Alcohol Consumption, Depression, Anxiety and Stress Levels Amongst University Students.

by

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# TABLE OF CONTENTS

Acknowledgements ......................................................................................... 3

Abstract .......................................................................................................... 4

**Literature Review** .......................................................................................... 5

  Introduction ..................................................................................................... 5

  Alcohol, Depression, Anxiety & Stress: The Difference in Age ................. 6

  How Alcohol Affects Men and Women Differently .................................... 7

  Gender Differences in Alcohol, Depression, Anxiety and Stress ............... 8

  Binge Drinking in Students ......................................................................... 9

  Alcohol and Mental Health ......................................................................... 9

  Anxiety and Alcohol ..................................................................................... 10

  Alcohol and Depression ............................................................................. 11

  Stress and Alcohol ....................................................................................... 12

  Rationale for study ....................................................................................... 13

  Hypotheses for study ................................................................................... 14

**Method** ......................................................................................................... 15

  Participants ................................................................................................. 15

  Design .......................................................................................................... 15

  Materials ...................................................................................................... 16

  Procedure .................................................................................................... 17

**Results** ....................................................................................................... 19

**Discussion** .................................................................................................. 25

**Appendix I** .................................................................................................. 29

**Appendix II** ................................................................................................ 31

**Appendix III** ............................................................................................... 33

**Appendix IV** ............................................................................................... 35

**References** .................................................................................................. 37
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Abstract/Aim

The aim of the present study is to examine alcohol consumption levels and how it affects men and women studying at university level age 18 and over, and their levels of depression, anxiety and stress. A quantitative cross-sectional survey design was used and survey handed out to participants in college lectures for data collection. The research sample consisted of 90 participants, of which there was 38 male participants and 52 female. The expected finding of the study was a significant difference between gender, alcohol consumption and depression, anxiety and stress. Results showed that the male participants consumed more units of alcohol than the female population, and both genders showed similar results in levels of depression, anxiety and stress. Those who were of a younger age had higher levels of depression. Participants that indicated they take part in binge drinking showed higher levels of anxiety, depression and stress.
LITERATURE REVIEW

Introduction

The present study examines the differences between men and women, aged 18 and over, in relation to their alcohol consumption, depression, anxiety and stress levels. The present study will also look at the correlation between the levels of alcohol consumption and the depression, anxiety and stress levels in the men and women who took part. Age will also be looked at to check for significant differences in alcohol consumption and depression, anxiety and stress. Alcohol is a widely discussed topic and also in terms of how it effects college students’ mental health (Preedy & Watson, 2005). There has been a significant increase in excessive drinking among those aged eighteen years and older, those who are in a college environment and those of the general public (Miller et al., 2013, p. 607). As described by Alcohol Action Ireland (2017) there was a slight drop in the amount of alcohol consumed in Ireland in around 2009; the levels have been steadily rising again to dangerous amounts. This does not only effect individuals physical health but also their mental health as described by Mental Health Ireland.

Alcohol contains ethanol, which is a depressant and as a result can cause depression levels to rise, which in turn can lead to anxiety and stress (Barar, 2015, p.71). In some cases problems with depression, anxiety and stress may already be present and consuming alcohol can make these issues steadily worse as time goes on (Roose & Sackeim, 2004, p.342). If alcohol is used in moderation it can have a positive effect on the levels of depression, anxiety and stress, however with those who consume more alcohol than is recommended the effects can raise these states of being to incredibly high levels (Prince & Carson, 2013). Consequences such as these can lead an individual to suicidal ideations and in some cases even attempts and
completion of suicide (Friedman, 1998, p. 16). Alcohol affects all people differently and can have devastating effects on the human brain in those that are young adults; this is due to fact that their limbic system has not fully developed. Alcohol is one of the first substances that most people when they are young would use for reasons such as fitting in with their peers and this would often lead to a heavy intake of alcohol (Dasgupta, 2011, p. 50). Many studies have found that college students tend to drink the highest amount of alcohol than any other demographic. Carter, Obremski & Goldman (2010) identified eighteen different studies that compared drinking habits of college students and the general public. The results that Carter et al. (2010) found from the eighteen different studies was that those who were in college did in fact drink more quantities of alcohol and more often than those who were not attending college. In some cases this can be explained by the change in living conditions and the change in their social life as they reach adulthood (Labrie et al. 2007). College students have an almost unique drinking pattern for example binge drinking, which is what a lot of research is concerned with, as many students are at high risk of suffering from negative consequences from heavy consumption of alcohol. This can lead to students becoming stressed, anxious and depressed, in turn this can lead to self harm and even suicidal tendencies and actions (Geisner et al., 2013). Some individuals may never reduce their alcohol intake as they age, and the level of alcohol consumption will continue through most, if not all of, their adult life, drinking excessive amounts of alcohol (Ham & Hope, 2003, p. 273).

