AN EXPLORATION OF ALCOHOL CONSUMPTION EXPECTATIONS AMONG
STUDENTS ENTERING UNIVERSITY RESIDENCES: A HEALTH PROMOTION
APPROACH TO DEVELOPING SOLUTIONS

by

Jeffrey D Wilson

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Abstract

Introduction: University students living in residence consume alcohol in a harmful way. Often this behaviour starts immediately. Little is known about the expectations of students moving into residence.

Methods: Exploratory mixed methods. All data was collected using an anonymous online questionnaire. Quantitative data was analyzed using a Kendall's-tau calculation of correlation. Qualitative data was analyzed using qualitative description.

Results: All quantitative variables were found to be correlated. Student's expectations are based on what they know about the past experiences of others as well as their own history with alcohol consumption. Predominantly students are choosing to drink in residence to feel connected to others and cope with the demands of student life.

Discussion: Students have a complex relationship with alcohol. Health promotion is uniquely positioned to address this phenomenon.

Conclusion: Higher education institutions like Dalhousie University should use the principles of Health Promotion as a guide to create meaningful change.

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Chapter 1: Introduction

Background

Harmful alcohol consumption is a significant public health concern as it can have negative impacts on health outcomes (Nova Scotia Department of Health & Wellness, 2012). There are many forms of alcohol consumption that can be considered to have significant health consequences. These risky forms of alcohol consumption include high levels of drinking each day, repeated drinking to intoxication or blackout, resulting in drinking causing physical or mental harm, and drinking causing dependence or addiction (Babor, Higgins-Biddle, Saunders, & Monteiro, 2001). Butt, Beirness, Gliksman, Paradis, & Stockwell (2011) identified three distinct types of risk associated with harmful alcohol consumption:

1. Hazardous situations or circumstances that require abstinence. Due to the nature of specific situations the consumption of any amount of alcohol increases the risk of negative outcomes;

2. An increase in the long-term risk of chronic disease due to prolonged consumption of alcohol over time;

3. An increase in the short-term risk of injury or acute illness due to the overconsumption of alcohol on a single occasion.

Therefore, harmful use refers to any amount of alcohol consumption that results in physical, mental, or social consequences including a range of acute and chronic health impacts along a continuum that includes death (Babor et al. 2001, Nova Scotia Department of Health & Wellness, 2012).

Alcohol consumption has a presence in the university student lifestyle in the North American context. An increase in risky alcohol behaviours is a characteristic of the transitional

life phase for many between adolescence and adulthood, which generally takes place between the ages of 18 and 25 (Cleveland, Reavy, Mallett, Turrisi, & White, 2014). This age range corresponds with the age of university students that begin post-secondary education direct from high school. Many university students consume alcohol at a high rate causing academic and social problems, as well as increasing the risk of mental and physical health problems (Barnett, Ott, & Clark, 2014; Boekeloo, Bush, & Novik, 2009; Conroy, Sparks, & Visser, 2015; Hallett, McManus, Maycock, Smith, & Howat, 2014; Moore, Williams, Moore, & Murphy, 2013). The literature also shows that students who consume more alcohol are at increased risk than their non-student peers, and this pattern of behaviour persists despite negative consequences (Hasking & Schofield, 2015; Jakeman, Silver, & Molasso, 2014; Moore et al., 2013).

University residences create a unique environment where students are more reliant upon their peers than any other source of influence to establish acceptable norms and behaviours (Boekeloo et al., 2009). This social environment can contribute to high levels of alcohol consumption partially because students are immersed in their social environment and there is an influence shift from parents to peers (Barnett et al., 2014; Hallett et al., 2014). As a result, students living in residence are at an elevated risk to experience negative consequences due harmful alcohol consumption (Loxton, Bunker, Dingle, & Wong, 2015).

Many researchers have identified and characterized the link between the development of social norms that both promote harmful alcohol consumption and accept the negative consequences of harmful consumption among the university student population and increased risk to academic, social, mental, and physical well-being (Barnett et al., 2014; Conroy et al., 2015; Hasking & Schofield, 2015; Henslee, Buckner, & Irons, 2015; Hutter, Lawton, Pals, O'Connor, & McEachan, 2015; Jakeman et al., 2014; Page & O'Hegarty, 2006; Yule, 2014).

Many universities around the world utilize social norm campaigns to try to combat harmful alcohol consumption patterns and suggest new behaviours utilizing harm reduction principles but they have had limited positive impacts (Boekeloo et al., 2009; Cleveland et al., 2014; Conroy et al., 2015; Henslee et al., 2015; Page & O'Hegarty, 2006; Young & Mayson, 2010; Yule, 2014). These campaigns often focus on correcting misperceptions that students have of the consumption patterns of their peers whom they are using to establish their own alcohol consumption patterns. Therefore, social norm campaigns have focused on presenting students with accurate information in an attempt to establish new alcohol consumption norms (Boekeloo et al., 2009; Conroy et al., 2015; Henslee et al., 2015; Page & O'Hegarty, 2006; Yule, 2014). However, harmful alcohol consumption in residence often begins on move-in day and continues throughout orientation week (Nova Scotia Department of Health and Wellness, 2012), arguably before students have had the opportunity to develop and share social norms and to establish acceptable behaviours in their new communities. Therefore, this research argues that prospective university students may have established expectations of alcohol consumption prior to moving into residence. The following research provides evidence that these expectations have a significant relationship to actual patterns of harmful consumption while living in residence.

Significance

As seen from the background literature, much research has been conducted to identify and analyze the alcohol consumption patterns of university students. There is strong evidence indicating that university students, especially university students living in residence, engage in harmful alcohol consumption at a higher rate than their non-student peers (Barnett et al., 2014; Hallett et al., 2014; Hasking & Schofield, 2015; Moore et al., 2013). This is an important phenomenon and can have serious, negative impacts on students, including death (Nova Scotia

Department of Health and Wellness, 2012). There is little evidence in the reviewed literature that identifies the alcohol consumption expectations of incoming students and whether those expectations have a significant relationship with actual consumption patterns.

Adding to the understanding of harmful alcohol consumption patterns among university students is important to both university administration and students. For administration, a deeper understanding of the causes of harmful alcohol consumption among students increases the evidence base from which to determine responses and plan proactive strategies. This research identifies and characterizes the relationship between incoming expectations and actual consumption patterns to expand the understanding of university students' alcohol consumption. With new information, university administrations can make evidence-based decisions to address incoming attitudes towards alcohol and help to stop the proliferation of an alcohol culture that supports harmful consumption patterns. New evidence may change the distribution of resources away from reactionary responses toward responses addressing incoming expectations to reduce harm. In this way, university administration can help redefine the culture in residence and shift student expectations away from harmful alcohol consumption and towards attitudes and norms that support student success. This change may make a positive impact on academic achievement and retention for students living in residence.

For students, new evidence about incoming expectations can expand the knowledge base from which they make personal decisions regarding alcohol consumption and alter how they influence their peers. Social norms campaigns operate on the foundational principle that students decide to consume alcohol in a harmful way because they do not know, or are ambivalent to, the risks associated with alcohol use and are influenced by the perceived attitude of their peers towards alcohol (Young & Mayson, 2010). Generating new evidence regarding incoming

expectations of alcohol consumption and its relationship to risk makes it possible to interrupt the development of social norms permissive of risky consumption earlier in the student's time spent in residence. Providing students with information about their expectations of consumption allows them to understand, reflect upon, and challenge social norms that promote harmful consumption patterns.

Purpose

This research set out to identify the relationship between a student's expectations of alcohol consumption prior to moving into university residence and their actual rates of alcohol consumption when living in residence. The nature of this research and the diversity of its purpose dictated a mixed methods approach to data collection to examine the phenomenon of harmful alcohol consumption among a sample of students living in university residences. By collecting quantitative data on expectations and actual consumption behaviours this research project was able to identify a significant relationship between expectations and reality. Then, by collecting qualitative data this research project was able to gather information directly from the participants in their own words about the formation of their expectations and what was influencing them to consume alcohol. Thus, the results and discussion could tell a deeper story about the relationship between students living in residence and harmful alcohol consumption behaviours. In doing so, it became clearer what areas of future research are required and identified some potential targets for intervention.

The relationship between expectations and actual patterns of consumption will be analyzed quantitatively. Similarly, the relationship between self-reported data on frequency of consumption and quantity of consumption per occasion and data representing the perception of alcohol consumption by peers will be analyzed quantitatively. Data to characterize this

phenomenon (specifically what information was the expectations of participants based on, who or what were the sources of that information, and what influences them to consume alcohol once they live in residence) were collected qualitatively using open ended survey questions and analyzed using qualitative description. In addition to quantitative and qualitative data, this research study collected the sex and/or gender identity of the participants and a self-reported indicator of whether the participant is the legal age to consume alcohol both in their home prior to moving into residence and in the location of the residence to describe the sample.

The research questions for this study included:

Quantitative

Question 1: Is there a correlation between a student's expectation of personal alcohol consumption and their reported actual consumption rate while living in residence?

It is hypothesized that there will be a significant correlation between the student's expectation of alcohol consumption and their actual rates of consumption indicating that students living in residence are consuming alcohol at a rate related to their expectations prior to moving in.

Question 2: Is there a correlation between a student's expectation of alcohol consumption among their peers and the student's perception of their peers' actual consumption rate while living in residence?

It was hypothesized that there will be a significant correlation between a student's expectation of alcohol consumption by their peers and the perception of actual consumption by their peers indicating that students living in residence are perceiving their peers to be consuming alcohol at a rate related to their expectations prior to moving in.

Question 3: Is there a correlation between a student's expectation of their personal alcohol consumption and the expectation of alcohol consumption of their peers?

Question 4: Is there a correlation between a student's report of their actual personal alcohol consumption and their perception of actual alcohol consumption of their peers?

It was hypothesized that both quantitative question 3 and 4 will show a significant relationship between the participants' self-reported data and the corresponding data of their peers indicating that students measure their own expectations and actual consumption rates against that of their peers in a consistent and measurable way.

Qualitative

Question 1: What informs a student's expectation for alcohol consumption prior to moving into residence and what are the sources of that information?

Question 2: What factors influence a student's decision to consume alcohol when living in residence?

These qualitative questions were assessed by asking the participants, as a student living in residence in their first year direct from highschool what their expectations of alcohol consumption were based on and what influenced them to consume alcohol once they lived in residence.

Methodology

This research is a pragmatic, exploratory mixed methods design. This mixed methods design used quantitative methods to characterize the relationship between variables and then explained the phenomenon further using qualitative data. The study participants are first year Dalhousie University students living in residence for the first time. Participants were recruited in a purposive way through direct email supported by a partnership with the Dalhousie University Vice Provost of Student Affairs and the Director of Residence and Student Life.

The quantitative data were collected through a survey asking eight questions: expectations of quantity and frequency of consumption for self, quantity and frequency of actual consumption after moving into residence for self, expectations of quantity and frequency of consumption for peers, quantity and frequency of perceived consumption after moving into residence for peers. Quantitative survey questions utilized descriptors of alcohol consumption patterns from the Alcohol Use Disorders Identification Test (AUDIT) questionnaire (Babor et al., 2001). The AUDIT questionnaire has been tested numerous times and has demonstrated high validity, reliability, sensitivity, and specificity while remaining culturally aware and appropriate (Babor et al., 2001).

The main statistical effects were tested using Kendall's Tau to establish the presence and significance of the relationships between the data to answer the four quantitative research questions. As diagramed below, those relationships are between: self-expectation and self-actual, expectation of peers and perception of peers' actual, self-expectation and expectations of peers, and self-actual and perceptions of peers actual.

Main Effects:
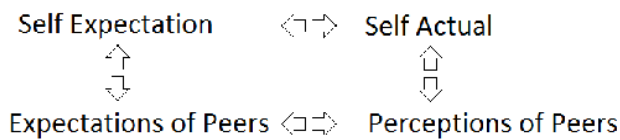
The data collected from the quantitative questions using the AUDIT scale are non-parametric because the variables are not continuous. Therefore, the data consisted of rank-ordered dichotomous variables and the relationships were tested using Kendall's Tau consistent with the methods used by Drake, Osher, and Wallace (1989) and Bradley, McDonell, Bush, Kiviahan, Diehr and Fihn (1998).

Qualitative data were collected through three open ended questions as part of the online questionnaire. Questions were designed to describe the relationship between expectations and actual rates of consumption to answer the two qualitative research questions above. Much of the reviewed literature used only quantitative methods to assess the relationship between students and harmful alcohol consumption but this research recognizes the important role qualitative data plays in a mixed methods design. Qualitative data can focus on the lived experiences of students providing important insight into the culture of harmful consumption patterns among students (de Visser et al., 2015). The qualitative data collected were used to investigate the contextual factors affecting the results of the quantitative data providing further insight (de Visser et al., 2015). This is an important step in the overall design of this research because the strategic use of qualitative methods may aid in the development of a suite of intervention tools and strategies which is the goal of the associated knowledge translation and exchange (KTE).

Three demographic questions were asked: month and year of birth, whether they were of age to legally consume alcohol in their home location prior to moving into residence, and their sex and/or gender identity. These questions are being asked to characterize the sample and allow for any interpretations that are possible.

Key Terms

The term *university* in this research will encompass higher education institutions labelled as both "colleges" and "universities". Higher education institutions may be more commonly labeled a college or university depending on the geographic location of the supporting research. As a result, the terms can be used interchangeably in this research but will only be referred to as a university in this study for clarity.

The term *university student* refers to all university and college aged students, typically aged 17-22, who are enrolled in a program at a higher education institution. This age range provides context for the age range expected within the participants of this study. The legal age for the consumption of alcohol in Nova Scotia (the setting of this study) is 19.

Residence includes all university housing and is most often referring to the traditional style, including single and multiple occupant rooms and other shared amenities like cafeterias, all gender washrooms, and common gathering places.

Harmful alcohol consumption is an umbrella term covering the many negative aspects and outcomes from sustained patterns of alcohol consumption (Babor et al., 2001). This includes prolonged consumption, binge drinking, and regular drinking to intoxication or blacking out. These patterns of alcohol consumption elevate risk among university students due to their association with increased instances of death, academic failure, social and relationship distress, violence, sexual assault, sleep disruption and reduced retention (Butt et al., 2011, Nova Scotia Department of Health and Wellness, 2012).

This research recognizes the interlocking relationship of the student identity and the consumption of alcohol at higher education institutions identified in the reviewed literature (Barnett et al., 2014; Boekeloo et al., 2009; Hallett et al., 2014; Hasking & Schofield, 2015; Moore et al., 2013). Therefore, the term *alcohol culture* is used in this research to denote that association and refers to both being a university student and consuming alcohol simultaneously.

Expectation is used throughout this research to indicate the rate at which the participants believed they and their peers would consume alcohol when they were living in residence prior to moving in.

Actual is used throughout this research to indicate the rate at which the participants are consuming alcohol when they are living in residence. When participants are indicating the *actual* rate of consumption of their peers it is labeled as the *perceived* rate because it is not possible for participants to know the actual rate of consumption by their peers due to not always being together. Despite perceived rates being the only way for participants to measure alcohol consumption among peers it is a challenging indicator because people often deny or minimize their alcohol use (Drake, Osher, & Wallach, 1989).

