An exploratory study into university women's drinking habits.

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Abstract

Objective: This project aims to study alcohol consumption patterns of female University students at Rhodes University in South Africa

Method: Online survey completed by 503 first-year female and male students in 2015; the survey had demographic questions, AUDIT, and 9 item Drinking Context Scale. Quantitative analysis using independent t-test and chi-square test was used to find statistical significance in gender differences.

Results: There are more women alcohol abstainers than men. Of the women who drink, a higher proportion of them drink more hazardously than men. The main consequence of Heavy Episodic Drinking (HED) in women is negative emotions after drinking, however, the overall consequence score of drinking for women and men is not the same. Additionally, men are statistically more likely to drink beer more than women and there is a low significant association between more women drinking wine than males. There is a low significant correlation between higher pocket money women get and high AUDIT Consumption score. Women are most likely going to drink excessively in social events with people they trust but are least likely to drink like that with their intimate partners or using alcohol to cope with negative emotions.

Conclusions: Women engage in a lot of binge drinking at social gatherings with close friends and then regret the event after the festivities, thus healthier convivial drinking habits must be encouraged.

Acknowledgments

I would like to dedicate this to my uncle who passed away from Coronavirus on 30 October 2020. Our last phone call will live forever in my heart.

Also, I want to thank my supervisor for his patience as I did this project during a pandemic and his continued understanding as I had Wi-Fi problems.

Finally, thank you to my best friend for being my support system through this paper.

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1 Introduction

The following project aims to explore what factors influence the alcohol consumption levels of female University students. Throughout the project, the dangers of irresponsible alcohol will be highlighted. The existing studies examine University drinking through economic status, race, and qualification course; however, there have not been enough studies exploring how gender may influence the way students drink. Hence, the purpose of this paper is to investigate just how much alcohol consumption in University is influenced by gender. The aspects of drinking to be assessed, between female and male students, are alcohol abstinence, consumption rates, adverse consequences brought on by Heavy Episodic Drinking (HED), and whether the types of alcohol consumed are different between the genders. Furthermore, among only the female respondents this study will analyse the contexts in which women drink excessively and whether higher income leads to higher consumption rates.

Subsequently, a description of the methodology used to ascertain the results will be outlined such as exploring the validity of using the Alcohol Use Disorders Identification Test – Consumption (AUDIT C) to screen the consumption rate. The project pays close attention to these research questions, these are:

I. Is there a statistically significant difference between the proportions of male and female students who abstain from drinking?
II. Is there a statistically significant difference between alcohol consumption between female and male student drinkers? (Excluding those who abstain from drinking.)
III. Is there a statistically significant difference in alcohol consequences between female and male student drinkers? (Excluding those who abstain from drinking.)
IV. Is there a statistically significant difference between female and male student drinkers' preferred types of alcoholic beverages?
V. What are the contexts in which women student drinkers are most likely to drink excessively?
VI. What is the relationship between income and alcohol consumption amongst female student drinkers?

A contextual analysis of the topic of drinking is laid out in a systematic way to track which population is most likely to drink or abstain from it. Firstly, the study will explore the Southern African cultural systems, in terms of gender, that exist around alcohol and how these

will affect the way young adults drink. Additionally, gender is constructed and reconstructed through the types of alcohol students consume as it can form part of their gender identity. The existing literature on University drinking culture will be discussed and thus illustrate the knowledge gap that exists in studying the role gender plays in the consumption of alcohol in South African Universities. Lastly, the socio-economic variables that influence the quantity of alcohol consumed.

Therefore, to assess these patterns, the study will be using quantitative methods of measurement and analysis to determine the significance. The data used is extracted from a survey conducted in 2015 survey that was taken by first-year students at Rhodes University a coeducational institution which is in the student town of Makhanda (formerly known as Grahamstown). The data from the responses are analysed, using statistical program Jamovi and Microsoft excel, and interpreted to answer this project's research questions.

Consequently, the study found that there is statistical significance between male and female drinking when it comes to rates of abstinence and consumption rates. In addition to consumption, the AUDIT Consequences score showed that men have more significantly more consequences than women. However, women experience more negative emotions after HED than men. Interestingly, women's and men's preference of wine is not that different, the results show that women drink wine significantly more than men, but it is a low level of significance. Unsurprisingly though, men drink the alcohol type beer in significantly higher amounts than women drinkers. These contrasts in preference of drinks corroborate previous literature and social constructs of gendered drinking. Additionally, these social influences also contribute to women drinking mostly in convivial events with trusted people and sometimes as a method of coping with negative emotions, yet women rarely use alcohol in sexual or intimate contexts, as the results of this study show.

Lastly, this paper shows that the correlation between money and high alcohol consumption exists among women, its level of significance is not very high. The discussion chapter hypothesizes and makes inferences as to how a clear correlation is not strong as shown in other studies when comparing whole student bodies to their money and alcohol consumption shows that the students with more pocket money tend to drink more. Yet, the results of this paper, show that the women who have the most money are not always the ones who drink the most.

2 Literature Review

2.1 Introduction

The literature that exists around the practices of drinking for women is vast and mainly focuses on expectant mothers and University students. Therefore, this literature review will examine the current research around women and alcohol particularly around South Africa and in University environments. Not only does the literature show that student drinking must be assessed in a holistic approach by looking at the alcohol-consuming practices in a socializing context and how both genders approach drinking. Additionally, this literature review explores the figures reported by WHO on how many young adults drink and what the consequences are of those statistics.

All in all, this literature review aims to illustrate the knowledge gap in current studies on the nuances of female student drinking. The role of context around why women abstain from alcohol, and even when they do drink why they feel guilty about it. The women's rates of alcohol consumption are half of their male counterparts however they are subjected similar consequences and even when they do not drink for the same reasons males do. Therefore, the study will delve into the reasons for this and show how money may not necessarily lead to high levels of consumption as analysis of whole student bodies concludes.

2.2 Alcohol abstinence among young women

Women around the world are the gender that has the most lifetime abstainers from alcohol, according to 2016 statistics compiled in a 2018 World Health Organization report (WHO, 2018). In findings, subsequently, it was found that 54.6% of the WHO region's population of women are lifetime abstainers contrasted to only 34.5% of males who are abstainers. Predictably, due to cultural norms, the ratios of the gender differences in alcohol abstinence are starker in the African statistics whereby 69.9% of females are lifetime abstainers as opposed to only 44.9% of males.

Meanwhile, only 11.9% of men, all over the WHO region, are recorded to be former drinkers yet 13.1% of females have ceased drinking alcohol (WHO, 2016). Additionally, the figures show that even when women are drinking at the adolescent ages, 15 to 19, the girls tend to drink more responsibly and are less likely to engage in HED. Similarly, a study assessing Rhodes University students and another one at Stellenbosch University students revealed that

there are lower female excessive drinkers than there are males (du Preez, Pentz, & Lategan, 2016).

Thus, this poses an interesting question as to how women cultivate healthy ways around drinking alcohol even showing this trait at a young age (during underage drinking) up until they get to University. Hence an analysis of what contexts lead female students to drink excessively is an interesting factor. Some research has concluded that women drink excessively only under emotional duress. Subsequently, this project will test this assertion using the nine-item drinking context scale (DCS-9). Additionally, this project will assess whether more young women (compared to men) will still choose to abstain from alcohol even when they reach University age where they have more autonomy and are legally allowed to drink.

2.3 Gender, a Social and biological difference

The importance of exploring the differences in alcohol practices amongst men and women is because alcohol negatively affects female bodies differently. Although, gender is a complex concept as it has been proven to be a fluid state of being influenced by social factors and interactions (West & Zimmerman, 1987). However, for this study and the way the survey has been formulated this paper will define gender not as a normative concept but rather as a performative state of being (Deutsch, 2007). Performative gender, Deutsch (2007), means that gender is "created continually in ubiquitous ongoing social interactions" (p. 122). Therefore, prescribing the universality of gender into two options of female and male is acknowledged. The author of this project is aware that the dynamics of these two are constantly in flux owing to the time, place, and social context of an individual (Paechter, 2006). Consequently, this study aims to examine whether these gender performances affect the amount of alcohol consumed by young University students.

While many social factors shape drinking behaviors, there are also biological factors that have been highlighted that differentiate the level of drinking for women due to their physical difference to men. Women are more vulnerable to the use of alcoholic beverages compared to men due to their lower weight and a higher proportion of body fat, (Adewuya et al., 2007; Mendonça et al., 2018) as well as the lower hepatic metabolism of alcohol (Mendonça et al., 2018). Hence, women reach higher blood alcohol concentrations than men for the same amount of alcohol ingested (McDonald et al., 2013).

