any drug use, used the prescription drugs for the reason to study or improve grades. There were seventeen (45%) students who responded no, their reason for using prescription drugs (pain medication, sedatives, and/or stimulants) was not for the purpose of studying or improving grades. This concludes that there is support for H3: Most college students will use prescription drugs non-medically for the purpose of improving grades.

Table 4

N=37

Reason for Drug Use	'Yes' to Any Drug Use
NOT "To Help Study or Improve Grades"	17 (45%)
"To Help Study or Improve Grades"	20 (54%)

HYPOTHESIS 4

Level of Education vs. Drug Use

Twelve (15.6%) of the seventy-seven students in their first or second

undergraduate degree have used any of the following drugs: prescription pain medication, stimulants and/or sedatives. Whereas, twenty-three (22.3%) of the 103 students with higher education, excluding first and second year undergraduates, have used those drugs. There were two missing cases indicating that two students who answered 'yes' to any drug use did not declare their class rank, which can be seen in Table 5. According to the chi- squared that was created for this analysis, the p value=.19 which is not statistically significant, meaning these two items are independent of one another.

A crosstab was used to compare drug use and class rank, including all other categories of class rank with the exception of first and second year undergraduates. According to the chi-square, the p-value is .11 which is not statistically significant. This does not provide support for H4: Undergraduate students in their first and second years of college are more likely to misuse prescription medication than juniors, seniors, and graduate students.

Table 5

Any Drug Use
N=37 *Missing Cases= 2*

	Yes (%)
First and Second year Undergraduate students	12 of 77 (15.6%)
Junior, Senior, and Graduate Students	23 of 103 (22.3%)

In conclusion to the results in this chapter, there was no support for H1: College students who misuse prescription drugs have lower G.P. A's than college students who do not misuse prescription drugs and H4: Undergraduate students in their first and second years of college are more likely to misuse prescription medication than juniors, seniors, and graduate students. Although, there was support for both H2: In order to deal with the stress of college life, students will self-medicate as a way of coping and H3: Most college students will use prescription drugs non-medically for the purpose of improving grades. In the next chapter, there will be conclusions of this thesis provided as well as limitations and recommendations for future research.

Chapter Five

Conclusion

Overall, there was support for two of the four hypotheses which were tested. H2: In order to deal with the stress of college life, students will self-medicate as a way of coping was supported. In correspondence to the literature review in Chapter two, most college students will self-medicate with prescription medication as a way of coping with their stress (Pedalono & Frailing, 2018). This conclusion also provides support for Agnew's General Strain Theory, which was the theoretical framework of this thesis. There was also support for H3: Most college students will use prescription drugs non-medically for the purpose of improving grades. Adderall is becoming a drug that college students are gravitating toward because the side effects of the drug are alertness, increase of energy, and the ability to be awake for longer periods of time (Loe, 2008).

The most surprising hypothesis that was not supported was H4: Undergraduate students in their first and second years of college are more likely to misuse prescription drugs. This hypothesis was expected to be supported because of the new lifestyle and new found freedom that college students are given in their first and second year of their college career (Perry et al., 2005). They may be more at risk to engage in drug use, especially while forming new relationships and coping with the loss of a support system, which is in relation to Agnew's General Strain Theory and the concept of a positively lost stimuli. Although for the results in this thesis, only twelve students in their first and second year of their undergraduate degree used prescription medication, sedatives and stimulants, whereas, students of junior, senior and graduate class ranks, twenty-five of them said they have used those drugs.

Limitations

A limitation to the research was that not every student responded to every question. Students were free to skip questions that they did not wish to answer. This provided a limitation because of the small number of respondents for a question could skew the overall data. There was a total of 184 respondents from Youngstown State University and there were some questions which only 12 of the 184 students answered, this made it difficult to run certain analytic procedures.

A second limitation is the truthfulness in responses. A student can respond to any question as they wish, voluntarily. Although, attending the university and their status on campus may have limited their truthfulness when responding to certain questions. Students may have felt nervous or intimidated to respond truthfully to the questions because of the guilt or deviance they felt from using the particular drugs. The ability for someone to find out, even though the survey was anonymous, could limit a student from responding honestly for the slight risk of being judged or criticized. The untruthfulness can be seen as a limitation to the findings when running different analysis but that is a risk that researchers take when utilizing data from surveys.