Significance to Health Promotion

Every year over 1800 university students die from alcohol related injuries in North America (Jakeman et al., 2014). Harmful alcohol consumption among university students is a significant public health concern. The literature shows a characterization of the elevated rates of consumption among university students and highlights the increased risk associated with this harmful consumption pattern. Alcohol culture has become an assumed part of university life. This is particularly important in Nova Scotia where reported rates of student alcohol consumption are far higher than other Canadian provinces (Nova Scotia Department of Health and Wellness, 2012). Areas with high rates of student harmful alcohol consumption also had high rates of adult harmful alcohol consumption (Nova Scotia Department of Health and Wellness, 2012). This indicates that student alcohol consumption is an important Health Promotion issue to understand to reduce harmful alcohol consumption patterns. Further, earlier research indicates that students are developing risky alcohol habits that continue to affect them as they transition into life after graduation from university. Health Promotion as a discipline can utilize broad research methodologies like pragmatic mixed methods to both quantify and qualify this phenomenon. Health Promotion is interdisciplinary in nature. This allows Health Promotion

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to pull from the different methodological approaches in the fields of natural sciences, medicine, social sciences, and psychology and as described by Niederberger & Keller (2018). Health Promotion's focus is on both the subjective perceptions of the individual participants, their lived experiences, and personal skills and the population level impacts of the social determinants of health including social, political, cultural, and economic relationships (Niderberger & Keller, 2018).

Summary

Students consume alcohol despite negative consequences and are part of the creation of environments where norms and behaviours both accept and promote harmful alcohol consumption patterns (Barnett et al., 2014; Boekeloo et al., 2009; Hallett et al., 2014; Jakeman et al., 2014). Universities have responded by utilizing social norm campaigns to correct misperceptions about alcohol consumption hoping to change behavior and reduce harm as a result with limited success (Boekeloo et al., 2009; Cleveland et al., 2014; Conroy et al., 2015; Henslee et al., 2015; Page & O'Hegarty, 2006; Young & Mayson, 2010; Yule, 2014).

This research identified the relationship between a student's expectations of alcohol consumption prior to moving in to residence and their actual consumption while living in residence using quantitative methods. It was hypothesized that students arrive expecting to consume alcohol in a harmful way as evidenced by the risky behaviours associated to alcohol historically exhibited by students on move in day and throughout orientation week (Nova Scotia Department of Health and Wellness, 2012). Upon identifying the strength and direction of this relationship, this research utilized open ended questions to identify the information students are using to inform their expectations and the other factors informing the students' personal decision

making to consume alcohol to further characterize the relationship between expectations and

actual consumption rates. This research was shaped by the literature reviewed in Chapter 2.

Chapter 2: Literature Review

Alcohol Consumption's Impact on Health

Harmful alcohol consumption has a significant negative impact on health outcomes. High risk alcohol consumption is characterized by a pattern of alcohol consumption that increases the possibility of harmful consequences (Babor, Higgins-Biddle, Saunders, & Monteiro, 2001). There are many forms of high risk alcohol consumption identified in the literature including high levels of consumption each day, repeated consumption to intoxication, the experience of physical or mental harm because of consumption, and consumption leading to dependence or addiction (Babor et al., 2001).

Harmful alcohol consumption impacts health in three distinct and yet interconnected ways. First, there are situations that require abstinence like the operation of heavy machinery or driving a vehicle where any consumption increases risk of injury or death. Second, there is an increase risk of serious disease due to consumption over time. Lastly, there is an increased risk of injury or acute illness due to over consumption on a single occasion (Butt, Beirness, Gliksman, Paradis, & Stockwell, 2011). The preceding characterization of harms related to risky alcohol consumption indicates that there is a range of acute and chronic health impacts that can be experienced along a continuum of severity which includes death (Nova Scotia Department of Health and Wellness, 2012).

For university students, harmful alcohol consumption is linked to academic problems, mental health concerns, social struggles, injuries, and risky sexual behaviours (Moore, Williams, Moore, & Murphy, 2013). Youth who are in transition to adulthood, like many university students, still have a developing brain. Harmful alcohol consumption can impair their cognitive development which can impact their attention capacity, planning and decision-making skills,

ability to process emotions, and the ability to control impulses (Nova Scotia Department of Health and Wellness, 2012). The reviewed literature shows that areas with high rates of harmful alcohol consumption among students had corresponding high rates of alcohol consumption among adults indicating that behaviours learned and developed while a university student carry forward into adulthood posing a serious public health problem (Nova Scotia Department of Health and Wellness, 2012). Harmful alcohol consumption is an important health issue for people of all ages, but the risk of significant negative health and social impacts disproportionately affects university students.

A study from the Global Burden of Disease 2016 Alcohol Contributors (from this point of referred to as Griswold et al., 2018) has made the landmark statement that there is no level of alcohol consumption that improves health or decreases risk of illness, disease, or death. This study was completed by a group of collaborators who collected data from 195 countries around the world and analyzed the level at which alcohol consumption is associated to health, disease, illness, injury, and death. Their conclusion is frank, "the level of consumption that minimizes health loss is zero" (Griswold et al., 2018). This statement is in direct conflict with the commonly marketed idea that a glass of wine a day is similar in health effects to eating an apple, or possesses disease fighting anti-oxidants similar to blueberries. It is important to consider this image of alcohol as potentially *healthy* when studying the development of alcohol consumption expectations among youth. Challenging the idea of healthy alcohol consumption proposes a new complexity beyond social influences and personal history. It could be a complicating factor when planning and implementing an alcohol intervention when it's possible that those targeted for the intervention believed at some level that the consumption of alcohol is good for them. The results of the Griswold et al. (2018) study need to be analyzed and disseminated widely to bring more

awareness to the negative health effects of alcohol and dispel the myth of protective factors. This could have an impact on the formation of alcohol consumption expectations among students who are moving into residence and their subsequent alcohol consumption behaviours. Regardless of this, people may still choose to drink, and this is especially true of youth in a culture that promotes its consumption such as those living in residence and attending university. This recognition highlights the importance of designing interventions that will work to reduce harm with the potential goal of living an alcohol-free life for some.

Burton & Sheron (2018) provide commentary on the Griswold et al. (2018) study. They believe the results are a demonstration of the substantial contribution of alcohol to death, disability, and injury. As noted in the original study, Burton & Sheron (2018) think the Griswold et al. (2018) study is especially important because of its consideration of the potential protective factors in their calculation of total impact on health. The challenge in following up to this landmark study is to continue to study the impact of complexities related to decision making around alcohol consumption and the efficacy of interventions to change current problematic behaviours.

Harmful Alcohol Consumption and the University Student Lifestyle

University students are at the highest risk for being negatively impacted by the effects of harmful alcohol consumption. Despite this widely-supported statement, alcohol remains a major component of the student lifestyle. Increased risky alcohol behaviours are reported as a characteristic of the transitional life phase between adolescence and adulthood corresponding with the age range of the average undergraduate university student (Cleveland, Reavy, Mallett, Turrisi, & White, 2014). 1800 university students die because of alcohol related injuries per year in the United States (Jakeman, Silver, & Molasso, 2014).

Alcohol consumption is perceived as part of the student lifestyle and explained by students in the reviewed literature as central to the development of personal identity (Moore et al., 2013). University students consume more alcohol than their non-student peers (Hallett, McManus, Maycock, Smith, & Howat, 2014; Hasking & Schofield, 2015; Moore et al., 2013). Harmful alcohol consumption by university students is associated with increased risk due to the choice of more risky methods of consumption including binge drinking (Barnett, Ott, & Clark, 2014). Harmful alcohol consumption carries risk of personal injury and poor academic performance (Conroy, Sparks, & Visser, 2015). And for students who consume alcohol in a harmful way the risk of serious social problems is also high (Boekeloo, Bush, & Novik, 2009).

The need to belong and feel accepted by peers paired with alcohol consumption to regulate or enhance mood are contributing factors to high rates of harmful consumption among university students (Hamilton, 2014). The university atmosphere itself contributes to high levels of harmful alcohol consumption due to an immersion in one's social environment and an influence shift from parents to peers (Hallett et al., 2014).

Alarmingly, students continue to engage in high risk, harmful alcohol consumption even after experiencing negative consequences indicated in the analysis by Jakeman et al. (2014) showing that 2/3 of students who experienced negative outcomes reported that they did not plan to change their alcohol consumption patterns. The university student lifestyle encourages the reframing of harmful alcohol consumption behaviours in a positive light to minimize the negative outcomes and maximize the perceived benefits (Jakeman et al., 2014).

When reviewing literature studying alcohol consumption among university students, residences are often positioned as an environment where harmful alcohol consumption patterns

are more prevalent. Thus, students living in those environments are often at a higher risk of experiencing negative outcomes.

The University Residence Environment

University residences are a unique environment. Beginning university is a significant transition period. Often this significant transition period is also accompanied by a shift in influence. First-year students coming direct from high school begin to rely on peers, instead of guardians, to determine acceptable behaviours. Moving into residence is indicative of a larger transition period for university students whom are leaving home for the first time. Living on campus in a university residence enhances the already prevalent factors of immersion and influence shift contributing to increased harmful consumption due to the more absolute nature of both that the residence environment provides (Hallett et al., 2014). Students moving into residence are at a distinctly high risk of consuming alcohol in a harmful way (Loxton, Bunker, Dingle, & Wong, 2015) and is evidenced by the literature showing that harmful alcohol use is greater among students living in residence than those living at home with their parents (Barnett et al., 2014).

In general, university residences attempt to build environments supportive of community, diversity, inclusion, and academic success. However, university residences are immersive, closed environments. Acceptable social norms are dictated by the students who live in them. The acceptable social norms of these environments towards harmful alcohol consumption are highly influenced by the attitudes and behaviours of the students who move in (Boekeloo et al., 2009). The literature reviewed positions social norms that are both accepting of and even encouraging of harmful alcohol consumption as the explanation for the increased prevalence of harmful alcohol consumptions patterns in university residences.

Social Norms in University Residences

University residences create environments that are heavily influenced by peer interactions which can intensify harmful alcohol use and associated risks (Barnett et al., 2014). Many residence students are away from their families for the first time and surrounded by like-minded individuals who are themselves highly influenced by social norms and expectations (Loxton et al., 2015).

Attitudes and norms predict alcohol consumption intentions which predict alcohol consumption behaviours (Hasking & Schofield, 2015). Among the strongest predictors of whether a university student will consume alcohol is their perception of consumption among other students (Henslee, Buckner, & Irons, 2015). Students who believe harmful consumption to be common place among their peers are more likely to engage in it themselves (Novak & Crawford, 2001).

The perception of peer pressure to consume alcohol in a harmful way may be the most important determinant of health risk behavior among university students (Hutter, Lawton, Pals, O'Connor, & McEachan, 2015). When analyzed, university students evaluated binge drinkers in a positive way showing that harmful alcohol consumption is an accepted norm (Hutter et al., 2015). However, the students' perception of the norm is often inaccurate which illuminates the role of a social norm intervention; namely the correction of those misperceptions to discourage harmful alcohol consumption patterns that are engaged in due to false perceptions (Yule, 2014).

Typical misperceptions about harmful alcohol consumption among university students are that their peers are consuming more alcohol and are more accepting of harmful consumption than in reality (Young & Mayson, 2010). Students that are overestimating the amount their peers are drinking are more likely to consume alcohol in a harmful way themselves (Reis & Riley,

2000). A student with a misperception about their peers' alcohol consumption is at an increased

risk for harm because they may fail to recognize how harmful their own consumption is due to

direct social comparisons to others they believe are consuming more alcohol than them.

One method for combating harmful alcohol consumption is to target normative beliefs

among university students (Henslee et al., 2015). These interventions are carried out by openly

opposing normative beliefs that are permissive of harmful alcohol consumption to reduce

consumption rates (Conroy et al., 2015). There is evidence in the literature showing that

programs intended to decrease the acceptance of harmful alcohol consumption also decreases the

negative effects experienced by the target population (Boekeloo et al., 2009). Results showed

that students consumed less alcohol when their misperception of consumption among their peers

was corrected due to a social norms campaign but in communities where high risk alcohol

consumption was the legitimate norm there was no effect (Page & O'Hegarty, 2006). These

results indicate that accurate normative feedback can reduce alcohol consumption (Young &

Mayson, 2010).

However, attempts to change behaviours without considering the context in which they

are formed will likely be unsuccessful and unsustainable (Moore et al., 2013). Despite the

significance of the social norms explanation of both increased consumption and increased risk,

harmful alcohol consumption patterns have been shown to begin on move-in day and continue

throughout all of orientation week. Social norms develop over time as communities identify what

is important to them and establish behaviours and beliefs are acceptable of its members.

Research by Plotnikoff et al. (2019) studied the efficacy of alcohol interventions in higher

education settings and found that they can be effective in reducing alcohol related behaviours.

That effectiveness is highest when interventions include face to face, individual approaches

incorporating personal feedback and motivational interviewing. It could be argued that these methods account for the complex factors influencing individuals creating a more personalized intervention and thus improving the efficiency. In their study, students who were exposed to interventions consumed significantly less alcohol (first year students, specifically, consumed less alcohol by volume and by frequency) and experienced fewer alcohol related problems when compared to a control population (Plotnikoff et al., 2019). Highlighting more than ever that the mode of delivering alcohol risk intervention information is directly related to the efficacy of the intervention.

George et al. (2019) analyzed the factors influencing a residence student's decision to consume alcohol. They focused on social anxiety and participation in alcohol drinking games hoping to find a relationship between the two. Their literature review shows that students living in residence may experience anxiety completing social tasks like making eye contact and talking with others, which are common occurrences in residence environments where you are immersed in an environment full of new people with a desire to feel connected (George et al., 2019). The George et al. (2019) study hypothesized that socially anxious students who were consuming alcohol to cope would participate in drinking games but that argument was not supported by the data. However, the study did find that social anxiety is generally positively associated with increased alcohol problems among students but not increased alcohol use (George et al., 2019). The timeliness of this article shows that the research community's common understanding of the complexities of alcohol is still developing.

The harm caused by alcohol consumption is complicated to measure due to the multiple ways in which it affects individuals. The Griswold et al. (2019) study lists these negative complications: adverse effects on the organs and tissues related to cumulative consumption,

injuries or poisoning due to acute intoxication, and bodily impairments including self-harm or violence as a result of dependent alcohol consumption. In their conclusion, Griswold et al. (2019) argue for the strong implementation of population level interventions including such objectives as increased taxation, reduced availability, and stricter regulations. Which, on the surface, seems counter to the conclusions of Plotnikoff et al. (2019) arguing for individual interventions. However, the two suggestions do not have to be at odds, they could instead work in concert with each other. Population level interventions could help limit the amount of alcohol available to high school aged students by reducing access, increasing cost, and changing public opinion about the potential positive effects of alcohol consumption. Then, individual interventions could begin immediately with those that are experiencing complications as a result of their alcohol consumption to limit the associated negative consequences. This could help reduce the pressure on university residence environments to challenge the alcohol consumption expectations of incoming students and reduce the related responsibility to address and respond to dangerous outcomes related to alcohol consumption. The George et al. (2019) study presents another option for intervention. They suggest that an intervention targeting the student's intention to drink alcohol in order to conform to social standards and/or overcome social anxiety could result in positive outcomes, but more research needs to be done to test the efficiency of these types of interventions.