Numerous social factors contribute to the way women drink which may differ from men because women face unique challenges namely, the reproduction burden of pregnancy and sexual coercion (Mudau et al., 2017). Research in Europe has studied the relationship between the fear of sexual violence and drinking behaviour (Kobin, 2013). Kobin (2013) suggests that women often drink cautiously to guard against violence. Furthermore, other research has studied the main reasons women decide to drink and conclude that, most of the time, women are required to have a purpose to drink rather than just drink for the sake of it, lest they are stigmatized for being "bad women" (Rolfe, Orford, & Dalton, 2009). Hence, there is value in examining alcohol consumption through gender differences as there is some proof that men and women drink for different reasons. Not only do women drink for contrasting reasons but they also drink less because they face the same consequences of alcohol as men and even worse side effects.

2.4 Doing Gender through alcohol consumption

Moreover, some studies have been done that allude to the fact that there are, indeed, some gender roles and influences that exist in drinking practices, particularly among populations in Universities. For instance, a qualitative study carried out in Nigeria discovered that there is some level of hegemonic masculinity when drinking in social gatherings at a University whereby the higher amounts of beer that the males can imbibe in illicit admirations within his peer group (Dumbili, 2015). Among female students, at university, drinking is also used as a way of constructing a social identity at University (Dumbili, 2015). On the one hand, women view drinking as a pleasurable experience which is done at social events and thus enjoy drinks in moderation, drinking occasionally (Frederiksen, Bakke, & Dalum, 2012). On the other hand, men see consuming alcohol as an opportunity to gain social capital that can impress potential sexual partners and further impress other men because of their high alcohol tolerance (Dumbili, 2015).

Furthermore, the study illustrated that even the types of drinks that students imbibed in were gendered as the sweeter alcohols such as wine and ciders were considered as feminine as well as abstinence from alcohol. Conversely, bitter-tasting alcohols such as spirits and beer were perceived as more masculine (Dumbili, 2015). The gendered nature of drinking is not unique to Nigerian campuses as even in studies on the subject done in European campuses such as Estonia where rural men considered hard liquor such as vodka a masculine drink befitting man (Kobin, 2013). The irony about the alcoholic drinks being gendered is that the sweeter

drinks were recorded as having higher alcoholic content than the "masculine" drinks thus the women were consuming more alcohol while experimenting with different types of alcohol. Consequently, the following study will explore whether there is a correlation between gender and the types of alcohol students consume.

2.5 Undoing Gender through Alcohol Consumption

Interestingly, the qualitative studies found that young University students challenge the gendered drinking norms that they find prominent in their cultures; the women wanted to drink “like men” to disprove that the stereotypes about them being the ‘’weaker’’ sex. Women are targeted in advertising (Tyree & Jacobs, 2013) as the media advertises which drinks are better suited to the so-called "pink drinks" which are perceived as feminine. These media efforts further reproduce the femininity narrative and thus make women drinking in public more palatable and further distinguishes the difference between the two genders: “women drink pink drinks and men drink beer”.

Similarly, the males in the Estonian study attempted to carve out a different identity opposing the Soviet men that preceded their generation thus did not want to follow the prescribed rural norms of men being overly intoxicated (Kobin, 2013). The study illustrated that urbanized men with heavy Western influences wanted to carve out their identity even through alcohol consumption.

Hence, one can see that even though these young people who have a higher level of education aim to reject the cultural stereotype, yet they still permeate in their communities through advertising and implicit environmental messaging. In all contexts, inebriated women are held at a different standard to drunk males. In addition to this, men are rarely at risk of being sexually violated when they are drunk as opposed to women. Women with alcoholic male partners are in danger of violence whether they, themselves, were drinking (WHO, 2019).

Consequently, this project will endeavor to examine whether the higher consumption rate of males is significantly higher than that of female students. Furthermore, whether the type of drinks that males consume has a significant difference to their female counterparts, may show a correlation on how the genders perform their roles through their drinks of choice.

2.6 Consequences of Risky Drinking in Southern Africa

Sub-Saharan Africa has been shown to have more HIV infection rates due to Heavy Episode Drinking (HED) thus increasing the HIV/AIDS epidemic (Hahn, Woolf-King, & Muyindike, 2011). Moreover, evidence has been found that there are psychosocial issues, such as depression, that can be an outcome of the misuse of alcohol. Heavy drinking has been proven to cause depression and makes one susceptible to over 200 illnesses (World Health Organisation, 2014). HIV/AIDS and other Sexually Transmitted Infections (STIs) are on the rise as well due to inebriated people engaging in risky sexual behaviours. Risky sexual encounters can become dangerous for women as they may become victims of coercive sex (World Health Organisation, 2018). Alcohol further suppresses immune responses that ensure that there are fewer infectious diseases such as Tuberculosis (TB) and viral hepatises is more prevalent among people with an Alcohol Use Disorder (AUDs) (WHO, 2019). Therefore, it is essential to explore the motivations and other factors of these unhealthy trends of consuming alcohol, especially among young Africans.

According to figures recorded by the World Health Organisation the trends of alcohol per capita consumed has had a steady rise in the whole of Africa (2019) where the continent had 14.5 litres in 2000 of pure alcohol drinkers (aged above 15) to 15.7 litres in 2005, 17.2 litres in 2010, and by 2016 the figure had risen to 18.4 litres per capita (WHO, 2019). Furthermore, Heavy episodic drinking (HED) is common amongst young adults and as such increases as people grow older from adolescence to young adults. The numbers show that among drinking populations in Africa, HED occurs in 55.1% of 15–19-year-olds and yet the figure increases among young adults whereby 57.4% of people between the ages 20-24 (WHO, 2019).

Since the data shows that the age groups that have high levels of HED are between the ages of 15-24, a group that is highly likely at school or a University. The schooling age prompts the need to study the reasons why this group engages in risky drinking. Hence, this project aims to explore the consequences of these high consumption rates paying close attention to the female University students and whether they are similar to male figures. Consequently, this project will examine how the consumption levels of young women in a University context are correlated to University campus environmental factors.

2.7 South African University drinking culture

When one knows the reasons and conditions that promote hazardous drinking, then we can help facilitate much healthier relationships with alcohol, especially among young adults. The efforts made by policymakers that target young people to have more balanced and acceptable drinking habits have largely failed to change the university drinking culture (du Preez, Pentz, & Lategan, 2016). It has been hypothesized that the messaging aimed towards young people to curb excessive drinking has not resonated with them because it is not communicated effectively (Paiva, Bastos, & Ronzani, 2012). Hence efforts have been made to study the unique characteristics of South African tertiary drinking culture to enact effective behavioural change remedies (Lategan, du Preez, & Pentz, 2017).

The subgroup of young adults who are university students is the group that is a more accessible group to do an in-depth analysis. There has been longitudinal research on the drinking patterns at Rhodes University and thus there has been a steady investigation of how drinking norms have changed through the years. The research at Rhodes University on drinking patterns has not closely examined the role gender plays in the level of excessive drinking. However, this population of women lies squarely in the ages of people that have been recorded by the UN as having the highest rates of HED compared to the other age groups.

Students' relationship with alcohol has proven to lead to excessive amounts of drinking and an increase in harmful behaviours such as engaging in unprotected sex with strangers (Mudau, Chiringa, Mulovhedzi, & Mudzielwana, 2017). A South African qualitative study showed that in drinking spaces men consider women sexual objects especially after they get inebriated (Rich, Nkosi, & Morojele, 2015). Therefore, getting intoxicated in alcohol-serving places is a dangerous place for women as men believe that alcohol rendering them unable to control their urges (Watt et al., 2012a). These discourses are prevalent in drinking spaces such as taverns, *shebeens* (Rich et al., 2015), and other informal settings where alcohol is served. There is less research done on how men and women interact in alcohol-serving venues catered for university students.

There has been previous research in the same university that this project will be examining. However, the former research used the AUDIT screening tool in its entirety and focused primarily on the racial independent variable of heavy drinking (Young & Mayson, 2010). The research concluded that there were racial differences in the way students drank

whereby white students drink more than black students. Additionally, male, particularly white male students, drink more hazardous than female students (Young & Mayson, 2010) thus the study's discussion also concluded that intervention methods need to be tailored by gender to effectively reach the two types of students.