Lastly, sample size was another limitation of the research. Youngstown State University sent out the survey to 3,000 students and only 184 responded. Of those 184 students, there were thirty-seven students who responded ‘yes’ to the use of prescription pain medication, stimulants, and sedatives, which made it difficult to run certain analytic procedures. This small percentage of respondents could limit the outcome of certain analyses. If there were more respondents, the results may differ in terms of prescription drug misuse. I only had the availability to look at Youngstown State University’s data

report, although I would have liked to look at the data of the other twenty-five institutions. By having the available data of all twenty-six institutions, it would provide a much larger sample size. I expect that this would demonstrate an increase in support for the four hypotheses because there would be more data to look at in regard to the problem of prescription drug misuse.

Future Research

The increase in the misuse of prescription drugs, especially prescription pain medication, sedatives and stimulants, is paralleled by an increase in adverse health consequences (Watkins et al., 2006). Future research could help build the bridge of doctor and student communication emphasizing the importance of taking the prescribed amount as well as not sharing your prescribed medication. I applied Agnew's General Strain Theory (1992), although other sociological theories linking behavior and acts of deviance can also be applied to further understand the misuse of prescription medication. As a future research opportunity, Routine Activities Theory, first proposed by Marcus Felson and Lawrence E. Cohen (1979), could help further explain the reasoning college students are misusing prescription medication.

The next step for future research could be developing a project or campaign, similar to D.A.R.E (Drug Abuse Resistance Education), giving students the opportunity to become involved in providing a drug free campus by campaigning the risks of prescription drug misuse. This is a way to educate students on how to live a safe and healthy lifestyle along with finding positive ways to cope with stress.

Contributions

In Chapter two of this thesis, there is literature on three particular prescription

drugs: prescription pain medication, sedatives, and stimulants, which are the most commonly used prescription drugs among the college environment (Andes, Wyatt, Kiss, & Mucellin, 2014). The dangers noted in that chapter are overdoses by vomiting in your sleep, high blood pressure, dehydration, and addiction (Ridenour et al., 2005). This thesis can be a form of educating the college community of health risks involved in prescription drug misuse.

The reality of students misusing prescription medication because they feel as though they are having trouble coping with their stress was highlighted in chapter four of this thesis. There may not be enough emphasis on a college student's schedule and the pressure they are under to perform academically well along with making healthy choices and getting enough sleep. The survey questioned students about their coping mechanisms. These responses can help academic professionals know how their students are doing in regard to their caseload and overall health and what can be done to decrease their levels of stress.

The topic of this thesis was guided by the current drug epidemic. I did not focus attention on street drugs such as heroin or crack because I wanted to aim my focus on the college campus and what drugs were most commonly being misused. The misuse of prescription medication can lead to addiction and furthermore, experimenting with other drugs. By addressing the problem of prescription drug misuse, we put more emphasis on the bright future of these students and the likelihood that the misuse of prescription medication will decrease over the next few years and for future generations.

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February 13, 2019

Dr. Christopher Bellas, Principal Investigator
Ms. Jessica Kohut, Co-investigator
Department of Criminal Justice & Forensic Sciences
UNIVERSITY

RE: HSRC PROTOCOL NUMBER: 133-2019
TITLE: The Perception of Drug Use among College Students throughout their College Career

Dear Dr. Bellas:

The Institutional Review Board has reviewed the abovementioned protocol and determined that it meets the criteria of DHHS 45 CFR 46(d)(4), and therefore is exempt from full committee review.

Any changes in your research activity should be promptly reported to the Institutional Review Board and may not be initiated without IRB approval except where necessary to eliminate hazard to human subjects. Any unanticipated problems involving risks to subjects should also be promptly reported to the IRB.

The IRB would like to extend its best wishes to you in the conduct of this study.

Sincerely,

Dr. Greg Dillon
Interim Associate Vice President for Research
Authorized Institutional Official

GD:cc

c: Dr. John Hazy, Chair
Department of Criminal Justice & Forensic Sciences