Harmful Alcohol Consumption on Move-in Day and Throughout Orientation Week

Harmful alcohol consumption patterns among university students generally begin immediately upon arrival to university residences. Some carry forward harmful alcohol consumption patterns that they have already established in highschool. There is a demonstrated relationship between the transition to university life and increased alcohol use (Boekeloo et al.,

2009). University students are more prone to risky alcohol consumption during specific events like move-in day and orientation week where excessive consumption is normalized due to expectations (Henslee et al., 2015). Orientation week is typified by increased alcohol consumption and relaxed social norms (Riordan, Scarf, & Conner, 2015). Results from the reviewed literature shows that alcohol consumption behaviour during orientation week predicted subsequent alcohol consumption behaviour during the academic year (Riordan et al., 2015).

Increased consumption levels during orientation week establishes a normalized view of harmful consumption that continues to influence students' personal decisions about alcohol during the rest of the year (Riordan et al., 2015). Harmful alcohol consumption on move-in day and throughout orientation week cannot be explained by the social norms theory because there has not been enough time for students to identify common values and establish acceptable behaviours in their residence communities' mere hours after moving in for the first time. Therefore, it is argued that students move in with expectations of consuming alcohol in harmful patterns and that those behaviours become reinforced by their peers resulting in the creation of accepting social norms.

Connecting Expectations to Actual Consumption

Characterizing the relationship between expectations of harmful alcohol consumption prior to move in and actual patterns of behavior while living in residence is important. By doing so, institutions could have a greater understanding of the challenges they will face addressing risky alcohol consumption patterns allowing them to develop and implement interventions to successfully reduce harm in their residence student population. Understanding why students consume alcohol the way they do can lead to more effective programming for the promotion of health and safety (Reis & Riley, 2000). A student's expectations of positive effects related to

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alcohol consumption are shown in the literature to modestly predict alcohol consumption behaviour (Reis & Riley, 2000).

We know that targeting normative beliefs among students has been shown to reduce risky alcohol consumption with mixed results (Conroy et al., 2015; Henslee et al., 2015). Thus, using normative campaigns to reduce the harms related to alcohol consumption in residence could be argued as an evidence-based approach. However, these methods have not been successful in residences where harmful alcohol consumption patterns are legitimately the norm for that community (Page & O'Hegarty, 2006). Therefore, establishing the importance of incoming expectations in predicting harmful alcohol consumption patterns may result in the creation of new methods and the augmentation of existing methods to reduce harms.

Methodology

The methods of this research were driven by the research questions (Onwuegbuzie & Leech, 2006). Pragmatism ensures that the research has the best chance of answering the research questions accurately (Johnson & Onwuegbuzie, 2004). This research project was designed to analyze the potential relationship between the participants' expectations of alcohol consumption prior to moving into residence and their actual consumption habits when they are living in residence, as well as personal details about the foundations of their expectations and sources of influence to drink alcohol in residence. This research also intended to identify any possible relationship between the participants own expectations and behaviours and their perception of their peers. Mixed methods, using both qualitative and quantitative approaches, was the most pragmatic way to assess population level statistics and analyze more personal details related to expectations and influences of individual participants. Mixed methods research can utilize the strengths while minimizing the weaknesses of each method in a single study

(Creswell, Klassen, Plano Clark, & Smith, 2011; Johnson & Onwuegbuzie, 2004). Quantitative research does not utilize first person voice to tell the story of the participants, while qualitative research does not present population level statistics which can be utilized to identify relationships between two or more variables. In this way, it is beneficial to use both qualitative and quantitative methods together in a pragmatic mixed methods approach to both tell a story using the participants own words and identify relationships between variables using statistics. The use of mixed methods to address public health concerns was supported in the reviewed literature recognizing that the complicated nature of current problems facing public health indicates a need for methodological diversity (Creswell et al., 2011).

Quantitative results can be used to assess generalizability and pervasiveness of the phenomenon while qualitative results can be used to interpret clarity, describe the phenomenon, and validate the experiences of the participants (Creswell et al., 2011; Johnson, Onwuegbuzie, & Turner, 2007). Purposive sampling is an important tool to accumulate in-depth information about university students with the intention of achieving an accurate representation of the diversity of student experiences (Teddlie & Yu, 2007). For this study, first-year students direct from high school who had moved into residence in the current year were the purposive sample. The project design intentional targeted this population to eliminate any potential participants whose transition to residence may have happened years previously and whose experiences may be different.

The Alcohol Use Disorders Identification Test (AUDIT) scale was chosen and adapted to the setting of residence due to its sensitivity and specificity validated through multiple tests (Babor et al., 2001). The reviewed literature indicates that the 'drinking days per week' question on the AUDIT questionnaire had the highest criterion validity and test-retest reliability (Bradley

et al., 1998). This question on the AUDIT questionnaire is written as follows "how often do you have a drink containing alcohol?" and the answer scale is "(0) never, (1) monthly or less, (2) 2 to 4 times a month, (3) 2 to 3 times a week, (4) 4 or more times a week". Therefore, this scale was chosen, and the question was adapted to be residence specific and ask specifically about expectations and actual rates of consumption. An example of a question from this study using the adapted AUDIT scale is "prior to moving into residence, how often did you expect to consume alcohol while living in residence?" and the answer scale is "(0) never, (1) monthly or less, (2) 2 to 4 times a month, (3) 2 to 3 times a week, (4) 4 or more times a week".

Qualitative methods focusing on the lived experiences of students provides important insight into the culture of harmful alcohol consumption (de Visser et al., 2015). When used together with quantitative methods, qualitative methods can investigate the contextual factors that may affect the analysis and understanding of quantitative data (de Visser et al., 2015). Qualitative description summarizes the informational content collected through open-ended questions and the result is a descriptive summary of the participants responses (Sandelowski, 2000). When it was completed, the qualitative results allowed for a presentation of the participants lived experiences more integrative than the quantitative results would have alone (Sandelowski, 2000).

This study did not expect the self-identified sex of the participants to have a significant effect on the results. The opportunities and pressures for male and female university students to engage in harmful alcohol consumption are similar (Finlay, Ram, Maggs, & Caldwell, 2012). Changes in sex/gender norms over time have resulted in a convergence in alcohol use (Finlay et al., 2012). However, sex and/or gender identity will be collected to describe the sample. A Chi

Square test was completed post-hoc to analyze if the self-identified sex of the participants has a significant effect on the quantitative responses.

The reviewed literature indicates that people often deny or minimize their alcohol use meaning that the interpretation of the results must be tempered due to reporting bias and the self-selection of the sample (Drake, Osher, & Wallach, 1989; Reis & Riley, 2000). The methods, methodology, and design of this study will be explained in detail in Chapter 3: Methodology, Methods, and Research Design.

Conclusion

There are many forms of harmful alcohol consumption behaviours and there are significant risks associated with harmful alcohol consumption including negative physical, mental, and social consequences (Babor et al., 2001; Butt et al., 2011). University students consume more alcohol than their non-student peers (Hallett et al., 2014; Hasking & Schofield, 2015; Moore et al., 2013). Thus, a high prevalence of hazardous alcohol consumption has been reported in this population (Barnett et al., 2014; Hallett et al., 2014). The University environment contributes to high levels of alcohol consumption, especially living on campus in residence buildings (Boekeloo et al., 2009; Hallett et al., 2014; Loxton et al., 2015). Residences create an environment that is heavily influenced by peer interactions which can intensify alcohol use and increase risk (Barnett et al., 2014). In part, this phenomenon can be explained by social norms. Students who believe their peers are consuming alcohol at a high level are more likely to consume alcohol themselves (Barnett et al., 2014; Hamilton, 2014; Hasking & Schofield, 2015; Henslee et al., 2015). However, very little research can be found to quantify or qualify the experiences of students immediately upon arrival to university and moving in to residence. The reviewed literature documenting alcohol consumption during orientation week shows that

students consume in a harmful way and that patterns of consumption throughout the academic year are at least in part based on social norms created during that time (Riordan et al., 2015).

The purpose of this study was to add to the knowledge base in relation to understanding harmful alcohol consumption among students living in residence. The chosen methods provide the best opportunity for identifying and understanding the relationship between expectations of alcohol consumption and actual patterns of consumption.

Chapter 3: Methods

Methodology, Methods, and Research Design

This study is an exploratory mixed methods research project and relies on epistemological and methodological pluralism by conducting both qualitative and quantitative methods in complement to one another (Johnson & Onwuegbuzie, 2004). Pragmatism is the primary philosophy of mixed methods approaches (Johnson, Onwuegbuzie, & Turner, 2007). Pragmatism is positioned as the philosophy with the greatest opportunity to answer important research questions using mixed methods (Johnson & Onwuegbuzie, 2004)—in this case, increasing this study's capacity to better understand the real-world phenomenon of harmful alcohol consumption by university students. This study included elements of deduction through quantitative methods (i.e., testing of theories and hypotheses), then induction through qualitative methods (i.e., discovery of patterns), and finally abduction by interpreting the results of both together (i.e., using the best explanation available for understanding the results) as explained by Onwuegbuzie and Leech (2006).

The goal of mixed methods research is to maximize the strengths of both qualitative and quantitative research methods while minimizing their individual weaknesses (Creswell, Klassen, Plano Clark, & Smith, 2011). The reviewed literature (Chapter 2) predominantly utilizes quantitative studies to research alcohol consumption among university students (Barnett, Ott, & Clark, 2014; Boekeloo, Bush, & Novik, 2009; Cleveland, Reavy, Mallett, Turrisi, & White, 2014; Moore, Williams, Moore, & Murphy, 2013; Page & O'Hegarty, 2006; Young & Mayson, 2010). The widespread use of quantitative methods in the literature review in Chapter 2 demonstrates the importance of this type of data collection and analysis to quantifying the magnitude of the issue. Therefore, there was substantial value in including quantitative methods

in this study. However, Johnson and Onwuegbuzie (2004) state that research in a domain dominated by any one type of method, in this case that dominant method is quantitative, can be better informed by using multiple methods. The literature reviewed in Chapter 2 clearly shows the value of capturing the first-person experience of the participants through qualitative data collection and analysis (de Visser et al., 2015, Sandelowski, 2000).

The nature of the research questions for this study was the driving force for the methods design in a process described by Onwuegbuzie and Leech (2006) who state that mixed methods are best utilized when the research questions can most effectively be answered outside of the qualitative versus quantitative paradigm while being grounded in a pragmatic philosophy. This study looks to leverage the inherent generalizability of the results from quantitative methods while accessing the ability of qualitative methods to describe the experiences of the participants (Creswell et al., 2011; Johnson et al., 2007). This study employed quantitative methods deductively to provide measurable evidence and demonstrate relationships between variables while employing qualitative methods, specifically qualitative description, inductively to provide first person voice to individual context of the participants related to the results from the quantitative data (Creswell et al., 2011).

The reviewed literature in Chapter 2 on methodology shows that there are strengths to using mixed methods approaches in collecting and analyzing data when it is related to students and alcohol consumption. That was an important consideration in the development of the research design for this study.

Participants and Recruitment

Potential participants for this research consisted of any first year Dalhousie University student living in residence for the first time at the time of the distribution of the anonymous

online questionnaire. There are no other inclusion or exclusion criteria. This study was limited to Dalhousie University due to the partnership with the Dalhousie University Department of Student Affairs. This approach to participants selection criteria represents a purposive sampling of the population as described by Teddlie and Yu (2007). For this project, purposive sampling means establishing a non-probability sampling of the targeted population. The targeted population is first-year students moving into residence direct from highschool and the invitation to participate was sent to all possible participants, not a subsection of the targeted population. This sampling method was employed by this study because of its ability to provide important and detailed information about a specific population as identified by the research questions. However, as Teddlie and Yu (2007) demonstrate, the use of purposive sampling limits the generalizability of the results to only other contexts sharing the same specific qualities.

The invitation to participate in the study was emailed directly to every student living in residence who met the criteria at the time of the distribution of the anonymous online questionnaire. This direct contact was facilitated by the Dalhousie University Department of Residence Life (a division of Dalhousie University's Department of Student Affairs). The recruitment email is attached as Appendix A. This email was sent at two different times with two weeks separating the invitations to participate in September 2017 and then again in October 2017. It is important to recognize the academic timetable of university students when inviting them to participate in a study. The study chose September 2017 to October 2017 to avoid midterm season commonly associated with November while also avoiding final exams in December. This time period was close enough to the beginning of the year to make it easier for students to recall their expectations prior to moving into residence but also to give them adequate time to identify their consumption patterns while living in residence. The Department of

Residence Life distributed the recruitment email directly utilizing a listserv mailing list, the lead researcher will never possess any of the potential participants personal student email addresses. Appendix B is a Letter of Support from Dr. Arig al Shaibah, Vice-Provost Student Affairs Dalhousie University and senior official responsible for Dalhousie University Residence Life.

G*Power software was used to calculate the number of students required to participate in the study to achieve the desired power of .80; this number was calculated to be 271 participants based on a full Dalhousie University residence population of 2348 students. The calculation was completed using the power analysis for correlation function a priori to calculate sample size. The calculation was Bonferroni corrected at .05/6 to account for multiple tests. A conservative effect size of .2 was used for this calculation. All participants will be asked both the quantitative questions and the qualitative questions. In turn, all qualitative results will be read, coded, and analyzed.

Setting

All qualitative and quantitative data were collected through an online anonymous questionnaire by clicking on a URL link sent to each potential participant in their personal Dalhousie University student email. Thus, the data were collected in a setting in which the participants deemed appropriate or comfortable enough for them to complete the questionnaire. The data were collected this way to ensure the anonymity of the potential participants and the maximization of the potential participant response rate.

The email included a link to the anonymous online questionnaire, which was prefaced by the informed consent information and an electronic version of the consent form where participants will indicate they consent (or not) before clicking 'next.' Following the informed

consent page (if consent is given), participants were asked to complete the questionnaire, which is described below.

Data Collection

Quantitative and qualitative data were collected using an online anonymous questionnaire. The questionnaire is attached as Appendix C. The questionnaire has eight quantitative close-ended questions collecting data to answer the four quantitative research questions. The questionnaire also asks three demographic questions inviting the participants to disclose their month and year of birth, whether they were of legal age to consume alcohol in their home location prior to moving into residence, and their sex and/or gender identity to analyze any moderation effects that these factors may have on the results. The answer scale to the quantitative questions utilized in this questionnaire was taken from the Alcohol Use Disorders Identification Test (AUDIT) authored by Babor, Higgins-Biddle, Saunders and Monteiro (2001) developed with support from the World Health Organization (WHO). The AUDIT scale was chosen because of its high quality due to the large number of studies testing it for validity, reliability, and cultural awareness (Babor, Higgins-Biddle, Saunders, & Monteiro, 2001). The AUDIT scale has also demonstrated a high sensitivity and specificity (Babor et al., 2001).

The questionnaire also had three qualitative open-ended questions collecting data to answer the two qualitative research questions. These questions were designed to elicit responses that will provide a more detailed, contextual understanding of the phenomenon (Creswell et al., 2011) of harmful alcohol consumption in residence and the potential link those behaviours have with a student's expectation of alcohol consumption prior to moving into residence. The completion of the questionnaire took no longer than 15 minutes.