2.8 Southern African women drinking cultures.

The culture of drinking amongst women in Southern Africa has had a history of concealment because it was considered a cultural taboo (Setlalentoa, Pisa, Thekisho, Ryke, & Loots Du, 2010). In the past, women would consume alcohol on special occasions or at events in the family where traditional thick 'beers' had lower concentrations of alcohol (Michalak & Trocki, 2009). Rarely would women imbibe near men, especially male drinkers (Setlalentoa et al., 2010). However, with the rise of urbanisation and increased female literacy, there has been a shift in cultural norms, this has led to less stigma attributed to recreational women drinkers. An increase of young African women drinkers has been attributed to higher levels of economic freedom and higher levels of education (Martinez, Røislien, Naidoo, & Clausen, 2011). Furthermore, the increase in popularity of commercial alcohol as opposed to the traditional alcohol drinks to more bottles and cans from shops (Michalak & Trocki, 2009) has led to a rise of more people drinking.

Therefore, the types of alcohol that women get to imbibe, have recently grown such that even advertising has created a space for women consumers (Tyree & Jacobs, 2013). Also, Heavy Episodic Drinking (HED) among African women, in 2016, was 28.2% as opposed to the 60.5% prevalence that is amongst male drinkers whereas females drink 8.6 litres per capita men drink 23.4 litres per capita (WHO, 2019). The cultural shift and normalization could be the reason for this rise in consumption, this paper will assess whether money or type of alcohol leads to women drinking excessively.

Although the number of women engaging in unhealthy alcohol consumption is lower compared to men this is still a high statistic that must be studied because women drinkers tend to continue with drinking even in pregnancy. National surveys carried out in Nigeria illustrated an increase in heavy drinking among women whereby 38% of female consumers were drinking dangerously (Obot & Room, 2005) whereas in Uganda the figure is 20% (Namagembe et al., 2010).

2.9 South African University drinking context with a specific focus on women

The current literature that assesses the drinking patterns of women has largely been qualitative. Oftentimes the goals of the study are to ascertain the effects of binge drinking in girls. At the University of Fort Hare, a study was done to ascertain whether alcohol makes women prone to risky sexual behaviours (Kheswa & Hoho, 2017). Additionally, the study looked at how peer pressure and independence from a familial structure can lead to excessive alcohol use (Kheswa & Hoho, 2017). However, in these studies, the exact consumption of the female's alcohol level is not assessed, merely the consequences and effects of it.

Similarly, other studies are interested in the academic consequences of students imbibing (Mudau, Chiringa, Mulovhedzi, & Mudzielwana, 2017). The qualitative methods used, at the University of Venda, the study examined the motivations and determinants of whether students are engaging in high levels of alcohol consumption had on their academic career. Furthermore, the study found that drinking was taken up by female students to cope with hardships that they faced in day-to-day life (Mudau et al., 2017). According to this study, women were able to navigate their bodies and time to more affluent men, and through this, they could get their drinks paid for and be given other monetary benefits. Therefore, the conclusions of the study found that not only were they getting free alcohol, but they were also getting financial help (Mudau et al.,2017). The intoxication assisted in the women carrying out their sexual encounters in this transactional sex. Alcohol is used as a negative coping tool is further corroborated by other researchers examining women in South African low-income settlements (Ojo et al., 2010).

However, in other Western countries, it is mostly middle-aged women who illustrated that sometimes females drink as a method of self-medication in addition to drinking for pleasure and leisure (Rolfe, Orford, & Dalton, 2009). Local South African research has not done an in-depth analysis of these contexts of female drinking especially involving university students. Although some research has shown that women drink to cope. However, the analysis on the exact situations and contexts that can trigger scholars to drink alcohol unhealthily, is not explored enough. The pressure points or moments that lead a student to binge need to be assessed to formulate interventions that will prevent the levels of consumption from being too high. These situations must be examined thoroughly because the different age groups may binge drink for entirely different reasons (even when they are all trying to cope). For instance, a study in Australia concluded that some young university women were engaging in HED

because they wanted to have interesting Facebook content and show peers that they are having fun (Brown & Gregg, 2012).

Hence, this project will assess the situations in which female students engage in heavy drinking by using the Drinking Contexts Scale (DCS-9) which assesses the negative coping context of drinking, intimacy drinking, and convivial drinking (Talbott, Umstattd, Usdan, Martin, & Geiger, 2010).

2.10 Socio-economic factors associated with Drinking.

Moreover, several peer-reviewed articles on University alcohol consumption have researched the Socio-Economic factors behind drinking (Lategan et al., 2017) and have found that the amount of money a student receives influences the amount of alcohol they consume. Regardless of the race of the student, having money has shown that students will consume more alcohol (Young & Mayson, 2010). The patterns of drinking in a longitudinal study (Young & De Klerk, 2009) and the motivations behind the culture of tertiary drinking (du Preez et al., 2016) concluded that higher socio-economic standing correlates to higher consumption. Makanda (also referred to as Grahamstown), the town which the sample of students is assessed is in a “high-income community” (Khweswa & Hoho, 2017) compared to the rural campuses of Venda. However, this does not mean the whole student body is affluent. Thus, the socioeconomics of the students can vary greatly this project will assess how this variable affects consumption levels.

Conversely, there has been research stating that women who are of lower economic standing and live-in lower-income environment thus they tend to drink more. This fact has been shown in the South African context especially in informal settlements (Ojo et al., 2010). Furthermore, a study was done in a South African campus that is not situated in a higher or middle-income town showed qualitative results that proved that lower-income female students engage in binge drinking because of financial insecurity (Khweswa & Hoho, 2017). The WHO (2019) reports that poorer countries are likely to underreport the Alcohol Per Capita rates. However, since the research pool of this study is part of an ongoing longitudinal study, the data on consumption will suffice.

2.11 Conclusion

Ultimately, the purpose of the paper is to gain a better understanding of the drinking practices of female students to view where these students may engage in negative coping mechanisms because interventions are not geared towards them. Thus, since the literature review has argued that there is evidence of a difference in the way women and men view alcohol the following arguments will try and prove that these differences are statistically significant in one South African institution. Subsequently, the research aims also explore the precursors to Heavy Excessive Drinking in university women.

3 Methodology

3.1 Introduction

The data that was used to answer the research question is collected from a self-administered survey that was given to a randomly selected sample of first-year students in 2015. Thus, this is a secondary survey analysis. The author of this project was not involved in the data collection stage and thus this is a secondary analysis of the data, by using the Jamovi statistical analysis tool and excel to calculate the results and data. Therefore, this study will focus on certain questions (see appendix) in the survey that satisfies the research questions. The research questions are detailed here, and their variables are defined. Consequently, the sections in the survey questions that are essential are the:

1. Survey question 11 to 20: The two-factor structure of the Alcohol Use Disorders Identification Test (AUDIT C and AUDIT Consequences)
2. Survey question 30: 9 item Drinking Context Scale (DCS-9)
3. Survey question 7: Pocket Money bands
4. Survey question 10: Types of alcoholic beverages preferred by each gender.

Not only will the answers to the above questions be quantified, but they will also be analysed to test statistical significance. Furthermore, this methodology chapter will assess how the research questions will be answered and analysed by using statistical methods of analysis which include chi-square test for association, independent t-test, and correlation analysis. The research questions require different statistical analyses based on the different types of variables

to be tested. Additionally, some of the main research questions will have follow-up/supporting questions that will be analysed and answered to provide more detailed patterns of drinking that answer the main research questions. Lastly, the details of ethical protocols observed, and population samples used in this project.

3.2 Research Questions

The research questions, their variables, and the quantitative survey measure tools to calculate them are:

1. Research Question 1: Is there a statistical difference between the proportions of male and female students who abstain from drinking?

   Nominal Variables: the female and male students will be analysed according to the association between the gender which abstains from alcohol and which do not.

   Measure: The World Health Organization's (WHO's) Alcohol Use Disorders Identification Test (AUDIT) is the most widely tested instrument for screening in primary health care. This is a screening too that merely identifies unhealthy use and does not diagnose alcoholism. For this study, the AUDIT-Consumption (AUDIT-C) tool will be used as the research is only concerned with the consumption rate and how other variables affect this rate. AUDIT C comprises of items 1- 3 of the whole AUDIT survey and it is appropriate in this study as it has been used in similar (Young & Mayson, 2010)University studies measuring alcohol usage (see, (Young & Mayson, 2010) (du Preez et al., 2016).

2. Research Question 2: Is there a statistically significant difference in alcohol consumption between female and male student drinkers? (Excludes those who abstain from drinking.)
   a. From the students who drink, how much of them drink alcohol at risky rates?
   b. Has the mean score of AUDIT C of males and females increased over the years at Rhodes University?