**Alcohol, Depression, Anxiety and Stress: The differences in age**

Alcohol is present in almost every aspect of an individuals’ life and it remains through out the life span. This does not mean that everyone is a drinker but that in some ay alcohol is always present whether it’s in adverts or at social occasion. In
many cases drinking alcohol can start at a young age when an individual is in their early to mid teen years due to the fact that alcohol is so widely available. As a result of this, drinking high levels of alcohol may continue through young adulthood. Those aged eighteen to twenty four are most at risk to heavy amounts of alcohol compared to other age groups. It is also more likely that this age group will develop problems with depression, anxiety and stress as a result of consuming heavy amounts of alcohol. Mahmoud, Staten, Hall & Lennie (2012) found that eighteen to twenty four year olds in third level education experience high levels of anxiety, stress and depression without alcohol present in the study. Most young adults do tend to drink less as they become older, the older they get the less likely they are to engage in activities involving heavy amounts of alcohol (Tabakoff, 1983, p. 340). However this does not mean that they do not drink or that they do not have any underlying problems in relation to their levels of depression, anxiety and stress.

**How Alcohol Effects Men and Women Differently**

Male and female bodies respond differently to alcohol because women have fewer protective enzymes in their stomach that are used to break down alcohol than men. Women absorb roughly thirty percent more alcohol into their bloodstream than men, which causes women to become intoxicated quicker (Hales, 2009, p.356-357). The recommended guidelines for alcohol consumption are different for men an women, according to Drink Aware (2017) men should drink no more than seventeen standard drinks in a week, for women it is no more than eleven. One standard drink is equal to a half pint of larger, a small glass of wine or a pub measure of spirits. However different alcohols have different amounts of units and according to Alcohol Ireland men and women should have no more than fourteen units of alcohol in any
one-week. This study looks at the alcohol consumption level of men and women through units of intake on a typical day or night of drinking.

**Gender Differences in Alcohol, Depression, Anxiety and Stress**

There is a historical stigma attached to alcohol that it is men who drink the most and have problems because of drinking, for a long time this was true as men were the main consumers of alcohol in the past but today that has changed (Murdock, 1998, p.4-5). In 2015 a study was performed on college students in Cork to measure the alcohol consumption levels between male and female students. The results showed that women were consuming just as much alcohol and in some cases more than their male counterparts (Davoren et al., 2015). A study performed by Breslin, Kapur, Sobell & Cappell (1997) found similar results in relation to alcohol consumption between men and women, showing results that the level of consumption was roughly the same between genders. This is an area that the present study will be looking at to see the difference in the levels of alcohol consumption between the men and women who participated.

This study will also be looking at the gender differences in relation to depression, anxiety and stress. Women are twice as likely to suffer from depression, anxiety and stress disorders than men (Altemus, 2006). Angst et al. (2002) performed a study, which reported results that women showed higher levels of depression than their male counterparts. Amed, Abdel-Khalek & Bador (2004) found similar results in women having higher levels of anxiety than men, as did Matud (2004) in a study of stress in men and women, again it was found that women had higher levels of stress than men. Alosaimi, Al-Sultan, Alghamdi, Almohaimeed & Alquannas (2014)
performed a study which looked at depression, anxiety and stress factors, which also found that women had higher levels than men.

**Binge Drinking in Students**

In 1992 Henry Wechsler conducted a study that would lead to a more accurate definition of binge drinking. He defined binge drinking as consuming large amounts of alcohol in a short period of time that would put the drinker at risk (Watson, 2012, p. 8). An individual who binge drinks will drink five or more drinks in a row one straight after the other (Alagna, 2001, p.7). Binge drinking in college students of all ages is on the rise, some individuals do this to fit in while most students binge drink to stave off feelings of anxiety and stress, this in turn leads to feelings of depression as a result of the alcohol (Watson, 2012, p.26-28). Binge drinking usually occurs more frequently in men than women, and most frequently happens with those aged 21 to 25 years. The heightened risk of binge drinking in young adults seems to represent a stage in life when individuals of this age are free from adult responsibilities and parental supervision. However as individuals age the rate of binge drinking decreases in most cases, although the amount of alcohol that is consumed on a weekly basis seems to be steadily the same as individuals age (Winograd & Sher, 2015).