Data Analysis

Quantitative and qualitative data were collected simultaneously in one online questionnaire. This method was employed to help eliminate the attrition that is typical in longitudinal research with students as the target audience (Barnett et al., 2014; Boekeloo et al., 2009; Cleveland et al., 2014; Moore et al., 2013; Page & O'Hegarty, 2006).

The quantitative data were analyzed using the Kendall's Tau method for non-parametric data (Bradley et al., 1998; Drake, Osher, & Wallach, 1989). The AUDIT scale was utilized in this study to collect data in the form of rank-ordered dichotomous variables and the reviewed literature analyzed this data using Kendall's Tau to test correlation (Bradley et al., 1998; Drake et al., 1989). Kendall's Tau was calculated to answer the four quantitative questions as follows:

Question 1: Is there a correlation between a student's expectation of personal alcohol consumption and their reported actual consumption rate while living in residence?

Question 2: Is there a correlation between a student's expectation of alcohol consumption among their peers and the student's perception of their peers' actual consumption rate while living in residence?

Question 3: Is there a correlation between a student's expectation of their personal alcohol consumption and the expectation of alcohol consumption of their peers?

Question 4: Is there a correlation between a student's report of their actual personal alcohol consumption and their perception of actual alcohol consumption of their peers?

Specifically, the main effects that the quantitative data tested statistically for include the correlation between self-expectation of consumption and self-actual consumption, the correlation between the expectation of peers' consumption and the perception of peers' consumption, the correlation between self-expectation and the expectation of peers, and the correlation between self-actual and the perception of peers' actual consumption. Globally, the used an alpha value of

0.05. To assess the significance of each correlation, this alpha value will be divided by 6, (0.00833) to reduce the increased rate of type 1 error associated with calculating correlation numerous times.

Qualitative data were analyzed using qualitative description as outlined by Colorafi and Evans (2016), Sandelowski (2000), and Chi (1997). Literature examining a university student's expectations of alcohol consumption are limited and dated (Reis & Riley, 2000; Wood, Nagoshi, & Dennis, 1992). This study followed the methods for conventional content analysis as outlined by Colorafi and Evans (2016). First, data were collected from open-ended questions, then the responses were read word for word, and then those responses were coded using content analysis. The codebook was developed in an iterative process as the content was read and analyzed. This iterative process was completed by the primary researcher with feedback from the supervisory committee. The steps for coding, analysis, and interpretation of the qualitative data closely followed the method described by Chi (1997). Those steps are as follows:

1. Developing a coding scheme

2. Mapping

3. Depicting the mapping

4. Seeking patterns

5. Interpreting patterns

6. Repeat   (Chi, 1997)

All responses were analyzed in full without reducing or segmenting the sample (which includes establishing a set of criteria to select from or eliminate participants from the sample to minimize the responses that require qualitative analysis). The coding scheme was developed through an iterative process as described above and then all participant responses were mapped to the

developed scheme. The mapping process included reading all participants responses and labelling them with a primary code from the established code book and a secondary code if present. This study used a method of qualitative content analysis described by Sandelowski (2000) to depict the mapping, seek, and interpret patterns in the data. Once the coding was completed the codes were counted to provide a foundation for the identification of the patterns elicited in the data collected. The process of counting the codes was utilized to discover and confirm patterns in the qualitative results (Sandelowski, 2000). The qualitative responses of the participants in this study were short and without much detail. Qualitative description does not require a high level of inference from the researcher and is an efficient method to use in situations where responses are shallow while still providing an important analysis of the results. After the codes were counted they were arranged and summarized in major categories that reflected the major themes among the elicited information providing a comprehensive description of the responses in a way that best fits the data as it was presented by the participants (Sandelowski, 2000).

The online, anonymous questionnaire was created using Opinio. All response data were stored on Opinio and password protected. The quantitative data were directly uploaded from Opinio to SPSS and analyzed. These data are saved in an encrypted file and stored on a password-protected USB drive. Likewise, the qualitative data were directly uploaded from Opinio to NVivo for analysis. The qualitative data were saved in an encrypted file and stored on a password protected USB drive.

Ethical Considerations

Ethics approval for this study was obtained from the Dalhousie University Health Sciences Research Ethics Board (REB) prior to the recruitment of any potential participants and

the collection and subsequent analysis of any data. All potential participants were required to give free and informed consent before completing the online, anonymous questionnaire. The informed consent page is attached as Appendix D. The primary researcher completed the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans (TCPS 2) Course on Research Ethics (CORE) online tutorial prior to the start of this study. Consent was obtained through the online anonymous questionnaire by continuing beyond the informed consent page and choosing to complete the entire questionnaire. At any point if the potential participant closed the questionnaire and choose not to continue, this indicated the participant's choice to withdraw. No data from incomplete questionnaires were included in the analysis.

The primary concern when considering potential risk to participants associated to participating in the study is a concern for autonomy due a conflict of interest with the primary researcher. This conflict of interest is due to the multiple roles and relationships that the primary researcher has with the potential participants. The primary researcher is a Residence Life Manager at Dalhousie University and is employed by the partner organization, Dalhousie University Department of Residence Life (a division of Dalhousie University Student Affairs). As such, the primary researcher is the employer of student staff members who are potential participants, a support person and care provider for students living in residence who are also potential participants, and the administrator of a student conduct system of violations to the Dalhousie University Residence Code of Conduct that potential participants are required to abide by as a condition of living in residence. This conflict of interest was managed by identifying the multiple roles and relationships that the primary researcher has with the potential participants immediately during the recruitment process and again during the informed consent process. Participation was strictly voluntary and anonymous and will therefore not pose undue influence

on the participants. Participation in this research had no effect on the residence application and placement processes, students' academic success, or the residence student conduct process.

As previously stated, participation in this online study was anonymous. At no point during this research project were identifying information (including computer IP addresses) collected or shared. All data were stored securely either on a private password-protected Opinio survey account or a private password-protected USB drive on a password-protected computer owned by the primary researcher. This process assisted in minimizing the actual or perceived effect of the conflict of interest as well as protecting the vulnerable status of the students who participated.

This study also considered the concern for welfare of the participants. It is possible that participants in the study may have disclosed illegal activity (underage alcohol consumption) or incidents that constitute a violation to the Residence Code of Conduct. Thus, students who participated were in a vulnerable relationship with the researcher. However, responses were anonymous with no identifying information being collected at any point throughout this study so no follow-up or reporting was possible.

This study had minimal risk in that the risk experienced by the participants did not exceed the risk inherent in their daily life and did not increase their vulnerability. An indirect benefit from participating in this study is the sharing of results to the general student population, which includes the anonymous participants. The results of this study can be used to inform decision-making processes regarding harmful alcohol consumption which may reduce the negative consequences related to those decisions. The potential development of new programs and services offered to students in response to the results of this study and the planned KTE with Dalhousie University Administration is an indirect benefit to the potential participants.

Generally, the results will be part of an advancement of knowledge regarding university student harmful alcohol consumption.

Researcher Details

The primary researcher was responsible for all aspects of this study. This study identified two specific areas a priori where the supervisory committee was relied upon, which are the development of the qualitative questions on the questionnaire, and the iterative process of creating a codebook for qualitative data analysis. The iterative process was facilitated through weekly meetings with supervisory committee members during the qualitative analysis process.

The primary researcher is a Master of Arts in Health Promotion candidate. Previous academic accomplishments include a Bachelor of Arts with a major in Psychology, a Bachelor of Social Work and the designation as a Social Work Candidate by the Nova Scotia College of Social Workers. The primary researcher is also a Residence Life Manager with seven years of experience living and working in the residence environment as both a student and professional staff member of Dalhousie University Department of Residence Life. Given this professional role, it is possible that the primary researcher has, or will have at some time in the future, a relationship with the potential participants, indicating a conflict of interest. However, as mentioned in the ethics section above, complete anonymity of the online questionnaire will protect participants of this study as their personal identifying information will never be known or be connected to the data. It is important to recognize that the results of this study could have a direct result on the professional role of the primary researcher. As a Residence Life Manager, the primary researcher interacts with students about alcohol consumption daily. Any results that create an evidence base supporting new approaches or reinforcing old approaches will have a significant impact on this professional relationship. Therefore, the primary researcher must

remain reflexive to not influence the results to match personal preferences or support stronger employment opportunities.

It must be stated that the primary researcher's experience in Residence Life is also an asset. This lived experience, including countless hours spent responding to crises related to alcohol consumption, speaking with students about alcohol consumption and the challenges they face as a result, and implementing alcohol harm reduction interventions (including social norm campaigns) in the residence environment, has provided the primary researcher with an informed position to design and analyze the results of this study. As a Dalhousie University employee, the primary researcher had access to resources and support during this project that may not have been available to other researchers without this same relationship. While it posed a challenge during recruitment due to an apparent conflict of interested, it also provided significant guidance during the creation of and successful completion of this study.

Dissemination Strategies

In consultation with Dalhousie University, the findings of this thesis document will be presented at a variety of meetings with on campus stakeholders. The results will also be submitted to the Canadian Public Health Association (CPHA) Conference, The American College Health Association (ACHA) Conference and the Association of College and University Housing Officers International (ACUHO-I) Conference to disseminate results both nationally and internationally. The key findings from this study will be submitted for publication to the Journal of American College Health (the only scholarly publication completely dedicated to student health) due to the potential impact of the results on university administrations and the decision making of alcohol harm reduction initiatives led by student health professionals.

The findings will be reported back to all students living in residence through an infographic emailed to all students living in residence and shared around Dalhousie University through community posters on public access bulletin boards to reach broader student and administrative audiences. Due to complete anonymity, the results cannot be reported back to the participants. Findings will also be disseminated to Dalhousie University administration through planned KTE focus groups with the intention of designing and implementing new programs and services addressing the results. Some potential long-term outcomes include the development of online modules for incoming Dalhousie University students, the redevelopment of orientation week events and activities, and the establishment of guiding principles for the training of current and incoming professional and student staff in residence. The outcomes of the KTE initiatives with university administration could be analyzed in a future study.

Summary

This study was designed and carried out using a pragmatic worldview. The research questions dictated the use of mixed methods to answer them in the most effective way, while recognizing a diversity of realities and sources of knowledge that can be attained inductively, deductively, and abductively. Potential participants were invited to participate through purposive sampling due to the specific nature and setting of the targeted population in the research questions. Quantitative and qualitative data were collected using an anonymous, online questionnaire and analyzed using well-documented methods. Although the survey was anonymous, strict adherence to ethical practices remained important considering the positionality of the primary researcher and the rendered vulnerability of the students who participated. This study was approved by the Dalhousie University Health Sciences REB. Results will be disseminated through national and international conferences and publications. The results will

also be shared informally with Dalhousie University students at large with a targeted infographic distributed through email and posters and with Dalhousie University administration through planned KTE focus groups. Harmful alcohol consumption among university students is a significant concern. Research projects like this add to the field of research and build on the momentum required for a significant breakthrough in the relationship between student affairs professionals and the students they are dedicated to serving.

Chapter 4 – Results

In total, 180 participants completed the questionnaire. An additional 100 people began the questionnaire but did not complete it. These incomplete results were deleted and were not part of the analysis as per the project design that was accepted by the Dalhousie Health Sciences Research Ethics Board. The total number of participants, 180, is lower than the estimated amount required to achieve statistical power calculated in G*Power, 271. However, that estimation was based on the total student population in Dalhousie Residences, which at the time of the distribution of the questionnaire was 2348 students. However, the recruitment efforts of this study focused on students entering residence direct from highschool which narrowed the participant pool down to 1249 potential participants who received a direct invitation to participate in the study. Therefore, the 180 participants represent 14.41% of the total population that was invited to voluntarily participate in the study.

Of the 180 participants who completed the study, 63.9% identified as female, while 32.2% identified as male, and the remaining 4% identified as transgender, preferred not to disclose, or chose to enter their own sex and/or gender identity if it was not represented by one of the previous options.

Table 1 shows the breakdown of participants based on their self-selected sex and/or gender identity.

Table 1   Self-reported sex and/or gender of the participants

	Female	Male	Transgender	Other	Prefer not to disclose
Percent	63.9	32.2	1.1	2.2	0.6

A post hoc Chi Square test was done to analyze if there were any significant differences in responses between the identified sex and/or gender identity of the participants, to the questions asking for a measurement of self-expectation, peer-expectation, self-actual and peer-actual but no differences were found. Participants were able to select transgender, indicate that they did not want to identify their gender, or select another gender identity which they then could enter themselves. It is important to note that there were participants who chose all these options, but the total number who selected trans, other, or prefer not to disclose was too few to perform any meaningful statistical analysis. The Chi Square test was done to see if there were any differences in responses to the quantitative question about frequency of alcohol consumption between themselves and their peers based on their selected sex and/or gender identity. The alpha value for the chi-square test was Bonferroni corrected to be .05/4 or .0125 to account for the calculation of multiple tests and the increased risk for a type-1 error. There were no significant differences in response based on the self-reported sex of the participants. The results of the chi-square test are as follows: for quantitative question 1 (self – expectations) the p-value is 8.186 and the alpha-value is .085, for question 3 (peers – expectations) the p-value is 5.664 and the alpha-value is .226, for question 7 (self – actual) the p-value is 12.195 and the alpha-value is .016, and for question 10 (peers – actual) the p-value is 1.934 and the alpha-value is .748. As you can see from the results of the chi-square test the responses to question 7 (self – actual) approach significance. A further analysis of the responses to this question using the crosstab shows that more male participants indicated that they were consuming alcohol 2 to 3 times per week while more female participants indicated that they were consuming alcohol 2-4 times per month which

may account for a relationship approaching significance. The full crosstab for this question can be found in Appendix E.

Quantitative analysis was conducted using SPSS. Specifically, Kendall's tau-b was used to calculate correlations between expected rates of consumption for self and peers to actual rates of consumption for self and perceived rates of consumption for peers. Initial calculations were completed on the quantitative survey questions focusing on the frequency of alcohol consumption, questions #1, #3, #7, and #10. This was done to limit the number of tests completed and reduce the chance of type 1 error and in total six tests were completed. It is important to state that these six tests were completed intentionally to identify the primary relationships between expectations of self and others and actual rates of consumption of self and perceived rates of consumption by others to support the hypothesis.

In order to complete the correlation tests using Kendall's tau-b in SPSS as designed the raw data needed to be converted to values that could be used in the calculation. The answer "never" was converted to a score of 0, the answer "monthly or less" was converted to a score of 1, the answer "2 to 4 times per month" was converted to a score of 2, the answer "2 to 3 times per week" was converted to a score of 3, and the answer "4 or more times per week" was converted to a score of 4. After being converted, the participants scores were a non-parametric, ordinal variable.

Table 2 shows the results of the Kendall's tau-b calculations for the quantitative questions focused on the frequency of alcohol consumption.

Table 2   Kendall's Tau Correlation - Frequency

	Self - Expected Frequency	Others - Expected Frequency	Self - Actual Frequency	Others - Perceived Frequency
Self - Expected Frequency	1	.502**	.560**	.233**
Others - Expected Frequency	.502**	1	.300**	.375**
Self - Actual Frequency	.560**	.300**	1	.403**
Others - Perceived Frequency	.233**	.375**	.403**	1

** Correlation is significant at the .001 level (2-tailed)

A Kendall's tau-b correlation was run to determine the relationship between the expected frequency of alcohol consumption for self and the expected frequency of alcohol consumption for others. There was a strong, positive correlation between expected frequency for self and expected frequency for others, which was statistically significant (f_b = .502, p < .001, N = 180). This correlation indicates that students who had higher expectations that their peers would drink more often also thought they would drink more often themselves.