   Variables: The grouping variable is gender, and the dependant variable is the AUDIT C Total score which is out of 12.

   Measure: AUDIT Consumption factor (item 1-3).

3. Research Question 3: Is there a statistically significant difference in alcohol consequences between female and male student drinkers? (Excludes those who abstain from drinking.)
    a. Of these consequences, which of them affect the women more than the male drinkers?

    Variables: The grouping variable is gender, and the dependant variable is the AUDIT Consequences total score which is out of 24.

    Measure: AUDIT adverse Consequences factor (items 4 – 10).

4. Research Question 4: Is there a statistically significant difference between female and male student drinkers' preferred types of alcoholic beverages?
    a. Which type of drinks makes people drink above their AUDIT C cut-off score of high consumption rates?

    Variables: different types of alcohol including Wine, Alcopops, spirit cooler, beer, and other beverages, and the dependant variable of gender

5. Research Question 5: What are the contexts in which women student drinkers are most likely to drink excessively?

    Variables: Likert scale responses that are ranked and codified. The code is Extremely Low= 1, Low = 2, Moderate = 3, High = 4, Extremely High = 5.

    Measure: The mean scores of individual contexts in the DCS-9 to determine exactly which situations that will lead female drinkers to imbibe excessively. Drinking contexts measured using a Likert scale, which includes the 9-item version of the Drinking Contexts Scale developed by O'Hare (1997). The scale was also further validated to be an accurate measure of first-year alcohol-consuming contexts, in a more recent study in 2010 (Talbott et. al, 2010). The Drinking context Scale consists of 3 specific contexts which are:

        1. Convivial drinking (item 1-3)
        2. Negative coping (item 4-6)
        3. Intimacy drinking (item 7- 9)

6. Research Question 6: What is the relationship between income and alcohol consumption amongst female student drinkers?

    Variables: AUDIT C scores correlated to more pocket money

Measure: AUDIT C and the pocket money grouping bands starting from R500 or less to above R3000.

3.3 Sample

503 first-year student participants took an online self-administered survey in 2015, which aimed to screen students drinking behaviours and norms. The students enrolled at Rhodes University a coeducational university in the Eastern Cape region of South Africa. Rhodes University is situated in the student town of Makanda (Grahamstown) which houses several alcohol retailers. There were not any students who were under the age of 18 in this sample. Thus, the participants were aged 18 to 22 and they were randomly selected from the student registry at Rhodes University. The survey was administered using SurveyMonkey® an online survey tool that was sent to randomly selected First Year students. Responses were self-administered. For this project, the female and male responses will the compared to assess whether the trends of drinking are statistically different.

Furthermore, the identifying details were excluded in the data set for this study thus not compromising the consent given by participants. Of the 503 students, 313 identified themselves as female, and 190 were males. However, the sample size decreases when the 122 students who abstain from drinking are excluded therefore making the adjusted sample size 381 students, of these 222 are female and there are 159 male students. The abstainers are excluded when analyzing the research questions 2 to 6 (which refer to alcohol consumers) because it makes the statistical analysis more accurate. Additionally, in the research question which explores drinking contexts, only the female drinking participants are analyzed so is the correlation matrix on whether more pocket money leads to an increased.

3.4 Analysis Tables

Research Question 1: Is there a statistical difference between the proportions of male and female students who abstain from drinking?

This analysis is shown in a 2 x 2 chi-squared table whereby the responses are converted to numerical terms so that a contingency table can be produced; 0 denotes Never drinks and 1 denotes drinking. Subsequently from these contingency tables, X^2

shows the significance level of which gender is more likely to abstain. Cramer's v will be used to show the significance of the association.

Table 1: Abstinence for male and female participants

Contingency Tables

	How often do you have a drink containing alcohol?		
What is your gender?	0 (abstains)	1(Drinks)	Total
Male	31	159	190
Female	91	222	313
Total	122	381	503

Research question 2: Is there a statistically significant difference in alcohol consumption between female and male student drinkers? (Excludes those who abstain from drinking.)

Analysis: t-test of AUDIT C scores will be tallied and compare the mean scores of each gender according to their specific cut-off score which denotes high-risk consumption.

a. From the students who drink, how much of them drink alcohol at risky rates?

Analysis: group the people who are drinking according to the level of consumption that they imbibe in from low risk to very high-risk consumption, using the WHO Cut off points that apply to each gender.

Has the mean score of AUDIT C of males and females increased over the years at Rhodes University?

Analysis: comparing the mean AUDIT C Scores in a 2010 AUDIT Study (Young & Mayson, 2010) and the 2015 results which are the ones analysed in this paper. By using an online statistical unpaired t-test calculator at www.graphpad.com thus comparing the mean, standard deviation, and Sample size of the results of the two years to determine whether the AUDIT C scores (for both genders) are increasing in more recent years.

Research question 3: Is there a statistically significant difference in alcohol consequences between female and male student drinkers? (Excludes those who abstain from drinking.)

Analysis: a t-test of independent samples will be used and the significant effect of gender on dangerous consequences will be assessed. The t value will be Welch's t-test value because the sample does not have equal variances and the sample sizes of female and male are unequal.

Supporting question: Of these consequences, which of them affect the women more than the male drinkers?

Analysis: The frequency of the rate of answers for three consequence questions (one dealing with negative emotions, the other with health consequences, and the last question addressing periods of Heavy Excessive Drinking) will be compared between the males and females.

Research question 4: Is there a statistically significant difference between female and male student drinkers' preferred types of alcoholic beverages?

Analysis: Chi-square tables to show the association of types of drinks to gender. Five chi-square tables analyse the association with the 5 types of alcohol provided in the survey. Namely. the types of alcohol were Wine, alcopops, spirits/ liquor, beer, and other alcoholic beverages. In all the beverages 0 denotes never drinking that substance, in particular, 1 represents drinking the beverage. To get whether the associations have statistical significance X^2 value must be calculated.

I. Chi-square table of association of beer and gender

Table 2: Female and male participants who drink beer.

Contingency Tables

	Participants who drink beer		
What is your gender?	0	1	Total
Female	199	23	222
Male	62	97	159
Total	261	120	381

II. Chi-square table of association of Wine and gender

Table 3: Female and male participants who drink wine.

Contingency Tables

	Participants who drink wine		
What is your gender?	0	1	Total
Female	89	133	222
Male	113	46	159
Total	202	179	381

III. Chi-square table of association of Alcopops and gender

Table 4: Female and male participants who drink Alcopops.

Contingency Tables

	Participants who drink Alcopops		
What is your gender?	0	1	Total
Female	174	48	222
Male	148	11	159
Total	322	59	381

IV. Chi-square table of association of Spirits/Liquor and gender

Table 5: Female and male participants who drink spirits and liquor.

Contingency Tables

	Participants who drink spirits / liquor		
What is your gender?	0	1	Total
Female	106	116	222
Male	63	96	159
Total	169	212	381

V. Chi-square table of association of Other alcoholic beverages and gender

Table 6: Female and male participants who drink other types of alcohol.

Contingency Tables: Other drinks

	Drinks other

What is your gender?	0	1	Total
Female	206	16	222
Male	153	6	159
Total	359	22	381

Supporting question: Which type of drinks makes people drink above their AUDIT C cut-off scores of high consumption rates?

Analysis: Examine frequency tables of Beer and wine drinkers and which proportion of these drinker score high AUDIT C scores.

Research Question 5: What are the contexts in which women student drinkers are most likely to drink excessively?

Analysis: Ranking context from highest to lowest average scores in the three contexts.

Table 7: Contextual ranking of female participant's drinking habits.

Female DCS – 9 Scores ranked from highest to lowest averages

	Average Score (15)
Total 1: convivial drinking	8.32
Total 2: negative coping	5.31
Total 3: Intimate drinking	4.78
Total context average	18.4

Research Question 6: What is the relationship between income and alcohol consumption amongst female student drinkers?

Analysis: The correlation matrix between the amount of pocket money and rates of consumption among female students.

Supporting Question: which pocket money range has the highest AUDIT C score, and which pocket money band has the lowest AUDIT C score?

Analysis: Frequency tables showing how much the AUDIT C mean scores each Pocket money rank achieved.

Table 8: Relationship between drinking habits and money.