**Alcohol and Mental Health**

Alcohol and mental health quite often co-exist and many people drink to try and counteract the effects of depression, anxiety or stress, there is of course problems with this tactic. Alcohol depletes neurotransmitters that are needed to help the brain over come anxiety naturally, due to this the more an individual drinks the more anxious they become; the same outcome occurs with symptoms of depression by decreasing the levels of serotonin in the brain (McCulloch, 2006). Many people use
alcohol as a way to relax when stressed, however the higher the level of stress the higher the intake of alcoholic drinks is (Zastrow, 2009, p.256). Alcohol is so widely available and affordable today, because of this more and more people are drinking heavier amounts and having more severe feelings of anxiety, depression and stress (Baker & Velleman, 2007, p.21). The present study will look at alcohol and how it relates to levels of depression, anxiety and stress.

**Anxiety and Alcohol**

Anxiety is considered a mental health issue and causes feelings of worry and fear in those who suffer for its effects. According to the tension reduction theory, those that suffer from anxiety may be more likely to drink higher amounts of alcohol than those who do not suffer with anxiety (Klodner, Delucia & Upsprung, 1989). The individuals that this relates to drink so that their anxiety will subside while they are intoxicated, this however is only a short term solution and when the alcohol wears off the individuals revert back to their anxious state (Klodner et al., 1989). After a night of drinking to try and get rid of the feelings of anxiety, the effects of the alcohol will wear off and the anxious feelings of an individual will return and usually in higher levels (Hart, 1999, p.174). The relationship between alcohol and anxiety is one of the most concerning parts of young adults lives as there is an increase in the level of alcohol intake on a daily basis and in turn the psychological problems that are related to anxiety are also on the rise. Zimmermann et al. (2003) performed a cross-sectional study, which found that those who suffered from anxiety attacks and disorders associated with anxiety had a higher probability level to become dependent drinkers or abuse alcohol.
There has been research performed to test if those with high levels of anxiety do actually drink more than those who do not have high levels. Villarosa et al. (2014) found that those who reported more symptoms of anxiety did in fact consume larger amounts of alcohol than those who had less or no symptoms. Brook and Willoughby (2016) found similar results within a larger sample size of undergraduate students, however while the findings of this study were similar to the previous one, they found that they had mixed results. The students were separated into five different groups depending on their reported alcohol intake and while two of the groups with a high level of consumption reported high levels of anxiety one of the remaining groups who reported low levels of alcohol consumption also reported high levels of anxiety (Brook & Willoughby, 2016). These findings indicate that high levels of anxiety do not always contribute to excessive drinking in university students. The present study will look at the relationship between alcohol and anxiety in men and women to see if there is any correlation between the two variables.

**Alcohol and Depression**

Depression is a mental illness that is characterised by a persistent sense of sadness, feelings of worthlessness, loss of interest in activities and others in individuals with symptoms of depression (Parekh, 2017). Depression is the most common diagnosable mental disorder and it affects over one hundred million individuals throughout the world (Momah, 2015). Depression can occur as a result of drinking heavy amounts, although it can also be the opposite and the individual may drink heavy amounts due to the fact that they are depressed (Barry, Oslin & Blow, 2001, p.37). In general depression often comes first and drinking alcohol would make the effects of depression worse but people would tend to drink quite often because they are feeling down (Sher, 2009).
Individuals of younger ages are beginning to show progressively more signs of depression than individuals of an older generation, Rossow & Norstrom (2014) performed a study that assessed depressive symptoms in young people and compared them to the levels of alcohol consumption. This was a longitudinal study spread over thirteen years. The results showed that there was a significant relationship between those who were or became heavy drinkers and the symptoms of depression. While this study had a very large sample size it was not gender specific and did not look at the differences in alcohol levels and depressive symptoms between men and women (Rossow & Norstrom, 2014). Not many studies looked at depression and alcohol on such a large longitudinal scale, however other studies did show different results. Such as Camatta and Nagoshi (1995) who performed a study on 135 college students and found that those who had high levels of depression did not have high levels of alcohol consumption. However the participants did report that when they did drink they took part in a binge drinking session so that they could get as drunk as possible (Camatta & Nagoshi, 1995). A more recent study performed in 2017 found similar results in university students and their alcohol consumption levels and binge drinking habits, although the study also found that women showed higher levels of depression than men even though the results of the male participants showed that they had higher consumption levels of alcohol (Nourse et al., 2017).

**Stress and Alcohol**

The amount of stress that university students experience can be extreme, although not all stress is negative. The present study will look at differences of stress in gender and if there is a correlation with alcohol consumption. Many individuals will drink an alcoholic drink due to the fact that they may have had a stressful day or are going through a very stressful time in their life. Regular heavy drinking can be a
result of this, which interferes with the brains neurotransmitters, and as a result of this make it very difficult to cope with stress in a healthy effective way (Hunt & Zakhari, 1995). Park et al. (2004) found that students who experience high levels of stress consumed more alcohol, however the same participants were measured again when they were experiencing low levels of stress and the level of alcohol consumption did not change (Park et al. 2004). The subject of the relationship between alcohol and stress differs throughout research. A study performed by Seipone et al. (2013) showed that there was no relationship between high levels of stress and excessive drinking in college students. The present study will look at the relationship of alcohol, stress and gender differences in an attempt to replicate these results.