There was also a strong, positive correlation between expected frequency for self and actual frequency for self, which was statistically significant (f_b = .560, p < .001, N = 180). In other words, if students expected they would be consuming alcohol more often, this expectation was borne out in actuality.

There was a strong, positive correlation between expected frequency for self and perceived frequency for others, which was statistically significant (f_b = .233, p < .001, N = 180). In other words, if students expected they would be consuming alcohol more often they would perceive their peers consuming alcohol more often when living in residence.

There was a strong, positive correlation between expected frequency for others and actual frequency for self, which was statistically significant (f_b = .300, p < .001, N = 180). In other words, if students expected their peers to be consuming alcohol more often, they would drink more often themselves when living in residence.

There was a strong, positive correlation between expected frequency for others and perceived frequency for others, which was statistically significant (f_b = .375, p < .001, N = 180). In other words, if students expected their peers to be consuming alcohol more often, they would perceive them as actually consuming alcohol more often when they lived in residence.

There was a strong, positive correlation between actual frequency for self and perceived frequency for others, which was statistically significant (f_b = .403, p < .001, N = 180). In other words, if students are actually consuming alcohol often when living in residence, they will perceive their peers as consuming alcohol often too.

The power of each correlation was calculated post hoc using G*Power computing software. The power for each correlation was calculated using an alpha of .008, the sample size of 180, the calculated effect size from Table 1 above, and indicating that it was a two-tailed calculation. All correlations achieved significant power. The achieved power for the correlation between the expected frequency of alcohol consumption for self and the perceived frequency of alcohol consumption for others was .702, however the achieved power for all other correlations was above .900.

This statistical power was achieved despite the surveyed population, 180, being lower than the a priori estimated population required to achieve power (271). The sample population size estimation to achieve statistical power was calculated using a conservative effect size of .2 to establish a baseline that would provide the highest success rate of the statistical analysis. Although only 180 students participated in the study, the effect size of each correlation was greater than .2 and the calculated power of each correlation was higher than .702. Table 3 shows the frequency of responses for each quantitative question that was used for analysis.

Table 3   Frequency of Responses

Expected Frequency - Self

Response		0	1	2	3	4
Frequency		27	20	57	68	8
Percent		15.0	11.1	31.7	37.8	4.4

Expected Frequency - Self
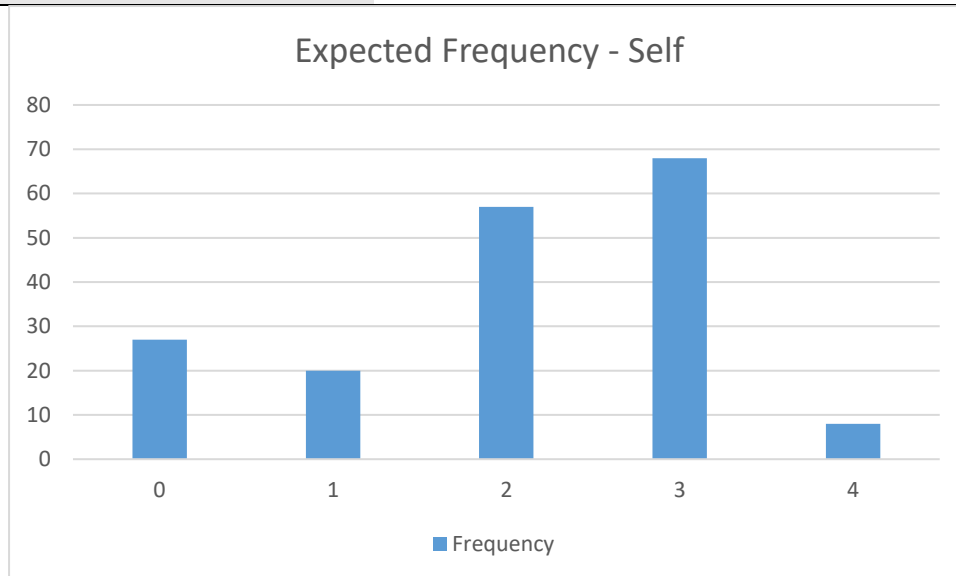
Expected Frequency –

Others

Response	0	1	2	3	4
Frequency	3	4	39	106	28
Percent	1.7	2.2	21.7	58.9	15.6
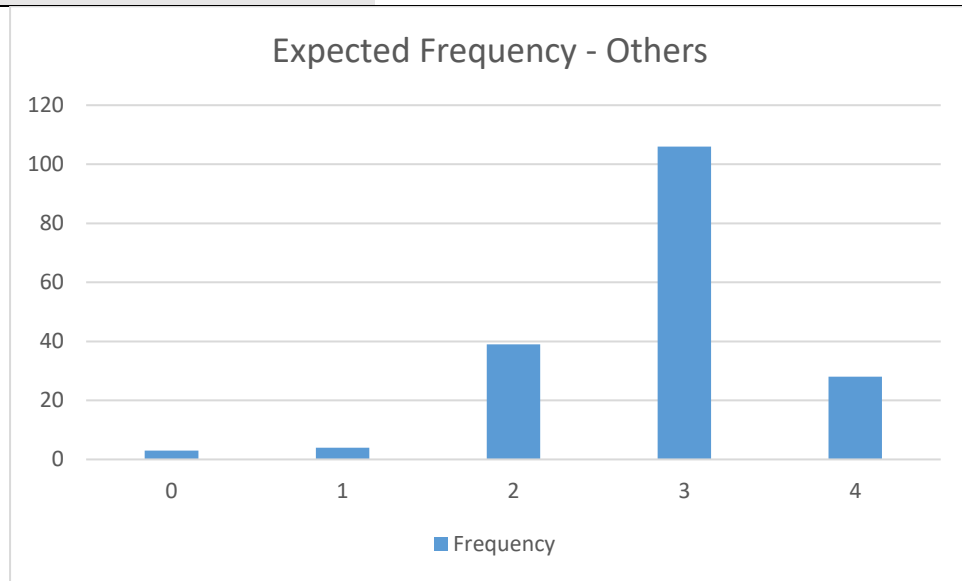
Actual Frequency - Self

Response	0	1	2	3	4
Frequency	29	26	67	54	4
Percent	16.1	14.4	37.2	30.0	2.2

Actual Frequency - Self
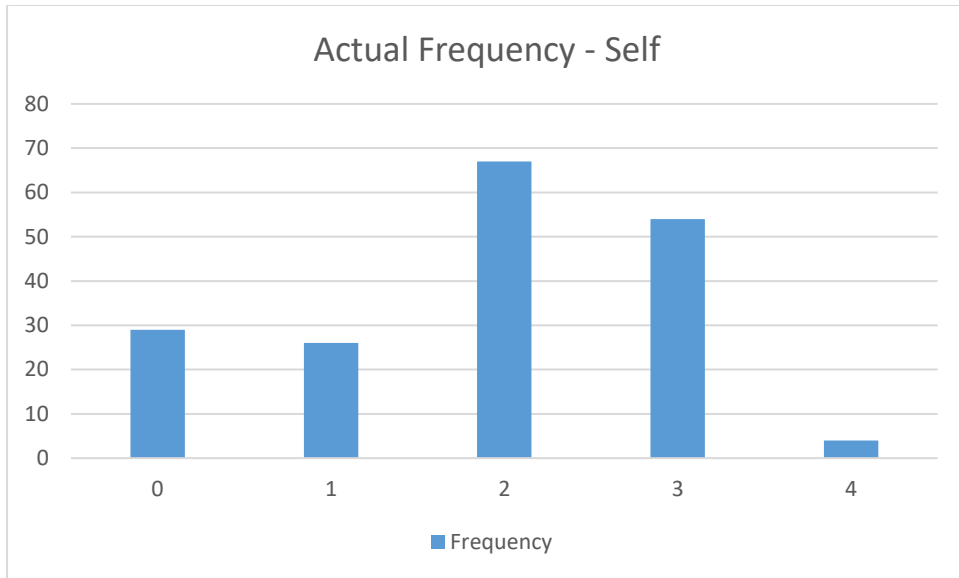
Perceived Frequency -

Others

Response		0	1	2	3	4
Frequency		6	10	38	103	23
Percent		3.3	5.6	21.1	57.2	12.8

Perceived Frequency - Others
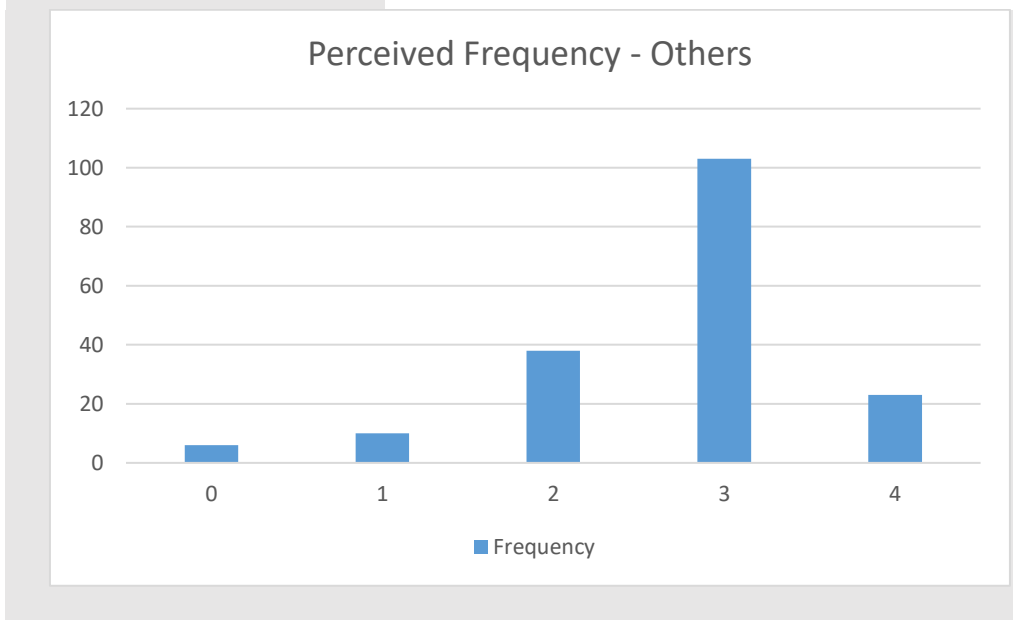
For both questions where participants were asked to describe the relationship their peers had with alcohol, majority of the responses were 3 or 4 (74.5% for expected frequency of others, 70.0% for perceived frequency of others) indicating that participants both expected and perceived their peers to consume alcohol 2 to 3 times per week or 4 or more times per week. While at the same time, participant responses regarding their own consumption were spread out more across the spectrum of possible responses. This is an important observation because the literature review indicated that students are likely to measure their consumption against their peers to create norms and to justify harmful alcohol consumption behaviours.

Table 4 shows the differential of responses between expected rates and actual or perceived rates.

Table 4   Differential of Responses

Self

Response	-4	-3	-2	-1	0	1	2	3	4
Frequency	2	3	5	38	109	15	6	2	0
Percent	1.1	1.7	2.8	21.1	60.6	8.3	3.3	1.1	0.0

Differential of Responses - Self
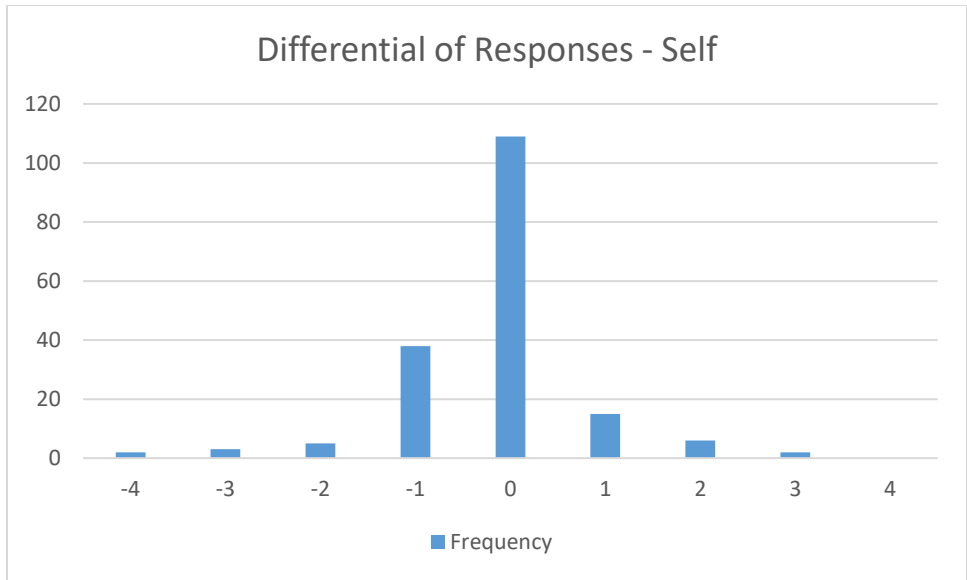
Others

Response	-4	-3	-2	-1	0	1	2	3	4
Frequency	2	3	4	34	109	24	3	0	1
Percent	1.1	1.7	2.2	18.9	60.6	13.3	1.7	0.0	0.6

Differential of Responses - Others
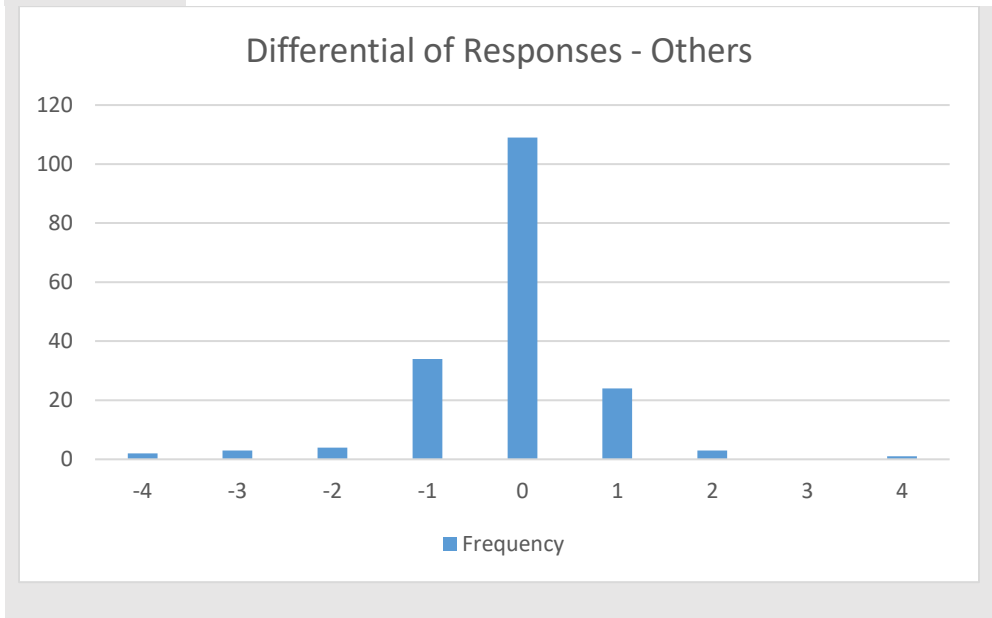
In both measurements, responses for self and responses for peers, the largest portion of participants responses did not change when rating their expectation of alcohol consumption for self and peers and their actual rate of consumption for self and the perceived rate of consumption of others (109 responses, 60.6% for self and 109 responses, 60.6% for peers). This indicates that 109 responses did not change showing that actual and perceived rates of consumption were the exact same as what the participant had expected. The next highest differential portion were the plus one or minus one category for both self and peers, indicating that participants rated their actual rates of consumption for self and/or the perceived rates of consumption in peers as one category higher or lower than they expected. Together the no change, plus one, and minus one differential categories make up 90% of total responses for self and 92.8% of total responses for peers.