Correlation Matrix

		Total Audit Score	Pocket Money
Total Audit Score	Spearman's rho	—	
	p-value	—	
Pocket Money	Spearman's rho	0.266	—
	p-value	< .001	—

3.5 Ethical Protocol

This project falls under ethic code YELLOW according to the Ethics coding that the RPEC and RUESC. This is because the information to be analysed has already been gathered in 2015 by the supervisor of this project. Thus, the author of this project is not privy to any identifying information of the participants. Additionally, the data is not collected from a group of vulnerable populations and thus causes no harm to the participants involved in the study. The information was given consent by the participants and they gave their consent by opting into the online questionnaire none of the participants were coerced to answer the survey. The students were given an option to not answer the survey if they so decided.

Subsequently, the participants were only incentivised by three cash prizes won through a draw so that more people were willing to partake in the study. Consequently, the odds of winning the prize are too low (3/500) to be a compelling motivation to participate. Besides that, there are no conflicts of interests between the author of this project and the results of the survey.

4 Results

The results section will show analysed tables and the results shown in the APA 6th edition format and whether they are statistically significant to the research questions.

Research Question 1: Is there a statistically difference between the proportions of male and female students who abstain from drinking?

Abstaining rates by gender were found to be statistically significant with Cramer's V value as 0.144 showing that the significance is very low between gender and alcohol abstinence.

Table 9: Abstinence from drinking chi-squared test.

χ^2 Tests

	Value	df	p
χ^2	10.5	1	0.001
N	503		

The relation between abstaining from alcohol was significant by gender, $X^2(1, N = 503) = 10.5$, $p < 0.05$.

Research Question 2: Is there a statistically significant difference in alcohol consumption between female and male student drinkers? (Excludes those who abstain from drinking.)

AUDIT C Score differences by gender were statistically significant.

Table 10: Audit C1 T-test results for female and males who drink.

Independent Samples T-Test

		Statistic	df	p	Mean difference	SE difference
Total AUDIT Score	Student's t	-6.11	379	< .001	-1.54	0.252
	Welch's t	-5.92	299	< .001	-1.54	0.260

[a]Levene's test is significant ($p < .05$), suggesting a violation of the assumption of equal variances.

There was a significantly high effect for gender, $t(379)= -6.11$, $p < 0.05$, with men receiving higher AUDIT C Scores than women.

Table 11: Group descriptive for Audit C for female and male participants.

Group Descriptive

	Group	N	Mean	Median	SD	SE
Total AUDIT C Score	Female	222	4.13	4	2.21	0.149
	Male	159	5.67	6	2.69	0.213

Female student drinkers had lower AUDIT C scores (*M*=4.13, *SD* = 2.21) compared to their male counterparts who scored higher scores (*M*=5.67, *SD*=2.69).

Table 12 Frequency AUDIT C Risk level for women and men

Frequency table: Number of females categorized according to risk consumption Audit C

Scores (12)	Low risk (0-5)	High risk (6-8)	Very high risk (9-12)	Total
Female	158	57	7	222
Frequency table: Number of males categorized according to risk consumption Audit C				
	Low risk (0-7)	High risk (8-9)	Very high risk (10 -12)	Total
Male	114	35	10	159

Table 12 shows that in this sample (64/222) 28% of the women were drinking at high and very high levels of alcohol consumption. Similarly, the proportion of the male that drank at hazardous levels was (45/159) 28% of the sample drinkers.

Table 13 Comparison of the AUDIT C Scores of the year 2010 & 2015.

	2010			**2015**				
	N	Mean	SD	N	Mean	SD	*t*-test	df
Female	183	4.2	3	222	4.13	2.21	0.2700**	403
Male	135	5.33	3.49	159	5.67	2.69	0.9423**	292

**$p>0.05$

Table 14 *p* values of the *t*-test of the comparison studies of 2010 & 2015 by gender.

Group	Years	*p*
Female	2010 - 2015	0.7873
Male	2010 - 2015	0.3468

Table 14 shows the AUDIT C mean scores for students, in the same University, within five years. The t-test results showed that there is no statistical significance of AUDIT C (3 item test) mean Scores in first year female students $t(403)= 0.27$, $p > 0.05$, showing that there has not been a means score difference. Similarly, AUDIT C Scores for the males did not significantly change when comparing the years 2010 and 2015 $t(292) = 0.94$, $p > 0.05$.

Research Question 3: Is there a statistically significant difference in alcohol consequences between female and male student drinkers? (Excludes those who abstain from drinking.)

Adverse Consequence factor is statistically significant between female and male students.

Table 15: T-test results for consequences of drinking alcohol

Independent Samples T-Test

		Statistic	df	p	Mean difference	SE difference
Total Audit Consequences	Student's t	-2.7[a]	103	0.008	-1.94	0.718
	Welch's t	-2.56	65.9	0.013	-1.94	0.756

[a] Levene's test is significant ($p < .05$), suggesting a violation of the assumption of equal variances.

There was a significant effect for gender, t (65.9) = -2.56, $p< 0.05$, with men scoring the most points for adverse consequences.

Table 16 Health Adverse consequences question.

Frequencies of Has a relative, friend, doctor or other health care worker been concerned about your drinking or suggested you cut down?

	What is your gender?

Has a relative, friend, doctor or other health care worker been concerned about your drinking or suggested you cut down?	Female	Male
Never	207	144
Yes, but not in the last year	2	5
Yes, but not in the last year	13	10

This table shows that (13/222) 5% of the female demographic of drinkers had a medical incidence because of alcohol which is a similar percentage as the males (10/190) 5%.

Table 17 Negative emotions associated after HED.

Frequencies of How often during the last year have you had a feeling of guilt or remorse after drinking?		
	What is your gender?	
How often during the last year have you had a feeling of guilt or remorse after drinking?	**Female**	**Male**
Never	110	71
Less than Monthly	83	53
Monthly	19	23
Weekly	6	7
Daily or almost daily	3	4

Feelings of guilt by women drinkers caused after a period of HED happens to (111/222) 50% of women drinkers.

Table 18 Frequencies of HED

Frequencies of How often during the last year have you found that you were not able to stop drinking once you had started?		
	What is your gender?	
How often during the last year have you found that you were not able to stop drinking once you had started?	**Female**	**Male**
Never	150	119
Less than Monthly	35	19
Monthly	23	13
Weekly	8	7

Daily or almost daily	1	0

Of the female participants 14% had experiences whereby either Monthly, weekly, or daily they could not stop drinking once they started. Comparing that statistic to the male population where 10% could not stop drinking either monthly or weekly occasions.

Table 19: Descriptive for overall consequences of drinking alcohol

Group Descriptive

	Group	N	Mean	Median	SD	SE
Total Audit Consequences	Female	67	5.3	5	3.28	0.401
	Male	38	7.24	6.5	3.96	0.642

Female students have lower adverse consequences brought about by alcohol (*M*=5.3, *SD*=3.28) compared to men (*M*=7.24, 3.96).

Research Question 4 Is there a statistically significant difference between female and male student drinkers' preferred types of alcohol beverages?

I. Significance level of Beer associated with gender significant. The Cramer's V 0.538 shows a high level of significance.

Table 20 Chi-squared results for association between drinking beer and gender.

χ^2 Tests

	Value	df	p
χ^2	110	1	< .001
N	381		

The relation between the gender and drinking beer was significant $X^2(1, N=381) = 110$, $p < 0.05$. Men are more likely to drink Beer.

II. Significance level of Wine associated with gender is statistically significant. Cramer's V value is 0.306 showing a low level of significance.

Table 21: Chi-squared results for association between drinking wine and gender.

χ^2 Tests

	Value	df	p
χ^2	35.7	1	< .001
N	381		

The relation between gender and drinking Wine is statistically significant $X^2(1, N=381) = 35.7$, $p < 0.05$. Women are more likely to drink wine.

III. Significance level of association between Alcopops and gender is a significant but a low significance as the Cramer's V is 0.2.

Table 22: Chi-squared results for the association between Alcopops and gender.

χ^2 Tests

	Value	df	p
χ^2	15.3	1	< .001
N	381		

The relation between gender and drinking Alcopops is significant $X^2(381) = 15.3$, $p < 0.05$. Women are more likely to drink Alcopops than male students.

IV. Significance level of association between gender and students consuming Spirits/Liquor has very low statistical significance with Cramer's V is 0.08.

Table 23: Chi-squared results for the association between Spirits / Liquor and gender

χ^2 Tests

	Value	df	p
χ^2	2.48	1	0.115
N	381		

The relation between gender and drinking Spirits/Liquor has no statistical significance $X^2(381) = 2.48$, $p > 0.05$. Males and females drink this beverage equal amounts.