**Rationale for study**

This study will look at the gender difference in the levels of alcohol consumption, anxiety, depression and stress. Also to be look at is the relationship between gender and levels of anxiety, depression and stress in relation to their levels of alcohol consumption. As alcohol consumption is on the rise according to Alcohol Action Ireland (2017), this study hopes to find if there is a relationship between alcohol consumption and the psychological problems of anxiety, stress and depression. The present study hopes to better inform the population of the harmful effects alcohol not only has on people physically but also on their mental health. Most research of alcohol and mental health in college students has mainly focused on young adults ages 18 – 24 years of age. Such as Tembo, Burns, and Kalembo (2017), who conducted a study on alcohol consumption and the effects on mental in students age 18-24 years.
Hypotheses for study

The present study examines different aspects of men and women who are in third level education and their drinking habits, whether or not the levels of alcohol consumption affect the participants’ levels of stress, anxiety and depression, through eleven different hypotheses. First however there must be acquired a baseline of the different psychological factors in both men and women and so the first three hypotheses will look at the differences between men and women and their levels of depression, anxiety and stress. Hypothesis four will measure the frequency of the participant’s alcohol intake in men and women and check to see if there is in fact a significant difference. Hypotheses five, will test to see if there is a significant difference of units consumed on a typical night in men and women. Hypothesis six will test to see if there is a significant difference between those who indicated that they take part in binge drinking and those who did not, in men and women. Hypothesis seven will test to see that there is a significant correlation between age and alcohol consumption. Hypothesis eight will test to see if there is a significant correlation between age and levels of depression, anxiety and stress. Hypothesis nine will test to see if there is a significant correlation between the levels of depression, anxiety and stress, and the number of units consumed on a typical night. Hypothesis ten will test to see if there is a significant difference between those who indicated that they take part in binge drinking and those who did not and their levels of alcohol consumption. Finally hypothesis eleven will test to see if there is a significant difference between those who indicated that the take part in binge drinking and those who did not and their levels of depression, anxiety and stress.
METHOD
Participants

The participants that were used for this study were a mixture of full and part-time students studying at university level, which were chosen through convenience sampling. The sampling method used for this study was quota sampling, based on college students for different courses such as, BA psychology, diploma psychology and BSC computer science. The lecturers that were contacted decided student’s classes and the surveys were handed out in both evening and day classes. One hundred students were asked to fill out the survey, ten were returned blank as it was said to participants that participation was voluntary. The sample showed an age range, with the youngest participant being 18 and the oldest participant 63 (Mean = 28.8). The different ages were then separated into age ranges, age group 18-24 (N = 35, 39.8%, Male = 11, Female = 24), 25-30 (N = 25, 28.4%, Male = 14, Female = 11), 31+ (N = 28, 31.8%, Male = 12, Female = 16). The sample consisted of Males (N = 38) and Females (N = 52).

Design

A quantitative, cross-sectional survey design was used for this study. In the survey participants were asked age and gender and three questions related to alcohol consumption. These questions were taken from the recommended questions page on the National Institute on Alcohol Abuse and Alcoholism web page. This study will look at many different variables for the different hypotheses. In hypotheses one, two, three, four, five and six the independent variables in all of these is the gender of the participants whether they are male or female. The dependent variables for these are different for each hypothesis; they are the levels of anxiety, stress, depression and the
participant’s alcohol intake. For hypotheses seven and eight the independent variable age of participant the dependent variables are the levels of depression, anxiety and stress and the participants alcohol consumption levels. Hypothesis nine the independent variable is the levels of depression, anxiety and stress; the dependent variable is the level of alcohol consumption. For hypotheses ten and eleven the independent variable is binge drinking and the dependent variables are alcohol consumption levels and the levels of depression, anxiety and stress.