Table 5 shows the participants' year of birth and whether they were the legal age to consume alcohol in their place of residence before moving into a Dalhousie University residence building.

Table 5   Year of Birth and Legal Age to Consume Alcohol

Year of
Birth

Response	1996	1997	1998	1999	2000	Invalid Responses
Frequency	2	7	32	124	1	14
Percent	1.1	3.9	17.8	68.9	0.6	7.8

Legal Age to Consume Alcohol in their place of residence before moving

Response	yes	no
Frequency	40	140
Percent	22.2	77.8

The majority of participants indicated that they were born in 1999 or later (69.5%) which means that at the time of the survey (October and November 2017) they would not have been the legal age to consume alcohol in Nova Scotia while living in residence, which is 19 years old. As well, 32 additional participants (17.8%) indicated that they were born in 1998 and based on the month of their birth would also not have been the legal age to consume alcohol in Nova Scotia. In total, this shows that a maximum of 87.3% of the participant population would not have been the legal age to consume alcohol in Nova Scotia at the time that they filled out the survey. This is consistent with the number of people who indicated they were also not the legal age to consume alcohol in the place of residence prior to moving to Dalhousie (77.8%). Differences between these numbers can be accounted for by the passage of time (more people could have turned 19 during the months that they have lived in residence at Dalhousie) or different ages for legal consumption in different provinces of Canada and around the world. Invalid responses were often an inappropriate date (like the year 1111 or 9999 as two examples).

The qualitative data were analyzed using an iterative approach as described in Chapter 3 in keeping with the qualitative data analysis literature as cited by Chi (1997), Colorafi & Evans (2016), and Sandelowski (2000). First, the author thoroughly read all the participants' responses to understand their breadth and diversity of topics. Next, the author re-read all the participants' responses while noting commonalities and repeated words to begin the identification of themes and the creation of codes for the code book. Then, the author focused on these noted emergent

themes to finalize the code book using both main and sub codes to specifically identify the links between the participants' individual responses. It was decided that the responses to questions 5 (When considering your answers to the above questions, what influences were those expectations based on?) and 6 (When considering your answer to question 5, who or what were the sources of that influence?) on the questionnaire should be grouped separately from the responses to question 9 (Now that you are living in residence what influences you to consume alcohol?) on the questionnaire and analyzed using separate codes. This was done to ensure that the difference between the participants' responses to those questions could be accurately analyzed. Questions 5 and 6 elicited responses from participants that were too dissimilar from the answers to question 9 so it was not possible to use one overarching set of codes. The completed code books were divided into main and sub codes for responses to questions 5 and 6 and main codes for responses to question 9. Once the code book was complete, the author read through all the participants' responses and each response was labelled with a primary code. Secondary codes were attributed to responses if the participant clearly spoke about two or more codes in their response. Finally, the author re-read all participants' responses to ensure that the proper primary and secondary codes were attributed to each individual response in keeping with the analysis techniques used by Sandelowski (2000) and Chi (1997).

The participants' responses to the qualitative questions 5 and 6 on the survey illuminate the origins of the students' expectations for alcohol consumption. There are four codes that are present in the participants responses far more than any of the others; they are "Media" (n=35), "Rumours about university alcohol culture" (n=35), "Older friends already in university" (n=34) responses, and "Personal experience" (n=26). Combined these codes were identified 135 times. The other six codes were identified a combined total of 37 times and breakdown as follows;

"Personal preference" (n=12), "Experiences of family" (n=11), "Alcohol culture in high school" (n=6), "Dalhousie" (n=4), "Residence" (n=2), and "Peer Pressure" (n=2).

Generally, this equal spread of responses among the most identified qualitative codes tells us that there is no one major force influencing the origins of all students' expectations for alcohol consumption when they move into residence. Though the total number of different codes indicating the expectations of the participants is few. Therefore, it can be argued that this narrow distribution of responses indicating influences on their expectations among all of the participants shows that all participants, whether they expect to drink a lot or a little, frequently or infrequently, are influenced by the same factors when forming their expectations.

Of these codes, three are related to external factors and observations of the participant ("Media", "Older friends already in university", and "Rumours about university alcohol culture") while only one is internal to the participant ("Personal experience"). The following quotations demonstrate the influence of external factors in the formation of alcohol consumption expectations among the participants. Specifically, about the media, participants said: "tv shows", "social media", "media", "snapchats of people in university" were all influences on their expectations. Specifically, about rumours of alcohol culture at university, participants said: "I expected many people to be drinking heavily to make up for their lack of drinking during high school", "In high school, it was often stressed that university students partied and consumed lots of alcohol often", "The typical idea of drinking in university is that it's always a party and people are always drinking". Lastly, about older friends already in university acting as an influence, the participants said "friends who had already gone away to university the year before I did", "Friends going to university and hearing past experiences", and "friends that I know who are in upper years at university" played a significant role in shaping their expectations. This indicates

that some participants' expectations of alcohol consumption are influenced by the actions of others and the information that is passed on to them from sources they put value in.

Recognizing that one's personal experiences would play a factor in influencing one's expectations for the future makes intuitive sense and it is important to recognize that the participants displayed this in their responses when indicating what the source of their expectations were. The following quotations demonstrate the influence of internal factors in the formation of alcohol consumption expectations among the participants. They indicated that their personal experiences played a role in shaping their expectations in the following ways: "my own experience drinking", "I knew that I would be drinking in residence the same as I did at home, only on weekends and sometimes on Thursdays", "past experiences", and "based upon how much I normally drank before moving into residence and how much I usually drank/how much I would typically see my peers drinking". This indicates that some participants' expectations of alcohol consumption are influenced by their own current and past experiences with alcohol.

These qualitative results indicate that there are multiple sources influencing the participants' expectations of alcohol consumption, including the media, stories from older friends, rumours about university alcohol culture, and personal experiences. Previously, the quantitative results indicated that the participants' expectations were significantly related to their actual reported consumption levels in residence. This makes the identification of these sources of influences important. It's possible that disrupting an incoming student's problematic expectations of risky alcohol consumption prior to or on arrival in residence could make a significant change to their ongoing behaviour in residence.

The qualitative responses to question 9 characterize the factors that influence the participants when making the choice whether to consume alcohol or not while living in

residence. The most identified code in the responses related to their "Peers" (n=46). Participants would refer to the fact that their friends and neighbours were already consuming alcohol, "My main circle of friends drink on weekends and sometimes I feel like participating", or that they feel its what everyone was doing, "everybody does it". Some participants would specifically name peer pressure as their main influence to consume alcohol in residence simply stating, "peer pressure". While others would reduce their main influence to a straightforward response of "friends".

Following "Peer Pressure" there are four codes identified by many of the participants as having an influence on their decisions to consume alcohol in residence. They are "Socialize" (n=30), "Personal Choice" (n=27), "Stress" (n=26), and "Organized Events and Activities" (n=22). Combined with "Peers" these five codes were identified 151 times. The responses to question 9 asking about influences to consume alcohol while living in residence were similar to the responses to questions 5 and 6 asking about the formation of expectations, in so far as the responses to question 9 display an interesting juxtaposition between external and internal factors influencing the decision making of the participant. The "Peers" code, the "Socialize" code, and the 'Organized Events and Activities" code all demonstrate a want or a need of the participant to relate to others and they then make their choice to drink seemingly based on the decisions and actions of others. The following quotations demonstrate their decision process in their own words; "lots of people are always asking me to drink with them", "social expectations", "to have fun while people are partying", "people chug'em back on a Monday and expect everyone to do the same", "I want to have fun and meet new people and drinking is the easiest way to do that", and potentially the most straight forward response illuminating the point "if others invite me to a party and they are drinking, so will I". Alternatively, there are those participants who believe

they are devoid of external influences and make the choice to consume alcohol completely of their internal decision making. The following quotations demonstrate their decision process in their own words; "nothing really influences me", "I do not feel influenced to consume alcohol", "nothing, I do it every now and then for fun", and "nothing, I do it when I want to". While others feel compelled to drink as a response to stress and the following quotations demonstrate their decision process in their own words; "too much work, need to take the edge off", "stress", "the stress of university life", and "stressful weeks mostly".

The remaining eight codes were identified a combined total of 56 times and breakdown as follows; "Non-drinker" (n=17), "Fun" (n=14), "Academic Commitments" (n=10), "Community Norms" (n=9), "Physiological Feeling" (n=2), "Residence Staff" (n=2), "Availability of Alcohol" (n=2), and "Financial Cost" (n=1).

It is important to highlight that the responses of the participants as to why they are choosing to drink in residence does not specifically identify that they are *expected* to or that they are acting out their previously constructed expectations, despite the quantitative data showing a relationship between expectations and actual consumption behaviour. Though several participants indicated also that they believe they are making the choice to consume alcohol personally, devoid of any significant influence at all which seems incongruent with most student's perceptions of the influences identified by their direct peers whom they share a community with. All of this to state that the obvious lack of expectations reported as an influence to consume alcohol while living in residence does not disprove the relationship identified by the quantitative results. However, the responses of the participants may identify a deeper social problem affecting university students and their relationship to alcohol, namely the association between fun, socializing, and stress management, to mandatory alcohol consumption.

Equally important in this research are the students who self-identified as "non-drinkers". The motivations of these students to refrain from consuming alcohol is an important topic for future research. Some participants who identified as non-drinkers in this current study spoke about their religious or cultural backgrounds as paramount to their lack of alcohol consumption while others did not provide clear reasons. This population of non-drinkers should not go unnoticed as their experiences represent an important yet oftentimes marginalized voice.

Chapter 5 – Discussion

Understanding the results

This research was exploratory in nature given that the topic of alcohol consumption expectations and their relationship to actual alcohol consumption habits in residence is underrepresented in the health promotion research literature. As such, there are no studies available to compare the results of this study to. While the reviewed literature in Chapter 2 identifies alcohol consumption as a problem for students living in residence, this study demonstrates a possible avenue for understanding why a student decides to drink alcohol in a harmful way and the information those decisions are based upon, namely their expectations before moving into residence. This realization suggests the need to further extend the timeline for understanding university alcohol problems. Specifically, more research is needed to understand how much of the alcohol consumption problems for students is a byproduct of highschool level alcohol use assumptions made before they become university students versus how much of this can be accounted for by the alcohol culture present on many university campuses. Likewise, this study advances the conversation about social norm campaigns as a potential health promotion intervention strategy to reduce harms associated to consuming alcohol or help eliminate harmful alcohol consumption altogether.

It is important to note that there is no universally established measurement tool related to a student's expectations of alcohol consumption before moving into residence with proven reliability and validity. This study attempted to replicate as much of the tested validity of the AUDIT questionnaire as possible by using their answer scale and adapting the questions to the residence context. However, this limits the generalizability and transferability of the results. Even though the achieved power and effect sizes of the correlations of this study are significant

and the voices of the participants as represented in the qualitative analysis are important, these exact results may not be replicated in future populations. Despite this, the study findings can be used as an indication that this is an important health promotion issue in need of future research.

The sample size was lower than the initial sample size calculation estimated in order to achieve statistical power. It is important to remember that the sample size estimation was calculated using the full residence population of 2348 students and a conservative effect size of .2 to create a power calculation that would have a higher chance of success. However, the survey was sent to 1249 potential participants with 180 people successfully completing it thus achieving a 14.41% response rate. Likewise, the effect size of all calculated correlations was greater than .2 accounting for successful achievement of statistical power greater than .7 on all correlations.

The interpretation of these results and the subsequent discussion about their impacts needs to be viewed with a critical lens. While it is clear that there is some relationship between expectations and actual behaviours in residence, the extent of the impact that relationship is having on harmful alcohol consumption needs to be researched further.

The study population and their environment

As reported in the results section, the analyzed data did not show any differences in responses based on the self-identified sex and/or gender of the participants. The reviewed literature in chapter 2 showed that there is a converging of alcohol consumption habits between males and females over time and that the pressures to drink in a harmful way effected people of all genders (Finlay et al., 2012). This may seem contrary to the commonly held belief about harmful alcohol consumption based on sex and/or gender identities disproportionately affecting males. A study by Myran, Hsu, Smith, and Tanuseputro (2019) analyzed alcohol related trips to the emergency room in Ontario between 2003 and 2006. Over 760,000 points of data were

analyzed and they noticed a trend that over time the rates of these trips to the emergency room (ER) were increasing at a rate of 86.5% for women and 53.2% for men (Myran et al., 2019). They concluded that, although men represented a higher overall total proportion of the ER visits related to alcohol harms the increase in ER trips among women is alarming, especially women aged 24-29 (Myran et al., 2019).

While this study did not find any statistical differences in the results between self-identified male and females, this study was merely a snapshot in time. If this study utilized a longitudinal design the results may have shown differences in response based on sex and/or gender identity or been able to identify trends in expectations and actual alcohol consumption behaviours. Future research on university students living in residence and alcohol use should consider the impact that the sex of the participants may have on gender-based expectations about harmful alcohol consumption patterns.

The study population in this case was made up of primarily underage students who were not of legal age to consume alcohol in Nova Scotia at the time of the survey and indicated that they were also not able to legally consume alcohol in their home prior to moving into residence. This creates an interesting context in which the results of this study need to be measured against. This could result in under-reporting of both their expectations and actual alcohol consumption rates when answering the questions on the survey. However, it was made clear to the participants before they completed the survey that their results would remain completely anonymous and no identifying characteristics were collected so this may have allowed the participants to feel secure in sharing true answers about their relationship with alcohol even though it was illegal at the time.

The results included in the National College Health Assessment (NCHA) Spring 2019 executive summary compiled by the American College Health Association indicate Dalhousie University students are consuming more alcohol more frequently than their Canadian university counterparts and in turn experiencing more harms associated to alcohol consumption as a result. The reasons for this observed phenomenon are unclear. However, the Nova Scotia context is important for positioning the results of this study. The Nova Scotia Department of Health and Wellness (2012) report on alcohol harms in Nova Scotia universities indicates similar observations in so far as university students, particularly university students living in residence, are consuming alcohol in a harmful way in Nova Scotia. The alcohol culture at Nova Scotia-based universities is intertwined with the alcohol culture of the province of Nova Scotia. A study by Poulin and Elliot (1997) identified significant alcohol related problems among junior and high school aged children in Nova Scotia. They argued that their results indicated a risk continuum for alcohol use among youth in Nova Scotia and that these substantial risks need to be addressed using prevention and intervention tactics not unlike those analyzed and proposed in this study (Poulin & Elliot, 1997). Dalhousie students living in residence do not live in a vacuum. They are affected not only by the alcohol culture in the residence they live in or the university they attend but also by the province that they live in. Alcohol regulations including legal age to purchase and consume, mandatory minimum pricing, and the hours of alcohol consumption establishments are all public policies established by the province of Nova Scotia. Healthy public policy is the responsibility of all levels of government and the discipline of health promotion has an important role in advocating for policy change.