V. The significance level of relationship between gender and consumption of other (non-Specified) alcohol beverages has no statistical significance. Cramer's V is 0.07 showing negligible level of significance.

Table 24: Chi-squared results for association between non-Specified alcohol and gender

χ^2 Tests

	Value	df	p
χ^2	2.01	1	0.157
N	381		

The relation between gender and drinking Other unspecified alcohol is not statistically significant $X^2(381) = 2.01$, $p > 0.05$. Both genders drink other types of drinks in the same rates

Supporting question: Which type of drinks makes people drink above their AUDIT C cut of score of high consumption rates?

Table 25 Frequencies of AUDIT C scores and Beer preference

Frequencies of Beer

		Total AUDIT Score											
Beer	**What is your gender?**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Beer	Female	1	4	1	3	2	3	5	1	2	1	0	0
	Male	4	5	8	9	12	12	14	9	15	7	1	1

The table displays all the score of AUDIT C from 1 to 12. By using the respective cut-off scores of each gender (6 for women and 8 for men), there are (12/23) 5% of the students of the total female beer drinkers drink above the AUDIT C score of 6. Of the male Beer drinkers (33/64) 52% of them drink above the AUDIT C score of 8 which denotes heavy drinking.

Table 26 Frequencies of wine consumption and AUDIT C scores

Frequencies of Wine

		Total AUDIT Score											
Wine	**What is your gender?**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Wine	Female	19	23	17	17	19	20	10	4	3	1	0	0
	Male	3	5	6	4	8	6	2	3	5	2	1	1

Of the female Wine, drinkers consisted of (38/133) 28% of them drank at hazardous levels above their cut-off scores whilst the male students who drank Wine (12/46) 26% of males drank this beverage at excessive levels.

Research Question 5: What are the contexts in which women student drinkers are most likely to drink excessively?

Table 27: Scaled averages of drinking context for female participants

Female participants Drinking Context scale Averages

	Average
Total 1: convivial drinking	8.32
Total 2: negative coping	5.31
Total 3: Intimate drinking	4.78
Total context	18.42

The table above shows the means of which context and situations women find themselves drinking in. The highest average score is that women drink when they are in socialising situations whereby the mean score of 8.33 score out of a total of 15. The women are least like to drink excessively when they are in an intimate setting such as before sex, they had an average score of 4.78 which is the lowest of the context. The results of the total score of DCS-9 out of a total 45 the average total of the female students was 18.4.

Research Question 6: What is the relationship between income and alcohol consumption amongst female student drinkers?

Table 28: Results of the relationship between drinking and pocket money.

Correlation Matrix

		Total Audit Score	Pocket Money
Total Audit Score	Spearman's rho	—	
	p-value	—	
Pocket Money	Spearman's rho	0.266	—
	p-value	< .001	—

There is a strong correlation between higher pocket money and more Alcohol consumption rates among the female student drinkers, these two variables were weak correlation $r(220) = 0.266$, $p < 0.05$.

Supporting question: which pocket money range has the highest AUDIT C score, and which pocket money band has the lowest AUDIT C score?

Table 29 Pocket money ranges with the mean AUDIT C Scores

Descriptives

	Pocket Money (2)	Total Audit Score
N	More than R3000	2
	R1001- R1500	53
	R1501- R2000	14
	R2001- R2500	8
	R2501- R3000	4
	R500 or less	65
	R501 - R1000	76
Mean	More than R3000	4.00
	R1001- R1500	4.70
	R1501- R2000	5.29
	R2001- R2500	5.13
	R2501- R3000	4.00
	R500 or less	3.29
	R501 - R1000	4.14

The highest AUDIT C Score mean (M= 5.29) is in the pocket money range R1501 and R2000.

The lowest AUDIT C Score is in the pocket money R500 or less with an AUDIT C Score of 3.29.

5 Discussion of the Results

5.1 Introduction

This section of the project will explain the findings of the survey against the literature on female drinking. This discussion will explore whether traditional assumptions concluded about female drinking and consumption levels are accurate or not. Additionally, the contextual patterns and motivations of why women drink the alcohol they do will be assessed, to explore whether this difference is significant. The subsections will be separated by the hypothesis tested and the literature that exists on the topic.

The first section examines the rate of high abstinence in women of all races and why this happens at much higher rates than men. By looking at the different races who abstain the data analyses whether the rate of abstinence occurs in women of all races. Secondly, aspects in which the means may have shifted in the past to this study whether these scores for women are increasing as some qualitative studies have projected (Ajayi, Owolabi, & Olajire, 2019). This project's results have shown that this increase is not statistically significant. These scores show the distinct nature of female drinking which is not as hazardous as men but shows a growing mean and rate of drinking among University students over the years.

Thirdly, the discussion will focus on how the consequences of high AUDIT C scores are so dissimilar to males even when women drink less due to biological differences (Mendonça et al., 2018). However, the results show that there are negative emotions, as consequences, after women engage in HED. Additionally, this study found that the types of drink correlate with research about the changing ways in which women now drink alcohol and how marketing (Tyree & Jacobs, 2013) and other forms of commercialization (Letsela, Weiner, Gafos, & Fritz, 2019) have created different trends of drinking in the female population particularly amongst students (Knight, Castelnuovo, Pietrabissa, Manzoni, & Simpson, 2017). These results show that there is a strong correlation between Beer and males showing and that was the only strongly significant correlation.

Penultimately, the contexts of drinking for these women in this study showed that they excessively drink in social settings. Lastly, there are conflicting reports in terms of whether people drink more, or less when they have less money, and it all depends on which demographic is being assessed as the lower-income women who are also not at school or unemployed tend to imbibe more alcohol (Ojo et al., 2010).

5.2 Rates of Alcohol Abstinence between genders

According to the WHO, more women are more likely to be lifetime abstainers from alcohol than men. Hence, the current assessment was making a chi test to determine whether the number of female abstainers in this study was statistically significant from the males. The results show a significance and a correlation that favours women as the most likely to abstain. What the reasons are behind this is cultural or environmental is above the scope of this paper, but it is a trend that is prevalent across the whole world including this South African institution. The results here show that at Rhodes University, female first-year, students are more likely to abstain from alcohol more than men. Thus, this shows that these students are not affected by external attitudes about drinking as they continue to not drink even in a University setting which largely fosters autonomous environments with less judgement among peers.

In addition to this, the fact that the participants that were studied were around the age that the WHO (2016) stated is the time when most people engage in consuming alcohol shows that if the people who do not drink at this age, they are unlikely to ever drink.

5.3 Relationship between high Alcohol Consumption and Gender

The results of this study show that shows that in this sample 64 of 222 women (28%) were drinking at high levels and very high levels of alcohol consumption, at a stage that could negatively affect their bodies. Meanwhile, amongst the men also have a percentage of 28% of high-risk consumption scores. Despite this, the overall AUDIT C Score is stated that men have a higher consumption score. Therefore, the study showed that the rate at which women who consume alcohol is still overall smaller than the males even if it looks like the proportion of hazardous drinking is similar in both genders. Ultimately, these results show that women in tertiary are drinking at heavy rates but not at the same rates as men.

Furthermore, when the means, Standard Deviation, and sample size of this project's participants were compared to a previous study done in 2010 (Young & Mayson, 2010) the statistical significance was not significant to prove that the rate at which women are drinking is growing over the years at Rhodes University. Similarly, the AUDIT C scores of male students did not statistically grow in the two years. Therefore, this study provides a different

pattern of student drinking that some other literature has presumed for other Southern African states where they conclude that the rates of consumption are increasing among University students (Namagembe et al., 2010).

Consequently, the results here imply that first-year students at Rhodes are not decreasing their amounts of drinking alcohol, yet they are also not drinking more than they used to. Even though the 2010 journal entry and the 2015 data (this study) consist of a different set of participants, the students have kept the same culture and behaviour around how much they consume in a space of five years.

5.4 Adverse Consequences of Drinking for Women

The results show that there is some concern to be made about women's drinking habits even though their instances of binge drinking are not as prevalent as their male counterparts. Some practices show signs of excessive use and may lead to other health concerns in the future. The Welch's t score was -2.56 showing that there was a negative correlation and thus that women have significantly fewer consequences than male students. The statistical significance shows that the means of AUDIT adverse consequence score of men and women are different and women in this study had faced fewer consequences of alcohol drinking than the males.