**Materials**

To measure the amount of alcohol that participants consumed three relevant questions for this study were chosen from the recommended questions page on the National Institute on Alcohol Abuse and Alcoholism web page (Appendix I). Question one asked “How often do you drink?” there were five possible answers to this, ‘Every day’, ‘3-5 times a week’, ‘Once a week’, ‘Only on weekends’, and ‘Special occasions’. Question two asked, “Do you engage in binge drinking”, there was two possible answers for this question ‘Yes’, or ‘No’. It was explained in the survey that binge drinking is a consumption of five or more alcoholic drinks in a short space of time. The final question related to alcohol consumption asked, “How many units of alcohol would you consume on a typical night/day?” a unit measurement scale was provided in the survey for this question. The scale showed the participant the unit values for different alcoholic beverages (1 bottle of beer = 1.6 units, 1 pint of beer = 2.3 units, 1 pint of cider = 2.6 units, 1 measured glass of spirit = 1 unit, 1 bottle of alcho-pop = 1.1 units, 1 measured glass of wine = 2.3 units, 1 bottle of wine = 9.8 units). The second part of the survey was to measure the levels of anxiety, depression and stress, for this the DASS-21 (Appendix II) was used (Lovibond & Lovibond, 1995). This survey contained 21 items that were scored on a scale from zero to three
which asked how much each statement applied to the participant in the last week (0 = Did not apply to me at all, 1 = Applied to me to some degree, or some of the time, 2 = Applied to me to a considerable degree, or a good part of the time, 3 = Applied to me very much, or most of the time). DASS-21 included such questions as, “I felt that I had nothing to look forward to” for depression, “I found it hard to wind down” for stress and “I felt scared for no good reason” for anxiety. These are only some examples of the questioned asked. The possible scoring range for depression ranges from 0-28+, (0-9 = Normal level, 10-13 = Mild level, 14-20 = Moderate level, 21-27 = Severe level, 28+ = Extreme level), anxiety ranges from 0-20+, (0-7 = Normal level, 8-9 = Mild level, 10-14 = Moderate level, 15-19 = Severe level, 20+ = Extreme level) and stress ranges from 0-34+, (0-14 = Normal level, 15-18 = Mild level, 19-25 = Moderate level, 26-33 = Severe level, 34+ = Extreme level). Different researchers have tested the reliability and validity of the DASS-21 and found it to be acceptable for its purposes (Henry & Crawford, 2005; Brown, Chorpita, Korotitsch & Barlow, 1997; Anthony, Bieling, Cox, Enns & Swinson, 1998). Other variables to be measured added to the survey were age and gender. The survey was reviewed and approved by the supervisor for this research study (see Appendix for full survey).

**Procedure**

For this study DBS ethical guidelines were followed. The research proposal was reviewed by the DBS ethics committee and approved. The thesis supervisor reviewed the survey used for this study before it were administered to the participants. Lecturers were contacted before the hand out of the survey to ask permission to enter the classrooms of the participants and give them the surveys during class time. A time period of five minutes was put in place by the lecturers to wait for any late arrivals to class; although some students did arrive late the survey was not given to these
students’ as it would have taken up too much of the class time. Before the surveys were given to the participants it was explained to them that participation was completely voluntary and that they did not have to take part if they did not desire to. It was then further communicated to the participants that the study was completely anonymous and confidential. All participants of this study were aged 18 years or older. See appendix for full survey, consent form and after care contact details.
RESULTS

Missing Data

A total of 90 surveys were collected from participants. While all 90 participants answered the majority of the survey there is some data that is missing. Of the questions missing data on the topic of age and alcohol consumption, 88 participants answered age, 84 for how often they drank, 86 for engaging in binge drinking, 88 for how many units of alcohol. Of the questions missing data from DASS-21 (Lovibond & Lovibond, 1995), 89 answered DASS1, 89 DASS14, 89 DASS15, 89 DASS18 and 89 DASS20.

Descriptive Statistics

How often the participants drank was inputted into SPSS under values of (1) = every day (N = 0), (2) = 3 to 5 times a week (N = 10, 11.1%), (3) = once a week (N = 16, 17.8%), (4) = only on weekends (N = 26, 28.9%), and (5) = special occasions (N = 32, 35.6%). The majority of men showed reports of drinking on special occasions, female participants showed the same results. This indicated that the majority of all participants drank only on special occasions.

The samples binge drinking was inputted into SPSS under values of (1) = yes (N = 51, 56.7%), and (2) = no (N = 35, 38.9%). The majority of men indicated that they did take part in binge drinking (N = 25) and the majority of females indicated that they did also take part in binge drinking (N = 26). These self-reports indicated that the majority of the participants said that they do partake in binge drinking sessions.
The number of units drank of a typical night per participant ranged from 0 to 30 units of alcohol. The mean value for the male participants was 9.88 (SD = 7.09), and the mean value for the females was 6.90 (SD = 5.44). The overall mean value of the participants was 8.19 (SD = 6.34). This indicates that men have a higher consumption levels are higher than women on a typical night.

**Analysis 1.**

Hypothesis 1. There will be a significant difference between men and women in their levels of depression.

An independent-samples $t$ test was conducted to evaluate this and it was found that there was no significant difference in the scores of depression, for men (M = 4.00, SD = 3.49) and for women (M = 4.06, SD = 4.91), $t(88) = -.065$, $p = 0.948$.

**Analysis 2.**

Hypothesis 2: There will be a significant difference between men and women in their levels of anxiety.