Core relationships

The purpose of this research was to examine the relationship between a student's expectations of alcohol consumption prior to moving into a Dalhousie University residence and their actual rates of consumption while living in residence. Secondarily, this research also set out to study the relationship between a student's self-examination of their expectations and reality and the expectations and perceived reality of their peers as it relates to alcohol consumption in residence. These relationships were studied using quantitative methods. Then, using a series of targeted short answer questions, further qualify those relationships with qualitative details about the source and foundation of those expectations and the influences on their actual decisions to consume alcohol once living in residence.

The quantitative results show that all the studied relationships are significant and powerful. There is an identified strong, positive relationship between a student's expectations and their reality, and between a student's self-examination and their perception of their peers. The identification of a strong positive relationship between a student's expectations and their actual rates of alcohol consumption in residence is a core finding for the hypothesis of this research project. Students' expectations of how much alcohol they will drink and how often is shown to be strongly related to their choice to drink while living in residence. It is important to recognize that this relationship is true at all levels of consumption, whether you are choosing to never drink, drink every day, or drink on average somewhere in between those two options.

The literature review shows that students can have a problematic relationship with alcohol that includes increased risk of physical health issues, mental health issues, and death. Therefore, it is extremely important to further research and understand a student's complex thought process about alcohol beginning in its development to allow for appropriate interventions to be designed and implemented.

The qualitative question of this research project detail the foundations of one's expectations which have been shown to be related to their actual alcohol consumption behaviours above. The participants' qualitative responses show that there is a relationship between their expectations and the past experiences of others, whether those stories were told to them directly by someone who experienced them or observed through some type of media. It could be argued that this exposure to information about alcohol consumption, including harmful alcohol consumption, in some way normalizes the behaviour for the participant and those experiences in turn become part of their own personal expectations for when they move into residence. The participants' qualitative responses also show a significant relationship between one's own experiences with alcohol before moving into residence and their expectations for alcohol consumption after they move in. This continuation of consumption by an individual over time seems like an obvious conclusion to make. However, it is important to highlight this relationship between personal history and expectations for alcohol consumption because it can be a crucial determination for deciding as a health promoter when the best time period would be to implement an intervention. The data shows that students are moving into Dalhousie University residences with preformed expectations of alcohol consumption and then, while living in residence, consuming alcohol in a way that has been demonstrated to be related to their expectations in a statistically significant way. Therefore, designing and implementing harmful alcohol consumption interventions for students already living in residence may be too late to change their behaviours based on their expectations and instead interventions may need to focus on harm reduction and motivating behavior change based on the creation of alcohol-alternative social norms.

Core themes

There is a core theme present in both the qualitative and quantitative data beyond just the identifiable relationships. The data collected asked the participants to compare both their expectations and their actual alcohol consumption behaviours to that of their peers. While the quantitative results show that there is a significant relationship between the measurements of self and the measurement of peers, the qualitative results show that the stories of others, the observed experiences of others, the desire to feel socially connected to peers, and the direct pressure from others to drink all play a role in shaping actual alcohol consumption decisions for participants whom are university students living in residence. Therefore, the participants' relationship to their peers is an important theme throughout this study, especially in understanding the results.

It is interesting to note that the average rating for self-expectations and self-actual alcohol consumption levels are lower than the average rating for the expectations of peers and the perceived actual levels of consumption among their peers. In other words, the participants think they are consuming less alcohol than those around them in residence. However, it is not possible (or extremely unlikely) for every participant to be consuming less alcohol than the other participants, some of these people would have been basing their answers on other participants. As such, there is a situation where most participants are expecting their peers to drink more than them and reporting that their peers are in fact consuming more alcohol than them when they are living in residence together as peers. Most participants are reporting this about each other in the exact same way. This phenomenon needs more attention. It is possible that a university student living in residence perceives their own alcohol consumption as non-problematic because they believe it to be less than those around them. This belief could then encourage them to continue consuming alcohol in the moment but also not deter them from consuming alcohol more frequently in the future.

Another facet of this theme is the divide between participants' qualitative responses indicating the influences they feel when deciding to drink alcohol while they are living in residence. Some participants answered in a way that identified themselves and their own decision making as the sole influence while others identified the influence of others on their decision making. This is an important contrast to highlight. Further, it is possible that this dichotomy is authentic, and the responses of each participant are truthful to their actual experience. It is also possible that the participants do not recognize all the potential influences that are guiding them to decide to consume alcohol or not. Though this may not be an unusual result due to the understanding that each participant's lived experience is unique to them and therefore the factors influencing their decision making would also be unique.

The identification of this theme and its characteristics is important for a couple reasons. Firstly, the reviewed literature highlighted that many universities attempt to utilize social norming campaigns to reduce or eliminate harmful alcohol consumption patterns. Social norming campaigns assume that the target audience will make the choice to consume less alcohol or consume alcohol in a way that reduces harm if they were provided with more information. Social norm interventions also try to inform the student that their social group is not consuming alcohol in a harmful way so they should not either. However, the qualitative and quantitative results of this study indicate that the participants already believe that they are consuming less alcohol than their peers, and their decision to drink in residence is related to their expectations formed before they arrive. Therefore, social norming campaigns may only show efficiency in changing behaviour in those who were already motivated to change for a previously established reason. Someone who does not see their alcohol consumption as a problem and rates the alcohol

consumption of their peers as more harmful than theirs may not be affected by a social norm intervention.

More research needs to be done to explore this theme, including the relationship between self and others when forming expectations about consumption and the decision to drink while living in residence. The results could prove to be integral in the development, implementation, and evaluation of interventions.

The benefit of mixed methods

A review of literature shows that mixed method designs have gained increased attention in health promotion in recent years (Palinkas, Mendon & Hamilton, 2019). Public health problems and issues affecting health promotion are complex therefore requiring complex solutions and demanding more complex tools to advance our understanding creating an opening for mixed methods research to excel (Palinkas, Mendon & Hamilton, 2019). A mixed methods approach was chosen for this project because of its inherent ability to ask many different types of questions and receive responses from participants that allow for a deep interpretation and a complex understanding of the studied phenomenon.

A standard definition of mixed methods research is "research in which the investigator collects and analyzes data, integrates findings, and draws inferences using both qualitative and quantitative approaches or methods in a single study" but can also include integration of qualitative and quantitative ideologies in any phase of the research project including the design, data collection, analysis, and interpretation of the results (Palinkas, Mendon & Hamilton, 2019). This project attempted to synergize mixed methods at all stages of the design, data collection, analysis and interpretation recognizing that there was a potential to observe a deeper understanding of the complex relationship between expectations and actual consumption patterns

among university students living in residence. The intention of the integration was to use qualitative and quantitative methods in combination to provide a better understanding of the research problem, harness the important role that each method provides individually and limit the inherent gaps in either method as described by Palinkas, Mendon & Hamilton, 2019. By doing so, this research was not only able to identify that there was a significant and powerful relationship between self and peers and expectations and reality when it comes to alcohol consumption among university students living in residence but also allow the participants to characterize that relationship by describing the source of their expectations, what information those expectations were based on, and what is influencing them to drink when they are living in residence. It is because of this concert of information from both qualitative and quantitative methods that this project was able to achieve its goals, fueled by a mixed methods research design.

Palinkas, Mendon and Hamilton (2019) point out that mixed methods are becoming increasingly more common in the evaluation of the process and outcomes of health care interventions, program and/or policy effectiveness, and implementation. This study is an example of how a mixed methods approach can dig deeper into a phenomenon, give participants a voice to describe their experiences, and be part of a statistical analysis. This is increasingly important to recognize because this study is not an end point. More needs to be done to increase our collective understanding of the significant role that expectations and their development may play in harmful alcohol consumption patterns that are displayed in university residence environments. The consequences of not increasing our understanding are dire as students continue to experience academic issues, injury, illness, or death as a direct result of harmful alcohol consumption. Future studies can dig deeper into those expectations and their formation.

Future researchers can design, implement, and test interventions at the university and high school level, using both unique face-to-face interventions and population level interventions alone or in concert to test their efficiency. Future research should consider the value of mixed methods and its ability to identify relationships and further characterize the phenomenon using first person voices.

The story the participants are telling

The results of this research tell a story about young people and their developing relationship with alcohol. We can see from the quantitative results that that there is a strong positive relationship between a person's expectations for alcohol consumption before they move into residence and their actual consumption rates while living in residence. This relationship is true whether you expect to drink 1 drink a month, or 7 drinks a week. Whatever your expectation is, it is likely that you will do that when you move in. This is important for a number of reasons. The literature reviewed identifies that students living in residence are likely to drink alcohol in a harmful way, including binge drinking and alcohol consumption games, at rates higher than their fellow students who are living at home. This study has shown that there is some data to support a connection between thoughts and experiences prior to arriving and actual alcohol consumption behaviours. These expectations are shaped by the stories they are told and their actual consumption behaviours are influenced directly by their relationship to their peers. If there was a way to disrupt this relationship, to adjust these expectations into expectations of consumption that reduce risk, minimize the chance for injury, illness, or death it would in turn promote health. Health Promotion as a discipline is positioned to conduct and use mixed methods research to identify and characterize the relationship between students and alcohol further. Interventions can

then be designed and implemented using that information. Then, those interventions can be evaluated to ensure their efficiency in achieving the reduction of alcohol related harms.

Dalhousie University's Responsibility

Dalhousie University students living in residence are consuming alcohol in a harmful way; as are Dalhousie University students more generally. The NCHA (Spring 2019) data shows that Dalhousie students are consuming more alcohol than their institutional peers and details the harms associated to that high-risk consumption. It is because of this over-representation of the risk burden associated to the consumption of alcohol that Dalhousie University needs to address this issue as an institution. This study illustrates only one part of the complex relationship between university students and alcohol. There is a demonstrated relationship between an incoming student's expectations for the consumption of alcohol and how much alcohol they are consuming after they move into residence. There is also a demonstrated relationship between one's own expectations and actions and the expectations and perceptions they have of the consumption of their peers.

Health promotion is uniquely positioned to aid the Dalhousie University institutional response to reducing alcohol harms. The Ottawa Charter for Health Promotion (1986) states that health promotion is "the process of enabling people to increase control over and improve their health". Hyndman (2007) points out that this definition is premised on the understanding that health is determined by social conditions and personal action and as a result, health promotion activities extend beyond disease prevention and health education to address the changes in social, institutional, community, and personal behaviours required to promote health. Health Promotion practice encompasses five action areas including building healthy public policy, creating supportive environments, strengthening community action, developing personal skills, and re-

orienting health problems (Hyndman, 2007). The issue of harmful alcohol consumption by Dalhousie University students will not be fixed by the design and implementation of a single intervention or the writing of a new policy addressing alcohol harms. With the core action areas of Health Promotion as a guide, Dalhousie University may be able to reduce harms and make significant change to the relationship between students and alcohol in and around their campuses.

Though it may not be the sole component of an effective solution on its own, building a healthy public policy around alcohol consumption to reduce the associated harms is an important step. Dalhousie University completed their comprehensive alcohol policy in June of 2017 and now endeavor to implement it across all its campuses and develop a complimentary strategy for reducing harms (Dalhousie University 2017). It is from this starting point that the institution will be able to build a roadmap to address the complexities of alcohol harms and at its base level signifies that the institution is interested in making changes.

Next, Dalhousie University can focus on creating supportive environments. In this study the focus is on university residences. As is the case for most post-secondary institutions in North America, Dalhousie University has a Department of Residence Life inside their Division of Student Affairs. It is this department (in concert with Dalhousie University Legal, Human Rights and Equity Services, the Student Advocacy Service, Student Health and Wellness, and other institutional partners) that is responsible for the creation and administration of rules and regulations about acceptable alcohol consumption behaviours inside the Dalhousie University residence environments. Those policies need to be well researched and uniquely tailored to the complexities of the current student body. Flexibility and understanding can be embedded in those policies to recognize the social determinants of each individual student's health and their ability to overcome challenges related to alcohol consumption.

The student population at Dalhousie University needs to be encouraged to strengthen their community action. The Dalhousie University Student Union can and should act as a unifying voice to address publicly the problematic relationship between Dalhousie University students and alcohol. They can build momentum towards change among the student population and encourage others to advocate for themselves. The participants in this study stated specifically that their choice to drink alcohol in residence was related to wanting to be social, searching for something to do to have fun, a response to the stress of being a student, and a reaction to being bored. The community can and should address these motivations as much as possible. They should create more events and activities where students can be engaged in a way that does not include alcohol. Those who identified themselves as non-drinkers either due to religious or cultural beliefs or a personal decision not to drink ought to be explored to ensure their needs as a student are also being addressed. Being a non-drinker can be potentially isolating in a residence community heavily involved in alcohol consumption. If these experiences are, for example, paired with the already challenging experience of being an international student, those factors combined could lead to poor academic and social success.

Dalhousie University should encourage the development of personal skills related to decision making about alcohol consumption among students, including increasing their ability to understand and reflect upon their decisions to drink alcohol, provide information about harm reduction practices, and direct their personal agency. This study shows that individuals rely heavily on their peers in several ways when thinking about both their expectations and actual alcohol consumption patterns. Creating opportunities for more dissenting voices and for those voices to be considered in the development of health promotion strategies is an important element of understanding and addressing alcohol use in residence.

As the largest post-secondary institution in Atlantic Canada, Dalhousie University has a public responsibility to be a leader in addressing alcohol use on campus. The harms associated with alcohol consumption by university students needs to be re-oriented as a significant health problem. Harmful alcohol consumption is often encouraged and celebrated among university students. Negative outcomes like injury or illness as a result of consuming alcohol are brushed aside as a normal and part of what it means to be a student. More serious outcomes like disease, addiction, and death are categorized as impossible, something that will never happen to them but maybe to others. Stories of alcohol triumphs are passed down from year to year, generation to generation, and now, shared widely on the internet through social media platforms like Instagram, Snapchat, and YouTube. At some point, the cycle will need to be broken to make any significant change to alcohol culture. This study shows that change could start by disrupting the expectations of the incoming student cohort.

Chapter 6 – Conclusion

As stated at the outset of this study, harmful alcohol consumption has negative impacts on health and is a significant public health concern in the Province of Nova Scotia (Nova Scotia Department of Health & Wellness, 2012). Dalhousie University is not absolved from this issue. Dalhousie University students consume more alcohol and experience more issues than their institutional peers (NCHA Canadian Executive Summary, 2019, NCHA Dalhousie Executive Summary, 2019). University students in general consume alcohol at a high rate resulting in academic challenges and mental and physical health problems (Barnett, Ott, & Clark, 2014; Boekeloo, Bush, & Novik, 2009; Conroy, Sparks, & Visser, 2015; Hallett, McManus, Maycock, Smith, & Howat, 2014; Moore, Williams, Moore, & Murphy, 2013). This problematic relationship with alcohol is accentuated in the residence communities where students engage in high rates of harmful alcohol consumption behaviours such as binge drinking (Barnett et al., 2014; Hallett et al., 2014; Hasking & Schofield, 2015; Moore et al., 2013). Recent literature has demonstrated that there is no amount of alcohol consumption that is considered safe (Griswold et al., 2018), yet the general attitude among university students towards alcohol consumption has not shifted away from it being an essential part of what it means to be a student. This study was designed to further understand the phenomenon of alcohol consumption in residence and become part of the discourse around shifting students away from harmful consumption.