However, there are specific consequences that this paper found alarming for female students, despite their overall score of consequences being significantly less than men. Therefore, the negative emotions that most women feel after drinking are a cause for concern, and the similar proportions in which women and men go to seek medical help due to consequences brought by alcohol consumption is a hazard. In this study, (13/222) 5% of the female demographic of drinkers had a medical incidence because of alcohol which is a similar percentage as the males (10/190) 5%. Despite these two genders having lower alcohol in their systems, they both have encountered health problems after HED. The implication of this percentage shows that even when the two genders drink different volumes of alcohol, they have similar health repercussions. Thus, women and men are putting themselves in unhealthy positions after they drink alcohol. This is disconcerting because this is an otherwise healthy and young sector of the population.

However, the highest consequence that the women were facing was the effect of regret after drinking. The feelings of guilt by women drinkers caused by drinking happens to (111/222) 50% of them. A major study in Australia concluded that young women often bond over binge drinking escapades and thus it may sometimes form part of their fun activities and be a source of social media content (Brown & Gregg, 2012). This theory is displayed clearly in the results. This is a cause for concern because it means half of the women who drink do so and feel negative emotions afterwards however, they do not quit because they bond over those feelings and they are normalised and ascribed to be part of the joy of drinking. Therefore, the results illustrate that these emotional upheavals that women face after drinking do not only affect Australian students but also South African female students in Rhodes.

Ultimately, alcohol is affecting student's mental health and physical health. Women are shown to be more susceptible to the negative emotional regret of drinking heavily. Interestingly, the women, however, continue to engage in binge drinking episodes as shown in their responses when asked whether they engage in binge drinking episodes. Of the female participants, 14% had experiences whereby either Monthly, weekly, or daily they could not stop drinking once they started. Comparing that statistic to the male population where 10% could not stop drinking either monthly or weekly occasions. These slight margins show that the means of AUDIT Score may not have bigger differences in gender when we examine the whole, however, when doing a more detailed analysis there are a lot of dangerous drinking habits that female students engage in that may be overlooked just because their scores are less than males.

5.5 Type of Drinks

When examining the drinking of women, it is important to analyse what types of drinks that they imbibe in therefore that will answer whether these types of drinks are different from the males. The analysis of the types of drinks has shown that the most significant differences between sour and sweet alcoholic drinks. More specifically, beer and wine had the starkest differences between the genders. This difference is corroborated by a study that claims that women in Southern Africa and America purchase sweeter drinks because they are advertised to women whilst so-called manlier drinks are advertised to men (Tyree & Jacobs, 2013). These drinks become a method of further performing their femininity, thus it has been qualitatively

assessed how alcohol can also be part of the way society purports hegemonic masculinity thus women in places like universities try and oppose this (Dumbili, 2015).

Consequently, the statistical significance in this study found that there was a high difference in mean between genders when it came to the consumption of Beer phi-coefficient 0.538 and $p < 0.05$, whereas Wine and Alcopops consumption there was a statistical significance, but a low significance. The association between gender and Spirits/Liquor and other forms of alcohol found no statistical significance. Therefore, in this sample, a highly significant association between drink preference is the association between men and drinking Beer.

Not only was wine the biggest contrast with the female population having 45% drinking it while the only 26% of the male population drank this beverage. But also, the other drink that had high frequency in the female demographic are the Alcopops/Spirit Coolers with 17% for women and 6% for males. There was also a high difference when the spirit and liquor type of alcohol had stark differences with males where 52% of males imbibed in spirit/liquor while only 39% females.

Conversely, the males have lower percentages when the type of drink is the wine which is advertised to women in magazines (Tyree & Jacobs, 2013). Whether this type of drink cause excessive drinking in women is displayed by the fact that 17% of women drank wine to hazardous levels as opposed to only 6% of males. The differences show that there is an obvious bias where females drink wine twice as much of this beverage as men. However, the overall statistical after a chi-square test shows that the statistical significance exists but is low thereby meaning even if more women consume Wine than the males it is not at a stark difference compared to males. From the results observed in this paper, on the types of drink people consume, one can conclude that there is a case to be made that dominant marketing strategies that advertise drinks like wine to women are working, somewhat.

However, the other type of drink that is examined in the survey is from the Spirits/Liquor and this has a close margin in terms of both genders getting highly intoxicated with that type of alcohol. The results show the frequency whereby 20% of the female students were drinking at harmful levels additionally among the male population 18% were drinking above their cut-off point of 8 AUDIT C score. However, there is no statistical significance on the genders' preference, meaning that both genders consumed spirits and liquor at equal rates.

5.6 Context of Drinking Among Women (Drinking Context Scale DCS-9)

This study found that the highest scores of excessive drinking were during socialising events thus confirming the assumption that convivial events are where students are most like to drink irresponsibly. Additionally, the median score for convivial context is 3 and the total mean average is $M = 8.12$ meaning that most women answered that they have a high chance of binge drinking at parties and social events. However, the women were least likely to drink excessively is before sexual relations (M=1.36) a fact that is opposite to their male counterparts who drink more before sex. Women drink less before sex because they may fear sexual abuse (Harris, Jones, & Brown, 2019). These figures confirm that women are willing to drink at alarming rates when they are participating in socialisation activities. Hence, this shows that at Rhodes female students will most likely drink dangerously in areas where they are amongst friends and socialising and will drink more responsibly when they are with intimate partners.

Conversely, some socialisation activities may not lead to binge drinking among women because of potential danger in the places where drinking happen. These alcohol spaces are an experience where the men try and gain sexual conquests (Watt et al., 2012b). This may explain the reluctance of women to drink at concerts and public events as the mean score is less (M=2.11) which denotes that the public spaces are not a place where they feel comfortable being intoxicated, particularly if these spaces are populated with unfamiliar people.

Furthermore, intimate excessive drinking has a total mean score of 4.78 among women which is half the average of socialisation drinking. Hence, showing that women rarely feel comfortable having sex or being intimate when they are inebriated. Thus, further confirming the existing literature of how males are more likely to use alcohol as a method of gaining sexual encounter conquests (Dumbili, 2015). Whereas women do not drink alcohol excessively for sexual purposes.

5.7 Pocket Money Influencing Higher drinking

This section of the discussion will examine whether higher income determines whether a university student will consume more alcohol. Since this project is exploring the patterns of female students' money is an important factor. Money leading to more alcohol consumption is a researched phenomenon whereby displayed in past research findings such as a previous

study conducted at Rhodes University (Young & de Klerk, 2012). The studies surmised that more pocket money and disposable income meant there was a high chance that people would drink more, thus white males were shown to drink the most as they had higher allowances.

Consequently, this paper examined the relationship between money and excessive alcohol use. The results showed that among women there was a correlation, a weak one, whereby more money led to more excessive drinking. The Spearman rho coefficient was 0.266 showing a weak correlation between pocket money and AUDIT C scores of women. Hence, examining it closely one can analyse which monetary level has the most drinking and whether that is consistent with existing research.

Hence, one would assume that the highest AUDIT C scorers are also the people with more pocket money, yet the survey results showed that highest allowances do not necessarily have the highest AUDIT C scores. Similarly, even the people with the lowest income do not have high AUDIT C Scores. The highest scores appear from the participants that are in the middle specifically the pocket money in the range R1 501 TO R 2501. This encompasses the middle-income range. For instance, the mean score was 5.29 was highest mean out of all the respondents and it was amongst the people who earn R1 501 to R2 000. The second highest score was from the R2 001 to R2 500 with a median of 5.13 AUDIT C score. The other people who had more money got less scores and the people who had the least amount of money had the lowest mean (M=3.29) score of all the income ranges. Interestingly, the people who had R2 501 to R3 000 and more than R3 001 as pocket money both had the same mean scores of 4.00 and yet were lower than the mean scores of people with less money such as the groups that had R501 to R1 000 allowance which has a 4.14 AUDIT C mean. Therefore, high alcohol intake is not from people who have the least amount of money or the most but rather from the students in the middle (in terms of pocket money).

Hence, this shows that more money is not the main precursor to excessive drinking among women in University the personal decision of the student is what makes her drink alcohol at which rates. The weak correlation coefficient shows that women do not spend their money on alcohol and because even women who make smaller amounts of money could have high consumption rates. A theory, of why consumption rates being high even for low-income women in a way that may not be present for men, is that women are most likely to have male suitors who buy them alcohol for purposes of courting them (Mudau et al., 2017). Subsequently, this shows that women may not necessarily need money to get drunk which is

why even women who have low pocket money are still drinking more than students with the highest pocket money band in the question (R3000 and higher).

Subsequently, the correlation to the highest income range leading to the most AUDIT C score was also not very strong. However, what was apparent is that middle-income students drank the most. Thus, the data in this paper shows a new pattern that had not been closely assessed in the exploration of student drinking at Rhodes University about women and their relationship between alcohol and how much money they have.