An independent-samples $t$ test was conducted to evaluate this and it was found that there was no significant difference in the scores of anxiety, for men (M = 3.87, SD = 3.31) and for women (M = 3.80, SD = 4.32), $t(87) = .080$, $p = 0.937$.

**Analysis 3.**

Hypothesis 3: There will be a significant difference between men and women in their levels of stress.

An independent-samples $t$ test was conducted to evaluate this and it was found that there was no significant difference in the scores of stress, for men (M = 5.43, SD = 3.81) and for women (M = 5.58, SD = 5.31), $t(85) = -.151$, $p = 0.881$. 
Analysis 4.

Hypothesis 4: There will be a significant difference in the frequency of alcohol consumption between men and women.

An independent-samples t test was conducted to evaluate this and it was found that there was no significant difference in the frequency of alcohol consumption, for men (M = 3.81, SD = 1.06) and for women (M = 4.06, SD = .998), t(73) = -1.12, p = 0.264. These results suggest that the male sample do drink slightly more frequently than the female sample.

Analysis 5.

Hypothesis 5: There will be a significant difference in the unit intake on a typical night between men and women.

An independent-samples t test was conducted to evaluate this and it was found that there was a significant difference in the unit intake on a typical night, for men (M = 9.88, SD = 7.09) and for women (M = 6.90, SD = 5.44), t(67) = 2.15, p = 0.035. These results suggest that the unit intake on a typical night is higher in men than in women.

Analysis 6.

Hypothesis 6: There will be a significant difference between men and women in binge drinking.

A Mann-Whitney U test was conducted to evaluate this and it was found that there was no significant difference in binge drinking, z = -1.61, p = .10. The mean rank for men was 39.14, the mean rank for women was 46.64.

Analysis 7.

Hypothesis 7: There will be a significant correlation between age and alcohol consumption.
The correlation between age and alcohol consumption was measured using a Pearson’s r test. Results indicated that there was no significant correlation between the age of participants and alcohol consumption levels. Age and frequency ($r = -0.194$, $N = 82$, $p = 0.081$), age and unit intake ($r = -0.076$, $N = 86$, $p = 0.485$). This suggests that age does not have any significant impact on levels on alcohol consumption.

**Analysis 8.**

Hypothesis 8: There will be a significant correlation between age of participants and levels of depression, anxiety and stress.

The correlation between age and levels of depression, anxiety and stress was measured using a Pearson’s r test. Results indicated that there was no significant correlation between the age of participants and anxiety or stress levels. Age and anxiety ($r = -0.203$, $N = 87$, $p = 0.059$), age and stress ($r = 0.097$, $N = 85$, $p = 0.375$). Results indicated that there was a significant correlation between age of participants and depression levels ($r = -0.240$, $N = 88$, $p = 0.02$). The mean age of those with higher levels of depression was 24.7, which indicated that those who participated over the age of 25 years had lower levels of depression.

**Analysis 9.**

Hypothesis 9: There will be a significant correlation between the depression, anxiety and stress scale, and the number of units drank on a typical night.

The correlation between units and levels of depression, anxiety and stress was measured using a Pearson’s r test in SPS Results indicated that there was no significant correlation between units and stress levels, ($r = 0.149$, $N = 85$, $p = 0.173$). Results also indicated that there was a significant correlation between units and depression and anxiety levels. Units and depression, ($r = 0.216$, $N = 88$, $p = 0.04$), this is
a weak positive correlation with an average score of 10 for depression and average unit intake of 15. Units and anxiety, \((r = .319, N = 87, p = .003)\), this is a moderately strong positive correlation with an average score of 9 for anxiety and average unit intake of 14.

**Analysis 10.**

Hypothesis 10: There will be a significant difference between those who indicated they binge drink or not in alcohol consumption levels.

An independent-samples \(t\) test was conducted to evaluate this and it was found that there was a significant difference in the frequency of consumption, for those who do binge drink (\(M = 3.59, SD = .983\)) and for those who don’t (\(M = 4.50, SD = .842\)), \(t(73) = -4.49, p = 0.000\). The results also showed that there was a significant difference between units of alcohol consumed and those who did and did not take part in binge drinking. Those who indicated they did binge drink (\(M = 12.07, SD = 5.22\)), those who did not (\(M = 3.08, SD = 2.91\)), \(t(81) = 10.14, p < .001\). These results suggest that those who do take part in binge drinking consume higher amounts of alcohol and do so more frequently than those who do not binge drink.

**Analysis 11.**

Hypothesis 11: There will be a significant difference between those who indicated they binge drink or not in their levels of depression anxiety and stress.