The participants of this study tell an important story. The quantitative results for example demonstrate that there is a relationship between a student's expectations prior to moving into residence and their actual alcohol consumption habits once they live in residence. This is a core relationship and a key discovery for understanding the complex association between university students and alcohol. How much alcohol you plan to consume and how often becomes what you

actually drink. Significantly, the participants responded that they were not consuming more or less alcohol than they expected prior to moving in. This leads to a couple possible conclusions. First, that the residence buildings themselves are not responsible for alcohol consumption more generally. Living in residence does not turn non-drinkers into drinkers or vice-versa. Secondly, students living in residence will seek out social connections with those that have similar alcohol consumption expectations and behaviours which results in the establishment of a supported social norm for their expected alcohol consumption level. Next, the quantitative results of the study show a relationship between one's understanding of their own consumption and the expectations and perceptions of peers. This finding is both a core relationship and a core theme for the study. The qualitative results demonstrate the numerous ways the participants were influenced by their peers during the formation of their expectations and during their decision process to consume alcohol in residence. Students are not making the decision to drink in a vacuum, and the social norms created inside their residence communities play a role in their decision.

The way that the quantitative and qualitative results of this study worked together to first identify then characterize the core relationships and themes demonstrates the intrinsic value of using mixed methods research to study the complex relationship between university students and alcohol. Future research should consider mixed methods an asset and focus on further understanding the formation of expectations regarding alcohol consumption with the intent to develop interventions to disrupt expectations that include harmful consumption.

This study is not without limitations. First-year, undergraduate university students are a challenging group of people to encourage to be part of a research study. Only 180 people participated in this study. It was calculated using G*Power that 270 participants would be

required to achieve power high enough to make the results significant, though the power calculated post-hoc was demonstrated to be high despite the lower participant number. The lead researcher's ability to actively recruit and engage with potential participants was limited by the need to protect the anonymity of the participants due to the potential conflict of interest with the participants. Other methods of recruitment, like recruiting face-to-face, continuous direct email prompts, or recruitment through agents employed by the primary researcher could all have increased the number of participants but also increased the risk of social harm to the potential participants. It's possible that these recruitment efforts may have influenced the participants into believing that participation would create a beneficial relationship with the primary researcher due to the power differential in the residence environment. If this study were to be recreated at another institution, or at Dalhousie University in the future, eliminating that conflict of interest would allow for a more robust participant recruitment campaign.

This study relied upon the creation of a new measurement tool utilizing pieces of other vigorously tested tools. This is a limitation to the significance and generalizability of the results. Although the AUDIT questionnaire has been proven to be a reliable testing tool the questions of this survey needed to be adapted to be residence specific and relevant to the context of the desired results, namely, the expectations and actual alcohol consumption behaviours of the participants and their observations of their peers. In doing so, the validity of the testing tool is likely compromised. Future research in residence using the same or a similar adaptation to the AUDIT questionnaire should continue to test the validity of the tool. Blending these quantitative questions with qualitative questions to further characterize the relationship also proved challenging. The participants' responses to the two questions designed to illicit a greater understanding of the source of their expectations before moving into residence overall resulted in

very similar answers indicating that the questions were not written in a way the differentiated them to the participants as they filled them out. The first qualitative question (question 5), "what influences were those expectations based on" was intended to illicit responses about societal and environmental influences like alcohol culture, youth culture, and or high school culture. The second qualitative question (question 6), "who or what were the sources of that influence" was intended to illicit responses about specific people like a parent, sibling, romantic partner, and/or groups of people like peers, friends, the other people at school, or broader social influences like TV or social media. However, the responses to both were almost identical requiring an analysis and reporting of the results for both questions together.

The students who decide to study at Dalhousie University and choose to move into residence are unique. The results of this study are not generalizable to other institutions because of this. In fact, the results of this study may not apply to Dalhousie University students living in residence in subsequent years. However, the results do indicate that there is a relationship between alcohol consumption expectations and actual alcohol consumption behaviours. It is up to each institution to understand the complex relationship between their students and alcohol in order to design and implement meaningful interventions to bring about change. The risk of harm caused by alcohol consumption is too great to remain status quo.

Dalhousie University students and administrators have a responsibility to address its relationship to alcohol as an institution. As society's understanding of the harms associated with alcohol continues to evolve so too does the need to eliminate or at least reduce those harms. Dalhousie University has an opportunity to utilize the core components of health promotion decreed by the Ottawa Charter (1986) such as building healthy policies, creating supportive environments, strengthening community action, and building personal skills to make progress

towards a multi-campus institution with fewer alcohol-related academic challenges, injuries, illness, disease, and death.

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Appendix A Recruitment Email

Jeff Wilson BA, BSW, SWC Master's Candidate in Health Promotion Project Title: An

exploration of alcohol consumption expectations among students entering university

residences: A health promotion approach to developing solutions.

Email Subject Line: Dalhousie Study – First Year Student's Expectation of Alcohol

Consumption

I am inviting you to complete a brief, anonymous 14 question online survey that will take

about 15-20 minutes to complete.

As part of a graduate program in Health Promotion at Dalhousie University, I am carrying out a

study to learn about the relationship between a student's expectation of alcohol consumption

prior to moving into residence and the actual rate of consumption once living in residence. I'm

interested in demonstrating what this relationship is to expand the knowledge base and inform

the Dalhousie's approach to harmful alcohol consumption in residence. All first-year students

living in a Dalhousie University residence for the first time have been contacted in the same way

to invite them to participate.

This survey is anonymous and identifying information will not be linked to you. As the

primary researcher, it is important that I state that I am also a Residence Life Manager at

Dalhousie University. However, your choice to participate in this study or not has no effect on

your residence placement, your academic success, or your participation in the student conduct process. Disclosing illegal activity has an inherent risk. This study is designed to be anonymous in order to protect the identity of the participants.

This study has been reviewed and accepted by the Dalhousie University Research Ethics Board. Thank you in advance for your time and consideration. After a week, we will send you a one-time follow-up reminder.

The following link will lead you to the online survey: LINK LINK LINK

Jeff Wilson BA BSW SWC Master's Candidate in Health Promotion Department of Health and Human Performance Dalhousie University, Halifax Nova Scotia jd.wilson@dal.ca

**This recruitment letter was created using a template acquired from McMaster University,

https://reo.mcmaster.ca/educational-resources

Appendix B Letter of Support

DALHOUSIE UNIVERSITY

July 6, 2017

To Whom It May Concern;

    I, Dr. Arig al Shaibah, Vice-Provost Student Affairs at Dalhousie University, am writing this letter in support of the master's thesis project entitled: *An exploration of alcohol consumption expectations among students entering university residence: A health promotion framework to developing solutions.*

    I have met with the author, Mr. Jeffrey Wilson, MA Health Promotion Candidate, and have been given access to all relevant documents including the thesis proposal and draft ethics application.

    As the Vice-Provost Student Affairs, I am the senior management official responsible for Residence Life at Dalhousie University. I give permission for the above named research project to be carried out inside the residence buildings at Dalhousie University using the methods for data collection and analysis specifically outlined in the ethics application.

    You may contact me to discuss my support of this research project if required.

Thank you,

Dr. Arig al Shaibah, Ph.D.
Vice-Provost Student Affairs
arig.alshaibah@dal.ca

Cc.

Mr. Chauncey Kennedy, Executive Director Student Life

Appendix C Questionnaire

For the purposes of this questionnaire the Canadian Association of Mental Health definition of standard drink sizes will be used as the measurement for "1 drink". This is defined as the following:

- **12oz of beer (5% alcohol)**

- **5oz of wine (10-12% alcohol)**

- **3oz of fortified wine (16-18% alcohol)**

- **1.5oz (40% alcohol)   Butt et al. (2011)**

1. Prior to moving into residence, how often did you expect to consume alcohol while living in residence?

a.   never

b.   monthly or less

c.   2 to 4 times per month

d.   2 to 3 times per week

e.   4 or more times per week

2. Prior to moving in to residence, how many alcoholic drinks did you expect to consume on a typical day when you are drinking while living in residence?

a.   1 or 2

b.   3 or 4

c.   5 or 6

d.   7,8,or9

e.   10 or more

3. Prior to moving into residence, how often did you expect your peers to consume alcohol while

living in residence?

a. never

b. monthly or less

c. 2 to 4 times per month

d. 2 to 3 times per week

e. 4 or more times per week

4. Prior to moving in to residence, how many alcoholic drinks did you expect your peers to consume on a typical day when they are drinking while living in residence?

a. 1 or 2

b. 3 or 4

c. 5 or 6

d. 7,8,or9

e. 10 or more   The following two questions are short answer question. Please provided a detailed response in 1 to 2 sentences.

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5. When considering your answers to the above questions, what influences were those expectations based on? Please specify:

_____
_____
_____
_____
_____
_____
_____

6. When considering your answer to question 5, who or what were the sources of that influence?

Please specify:

_____

_____

_____

_____

_____

_____

_____

7. Now that you are living in residence how often have you been consuming alcohol in any setting?

a.   never

b.   monthly or less

c.   2 to 4 times per month

d.   2 to 3 times per week

e.   4 or more times per week

8. Now that you are living in residence how many alcoholic drinks do you consume on a typical day when you are drinking in any setting?

a.   1 or 2

b.   3 or 4

c.   5 or 6

d.   7,8,or9

e.   10 or more   The following question is a short answer question. Please provided a detailed response in 1 to 2 sentences.

9. Now that you are living in residence what influences you to consume alcohol? Please specify:

_____

_____

_____

_____

_____

_____

_____

10. Now that you are living in residence how often have your peers been consuming alcohol in any setting?

a.   never

b.   monthly or less

c.   2 to 4 times per month

d.   2 to 3 times per week

e.   4 or more times per week

11.   Now that you are living in residence how many alcoholic drinks do your peers consume on a typical day when they are drinking in any setting?

a.   1 or 2

b.   3 or 4

c.   5 or 6

d.   7,8,or9

e.   10 or more

12.   Please enter the month and year in which you were born.
Month_____Year_____

13.   Prior to moving into residence were you the legal age to consume alcohol in your place of residence?

a.   No

b.   Yes

14.   What sex/gender do you identify as?

a.   Male

b.   Female

c.   Transgender

d.   Other

e.   Prefer not to disclose

Appendix D Consent Form

Project Title: An exploration of alcohol consumption expectations among students entering university residences: A health promotion approach to developing solutions.

You are invited to take part in a research study being conducted by me, Jeff Wilson, a graduate student in Health Promotion, as part of my master's degree at Dalhousie University. The purpose of this research is to identify and describe the relationship between first year student's expectation of alcohol consumption prior to moving into residence and their actual rate of consumption while living in residence, and this invitation has been sent to all first year Dalhousie students living in residence. I will write up the results of this research in my thesis document for my thesis defense and will make the final report available to students.

As a participant in the research you will be asked to complete a brief anonymous survey that will take about 15-20 minutes to complete. All responses will be saved on a secure Dalhousie server and processed using SPSS quantitative analysis software and NVivo qualitative analysis software. The survey does not ask for your name, and at no point will you be asked for identifying information, however, quotes based on anonymized data (i.e. no names or other identifying information) may be used in the final report and/or in publications.

Your participation in this research is entirely voluntary. You do not have to answer questions that you do not want to answer, and you are welcome to stop the survey at any time if you no longer want to participate. All you need to do is close your browser. I will not include any incomplete surveys in my analyses. However, if you do complete your survey, if you change your mind later, I will not be able to remove the information you provided because the surveys are completed anonymously, so I would not know which one is yours.

Information that you provide to me will be collected anonymously, which means that there will be no questions asked in the survey that asks for identifying information. Only my supervisor and I will have access to the survey results. I will describe and share general findings in presentations/my master's thesis/scientific journals. I will keep anonymous survey information so that I can learn more from it as I continue with my studies. Data will be stored on a password protected USB key and will remain in a locked cabinet in my supervisor's office and will destroyed after 5 years.

The risks associated with this study are no greater than those you encounter in your everyday life.

Results will be shared with all students living in residence via an email containing general research results in April 2018. You may not directly benefit from participating in this research but the findings might contribute to new knowledge and/or the creation of new programs and services for students living in residence. You will not receive compensation.

You should discuss any questions you have about this study with Jeff Wilson. Please ask as many questions as you like. If you have questions later, please feel free to contact me or my supervisor. My contact information is jd.wilson@dal.ca. My supervisor, Dr. Jacqueline Gahagan, PhD, can be reached at jgahagan@dal.ca.

If you have any ethical concerns about your participation in this research, you may contact Catherine

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Connors, Research Ethics, Dalhousie University at (902) 494-1462, or email ethics@dal.ca. If you agree to complete the survey, please follow the link here.

**This recruitment letter was created using a template acquired from Dalhousie University, https://www.dal.ca/dept/research-services/responsible-conduct-/research-ethics-/resources-.html

Appendix E Chi-Square Crosstab

Q7 * Q14

Crosstab

			Q14 female	Q14 male	Total
Q7	2 to 3 times per week	Count	29$_a$	24$_b$	53
		Expected Count	35.2	17.8	53.0
		% within Q7	54.7%	45.3%	100.0%
		% within Q14	25.2%	41.4%	30.6%
		% of Total	16.8%	13.9%	30.6%
		Standardized Residual	-1.0	1.5	
	2 to 4 times per month	Count	50$_a$	16$_b$	66
		Expected Count	43.9	22.1	66.0
		% within Q7	75.8%	24.2%	100.0%
		% within Q14	43.5%	27.6%	38.2%
		% of Total	28.9%	9.2%	38.2%
		Standardized Residual	.9	-1.3	
	4 or more times per week	Count	0$_a$	3$_b$	3
		Expected Count	2.0	1.0	3.0
		% within Q7	0.0%	100.0%	100.0%
		% within Q14	0.0%	5.2%	1.7%
		% of Total	0.0%	1.7%	1.7%
		Standardized Residual	-1.4	2.0	
	monthly or less	Count	16$_a$	7$_a$	23
		Expected Count	15.3	7.7	23.0
		% within Q7	69.6%	30.4%	100.0%
		% within Q14	13.9%	12.1%	13.3%
		% of Total	9.2%	4.0%	13.3%
		Standardized Residual	.2	-.3	
	never	Count	20$_a$	8$_a$	28
		Expected Count	18.6	9.4	28.0
		% within Q7	71.4%	28.6%	100.0%
		% within Q14	17.4%	13.8%	16.2%
		% of Total	11.6%	4.6%	16.2%
		Standardized Residual	.3	-.5	
Total		Count	115	58	173
		Expected Count	115.0	58.0	173.0

	% within Q7	66.5%	33.5%	100.0%
	% within Q14	100.0%	100.0%	100.0%
	% of Total	66.5%	33.5%	100.0%

Each subscript letter denotes a subset of Q14 categories whose column proportions do not differ significantly from each other at the .05 level.