5.8 Summary of Discussion

Women are more likely to abstain from alcohol but those who do drink will drink less than men due to biological and societal reasons. The rates of alcohol consumption have not changed significantly (between five years) among Rhodes first-year students. Additionally, the consequences of HED amongst men and women is significantly different with men suffering more consequences yet feelings of guilt of HED plague women as other qualitative studies have investigated. Women and men drink the same amounts of spirit/liquor type of alcohol and non- specified alcohol. However, there is a huge difference in who drinks Beer and that is the men that drink it at significantly higher rates than women, as some research on alcohol advertising has predicted that this would be the case. Similarly, there is a low significance on wine and women drinking it, yet they still drink it more than male students. Furthermore, the contexts of heavy episodic drinking (HED) that happen among females is around social events and gatherings with people that they trust yet they are least likely to drink excessively in intimate setting with their partners. Lastly, there is a low correlation between high AUDIT C scores and high amounts of pocket money, yet this correlation coefficient is low. A fact shown because neither the lowest nor highest pocket money earners had the highest mean score rather the median pocket money students had the highest consumption mean.

6 Conclusions

The conclusions made by this project are that theories around drinking alcohol are not only true but the reasons behind these stark differences. For instance, the reason why men drink more than women and how this does not exempt women from succumbing to the negative consequences of alcohol. Additionally, other misconceptions are about women's binge drinking episodes are that it happens during general socialisation events, yet the results here show that it is on specific convivial events that are around close friends. Thus, this paper has shed light on where excessive drinking happens in university women. As such if the promotion of healthy drinking is to be encouraged awareness campaigns should be geared towards smaller drinking spaces where women will likely drink heavily. Therefore, not only should there be campaigns about "getting home safely" at Rhodes University but there must also be healthy drinking influencers in smaller groups that could promote safe drinking practices.

Furthermore, these figures state that pocket money may lead to higher consumption but the reason for this is not because of having access to more money but rather the person's personal choice, as women with lower pocket money had high AUDIT Consumption scores. Therefore, women are not motivated by money to drink too much alcohol, yet they seem to be deterred by being regretful towards episodes of binge drinking. The negative emotions that women feel after drinking are disconcerting because there are not enough policies on campuses that address the way alcohol exacerbates mental health worse, especially for women. These dynamics show that women need to be counselled at the school about how to avoid situations of HED because they will end up resenting it the next day. The cycle cannot be broken unless they find methods of being able to have responsible fun with friends without getting into high alcohol consumption.

Moreover, this project was very illuminating because it shows how, as a woman who frequently consumes alcohol am influenced by the societal norms around me including culture and marketing. It was interesting to discover that as a drinker I may think I am making independent decisions however these are primed decisions that are influenced by culture and advertising. Also, the way hegemonic masculinity exists when it comes to drinking in social events is something that became more apparent after doing this study. Before this research, I assumed that when men buy you drinks it was a form of chivalry and manners yet after reading the feminist literature, I realised that this is a way of flexing their masculinity and get sexual conquests using alcohol, and the type of alcohol plays a part in this. As much as I knew that

nothing comes for free the fact that gendered norms are very much prevalent even in such activities as drinking. I had never really realised how when I am having fun in these places, men are involved in much deeper socialisation as the type of drinks they consume are slightly a label to define them. The contrasts and similarities in women's consequences of drinking is also something I never realised except after this paper we suffer similar disadvantages so much more than we realise yet it is always the dominant discourse that the boys are more reckless than us girls.

In addition to this, the study not only gave me new knowledge, but it also was very frustrating as these survey questions were not formulated to get more information on women but rather of the whole University population. Consequently, the study is only available to give a small indication of existing problems in female drinking but no conclusive data. The data set itself was too small for it to make generalized conclusions. Additionally, the study had to be very University centred especially in the way it measures drinking contexts to get a clearer picture of how women handle tertiary education and alcohol. The fact that the survey focused on the whole university shows that it suffered reliability issues because so many responses were left blank and this could alter the validity of the results.

The limitations of this study are that the variables have not all been accounted for such as race, living situation and whether other students' perspectives affect female drinking. Other studies in this same University explored these elements and found that race and place of residence significant factors in the way students drink. Furthermore, this study only focused on one campus and thus does not illuminate concrete drinking practices of female South African students let alone women drinkers in general. Consequently, this study is only applicable to just first-year students as other research has found that drinking activities evolve as students continue university. Additionally, this study forms part of a longitudinal study that has happened at Rhodes University therefore it forms merely an aspect of student drinking, not a universal depiction.

However, the project has successfully examined the nuances of certain practices that women do but are often overlooked. The study, particularly, recognised the situations in which women drink at hazardous levels. The identification of problem areas allows for intervention methods to be effective. For instance, instead of promoting safe drinking before sex (an issue that affects males more) to women this study concluded that women should have intervention messages targeted at them during get together with their friends where they are most likely to

drink excessively. By targeting women at the places where they are most at risk to drink more drinks than they should this could be a very early intervention method to curb addiction before adulthood or pregnancy.

Lastly, this paper serves as an indication of where problem areas are in terms of women's drinking practices. Thus, future projects could examine deeper questions as to why students feel so guilty after drinking.

6.1 Limitations and future study suggestions

Therefore, further research which is combined qualitative and quantitative methodologies could have better results to illustrate these nuances and reasons behind the drinking rituals that apply exclusively to women. Additionally, the research should include all genders, non-binary, gender non-conforming people, and trans women, as they have different experiences since they are a minority people this could produce interesting findings. Moreover, include race and, socio-demographic factors. Furthermore, the DCS-9 is not sufficiently relevant to a study about specific drinking contexts in a University setting. Therefore, a study that would ask University tailored questions would be more apt and valid. The data here is not indicative of all the populations of Universities around the country. It may be more applicable to one small University thus the data here cannot be generalised. Lastly, this survey was not geared to women but everyone which is not sufficient enough to explore the biases or beliefs surrounding women and alcohol the questions must be women centred unlike the survey questions in this study which were generalised.

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7 APPENDIX

7.1 SELECTED QUESTIONS USED IN FIRST YEAR SURVEY of 2015

1. What is your gender?
Female
Male

7. How much pocket money do you have to spend each month, on average?
R500 or less
R501 - R1000
R1001- R1500
R1501- R2000
R2001- R2500
R2501- R3000
More than R3000

10. Now think back to the last time you drank alcohol. What alcohol did you drink? (You can tick more than one option.)
I don't drink
Beer
Wine
Alcopops/Spirit Coolers
Spirits/Liquor
Other (please specify)

AUDIT

11. How often do you have a drink containing alcohol?
Never
Monthly or less
2-4 times a month
2-3 times a week
4 or more times a week

12. How many drinks containing alcohol do you have on a typical day when you are drinking?
1 or 2
3 or 4
5 or 6
7 to 9
10 or more

13. How often do you have six or more drinks on one occasion ?
Never
Less than monthly
Monthly
Weekly
Daily or almost daily

14. How often during the last year have you found that you were not able to stop drinking once you had started?
Never
Less than monthly
Monthly
Weekly
Daily or almost daily
15. How often during the last year have you failed to do what was normally expected of you because of drinking?
Never
Less than monthly

Monthly
Weekly
Daily or almost daily
16. How often during the last year have you needed a first drink in the morning to get yourself going after a heavy drinking session?
Never
Less than monthly
Monthly
Weekly
Daily or almost daily
17. How often during the last year have you had a feeling of guilt or remorse after drinking?
Never
Less than monthly
Monthly
Weekly
Daily or almost daily
18. How often during the last year have you been unable to remember what happened the night before because of your drinking?
Never
Less than monthly
Monthly
Weekly
Daily or almost daily
19. Have you or someone else been injured because of your drinking?
No
Yes, but not in the last year.
Yes, during the last year.
20. Has a relative, friend, doctor or other health care worker been concerned about your drinking or suggested you cut down?
No
Yes, but not in the last year
Yes, during the last year

9 -ITEM DRINKING CONTEXT SCALE

30. Based on your personal experiences, how would you rate the chances that you might find yourself drinking excessively in the following circumstances?

Extremely High ,High, Moderate, Low, Extremely Low

When I'm at a party, or similar get together
When I'm at a concert, or other public event
When I'm celebrating something important to me
When I've had a fight with someone close to me
When I'm feeling sad, depressed or discouraged
When I'm angry with myself or someone else
When I'm with my lover
When I'm on a date
Before having sex