An independent-samples \(t\) test was conducted to evaluate this and it was found that there was a significant difference in the levels of depression, anxiety and stress. Depression and those who indicated they did binge drink (\(M = 5.02, SD = 4.07\)) and for those who did not (\(M = 2.77, SD = 4.42\)), \(t(69) = 2.39, p = .02\). Anxiety and those who indicated they did binge drink (\(M = 4.70, SD = 3.99\)), those who did not (\(M = 2.54, SD = 3.33\)), \(t(80) = 2.70, p = .008\). Stress and those who indicated they did binge
drink (M = 6.53, SD = 4.35), those who did not (M = 4.29, SD = 5.14), t(63) = 2.07, p = .04. These results suggest that those who do take part in binge drinking have higher levels of depression anxiety and stress.
DISCUSSION

The aim of the present study was to examine the relationships between male and female university students and their alcohol consumption. The present study also examined the differences in depression, anxiety and stress levels in relation to alcohol consumption and the comparison of age. Results of gender and levels of depression, anxiety and stress found that there was no significant difference between men and women with their levels, indicating that the participants’ in the present study had similar scoring in depression, anxiety and stress. These results do not support the hypotheses put forward in the present study. Studies performed by Salk, Hyde & Abramson (2017), and Misra & McKean (2000) did find significant differences between men and women with their levels of depression, anxiety and stress and women were found to have higher levels than men. The differences between gender and alcohol consumption showed that there was no significant difference in frequency of alcohol consumption or binge drinking. These results do not support the hypothesis for the present study. However there was a significant difference in the amount of units consumed on a typical night, the result showed that the male participant’s do consume more alcohol than the female population. These results support the hypothesis of the present study. Emisle, Lewars, Batty & Hunt (2009) found similar results for units intake between men and women which supports the findings of the present study. The results for age and alcohol consumption showed that there was no significant difference between the ages of participants, these results did not support the hypothesis put forward in the present study. However other studies such as Rosta & Aasland (2010) found that the younger population tends to consume more alcohol than those who are on the older end of the scale. Differences between age and anxiety and stress were not significant, these results did not support the hypothesis of the
present study. Although the difference between age and depression was significant, the results showed that older participants had lower levels of depression than those who were younger. The results of age and depression support the hypothesis of the present study. Goldberg, Breckenridge & Sheikh (2003) found results that support the result for age and depression, their results showed that younger participants did have higher levels of depression than the older participants. The results of the correlation between stress and the units of alcohol consumed, was a negative correlation, which did not support the hypothesis of the present study. However the results of the correlation between depression, anxiety and the units of alcohol consumed were positive correlations, these results supported the hypothesis of the present study. Webb, Ashton, Kelly & Kamat (1996) found similar results to support the findings of depression, anxiety and the correlation with units of alcohol consumption. The results of binge drinking and alcohol consumption showed a significant difference, indicating that those who answered yes to binge drinking had higher levels in frequency of drinking and units of alcohol consumed, than those who answered no to binge drinking. These results support the hypothesis of the present study. The final analysis of differences between binge drinking and levels of depression, anxiety and stress, showed that there was a significant difference, indicating that those who answered yes to binge drinking have higher levels of depression, anxiety and stress. These results support the hypothesis put forward by the present study, Choi & DiNitto (2010) showed similar results that support the results of the present study. However Haynes et al. (2005) found that there was no significant difference between depression, anxiety and binge drinking.

**Strengths, Weaknesses and Future Research**

Weakenesses of the present study include the number of participants, especially
the number of male and female participant’s as there were more women than men in
the present study. The survey that was given to participants was a self-report and due
to this there are possible errors in data collection through misinterpretation of
questions or miss-reading statements and answers. Also there was a possibility of
participants scoring themselves too low or too high on alcohol consumption levels
and depression, anxiety and stress scale. A number of the present study’s results were
not supported by some of the hypotheses. Strengths of the present study include the
amount of content that is covered; there are a wide variety of variables that are
measured in multiple tests. The present study is easy to replicate for future studies in
this area.

Future research in this area could extend upon the present study with a larger
sample size, by performing the study at colleges throughout Ireland, and possibly
looking at the ethnicity of participants as one of the variable as there may be different
drinking patterns. It would also be beneficial to perform a longitudinal study to look
at different times of the year such as beginning of a new semester compared to end of
year exams.

Conclusion

The findings of the present study found that men and women had similar
scoring in levels of depression, anxiety and stress, also the frequency of consuming
alcohol and whether or not participants binge drink showed similar scoring between
men and women. However it was found that men drink more units of alcohol than
women on a typical night out. There was no difference in age and alcohol
consumption or in anxiety or stress. Although those aged in their mid twenties
showed higher levels of depression than any other age. Those who reported
consuming more units of alcohol on a typical night had higher levels of depression
and anxiety, also those who indicated that they take part in binge drinking showed more frequency in drinking as well as higher levels of alcohol consumption. Those who indicated that they take part in binge drinking also showed higher levels of depression, anxiety and stress than those who indicated that they did not take part in binge drinking. The findings of the present study indicate that gender differences for alcohol consumption and levels of depression, anxiety and stress are becoming more similar than they have been in past studies.
APPENDIX I

Gender, Age and Alcohol Consumption Questions
Age: _______.

Gender: _______.

Please read each question and mark your answer with an X.

- How often do you drink?
  - [ ] Every day
  - [ ] 3-5 times a week
  - [ ] Once a week
  - [ ] Only on weekends
  - [ ] Special occasions

- Do you engage in binge drinking? (5 or more drinks in a sitting)
  - [ ] Yes
  - [ ] No

- How many units of alcohol would you consume on a typical night/day? (See unit measures below as a guide)
  - [ ]

**Unit Measures**

1 bottle of beer = 1.6 units
1 pint of beer = 2.3 units
1 pint of cider = 2.6 units
1 measured glass of spirits = 1 unit
1 bottle of alcho pop = 1.1 units
1 measured glass of wine = 2.3 units
1 bottle of wine = 9.8 units
APPENDIX II

DASS-21
Please read each statement and circle a number 0, 1, 2 or 3 which indicates how much the statement applied to you over the past week. There are no right or wrong answers. Do not spend too much time on any statement.

The rating scale is as follows:
- 0  Did not apply to me at all
- 1  Applied to me to some degree, or some of the time
- 2  Applied to me to a considerable degree, or a good part of time
- 3  Applied to me very much, or most of the time

<table>
<thead>
<tr>
<th></th>
<th>Statement</th>
<th>Rating Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I found it hard to wind down</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>2</td>
<td>I was aware of dryness of my mouth</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>3</td>
<td>I couldn't seem to experience any positive feeling at all</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>4</td>
<td>I experienced breathing difficulty (eg, excessively rapid breathing,</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td></td>
<td>breathlessness in the absence of physical exertion)</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>I found it difficult to work up the initiative to do things</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>6</td>
<td>I tended to over-react to situations</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>7</td>
<td>I experienced trembling (eg, in the hands)</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>8</td>
<td>I felt that I was using a lot of nervous energy</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>9</td>
<td>I was worried about situations in which I might panic and make a fool of</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td></td>
<td>myself</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>I felt that I had nothing to look forward to</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>11</td>
<td>I found myself getting agitated</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>12</td>
<td>I found it difficult to relax</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>13</td>
<td>I felt down-hearted and blue</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>14</td>
<td>I was intolerant of anything that kept me from getting on with what I</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td></td>
<td>was doing</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>I felt I was close to panic</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>16</td>
<td>I was unable to become enthusiastic about anything</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>17</td>
<td>I felt I wasn't worth much as a person</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>18</td>
<td>I felt that I was rather touchy</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>19</td>
<td>I was aware of the action of my heart in the absence of physical exertion</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td></td>
<td>(eg, sense of heart rate increase, heart missing a beat)</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>I felt scared without any good reason</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>21</td>
<td>I felt that life was meaningless</td>
<td>0 1 2 3</td>
</tr>
</tbody>
</table>
APPENDIX III

Cover Letter & Consent Information
Alcohol and Levels of Depression, Anxiety and Stress Between Men and Women.

My name is Tanya Shortt and I am conducting research in the Department of Psychology that explores the relationship between alcohol and levels of depression, anxiety and stress. This research is being conducted as part of my studies and will be submitted for examination.

You are invited to take part in this study and participation involves completing and returning the attached anonymous survey. While the survey asks some questions that might cause some minor negative feelings, it has been used widely in research. If any of the questions do raise difficult feelings for you, contact information for support services are included on the final page.

Participation is completely voluntary and so you are not obliged to take part.

Participation is anonymous and confidential. Thus responses can not be attributed to any one participant. For this reason, it will not be possible to withdraw from participation after the questionnaire has been collected. The questionnaires will be securely stored and data from the questionnaires will be transferred from the paper record to electronic format and stored on a password protected computer.

It is important that you understand that by completing and submitting the questionnaire that you are consenting to participate in the study.

Should you require any further information about the research, please contact Tanya Shortt, xxxxxxxxx@mydbs.ie. My supervisor can be contacted at xxxxxxxxx@dbs.ie.

Thank you for taking the time to complete this survey.
APPENDIX IV

Support Services
Thank you for your participation in this study. If you have any further questions regarding the study you can contact me through email.

xxxxxxx@mydbs.ie

If any of the questions or statements made you feel uncomfortable or if you are experiencing any negative consequences from the survey please see below help-lines and websites that can help.

www.aware.ie

www.drugs.ie
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