

Check Yourself: Final Research Report

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Check Yourself: Final Research Report

1. Introduction

The Coalition for Action on High Risk Drinking was formed in 2008 a diverse group of University of Alberta department members and community representatives who have a stake in campus alcohol use began to meet to discuss how alcohol related incidents can be reduced. This team was coordinated by Deborah Eerkes from the Office of Student Judicial Affairs in response to a perception of a need for additional supports for students who were experiencing problems on campus related to alcohol use. The project brings together stakeholders from across the University, including:

- Office of the Dean of Students
- School of Public Health, Addictions and Mental Health Research Lab
- Office of Student Judicial Affairs
- University of Alberta Residence Services, including Faculté St. Jean and Augustana Residence Services
- Students' Union
- University Health Centre
- Student OmbudService
- Sexual Assault Centre
- Alcohol Policy Review Committee
- Risk Management Services, including Campus Security Services, Emergency Management and Insurance & Risk Assessment
- Responsible Hospitality Edmonton
- Alberta Health Services: Addiction and Mental Health

The coalition decided to offer a brief online alcohol normative feedback intervention to the community of University of Alberta students as both a broad approach to reducing high risk drinking, as well as a tool for units on campus who were seeking a resource to refer individual students who may be experiencing negative alcohol-related consequences. A variety of advertising and promotion strategies were developed under the campaign title of, "Check Yourself."

The Addiction and Mental Health Research Laboratory (AMHRL) at the University of Alberta offered to provide support to the group by a) synthesizing existing local data pertaining to alcohol use and alcohol-related incidents on campus; and b) conducting an evaluation of the Check Yourself intervention.

This report presents a summary of results from the Check Yourself intervention tool, monthly surveys, and administrative data. Data were collected from September 1, 2009 through April 30, 2010.

2. Aims of the Research and Evaluation

1. To describe characteristics of users of the Check Yourself online tool;
2. To describe patterns of alcohol use and problems among University of Alberta students;
3. To describe UA students' pre-drinking and alcohol protective behaviours; and
4. To evaluate the effectiveness of different methods of promoting Check Yourself.

3. Methods

Check Yourself Intervention Questionnaire

The Check Yourself intervention tool, available online available between September, 2009 and April, 2010, recorded data related to alcohol use, problem alcohol use (via the Alcohol Use Disorders Identification Test – AUDIT), student demographics, how they were referred to the website, campus-specific alcohol consequences, pre-drinking behaviours, and protective behaviours. If students were referred individually by a unit on campus, the questionnaire also recorded the referral number. It is important to note that responses to the Check Yourself tool should not be interpreted as representative of students in general because users were self-selected and some may have been “testing” out the tool, rather than answering truthfully.

In April, 2010, 1,000 randomly sampled students were personally invited to the Check Yourself online tool via a personalized email invitation. Students were randomly assigned one of five versions of the invitations. A key message was systematically varied in four of invitations in two ways: the use of either controlling or autonomy wording, and a health promoting or risk protecting reason for using Check Yourself. A fifth version omitted this key message to serve as a neutral basis for comparison. Table 1 shows the four versions of the key message. A five digit referral code was included to track actual usage of Check Yourself resulting from these invitations. Based on previous research, it was expected that the promotion-focused and autonomy supportive message framing would be most effective in drawing students to the Check Yourself website.

Personalized Email Invitation: Neutral Version

Hi [Student Name]!

You have been randomly selected to try out the Check Yourself online drinking self-assessment. We have asked 1,000 students to take part. Participation in the project is totally voluntary so it’s up to you to decide whether or not to take part.

Check Yourself is an online feedback tool that lets you see how your usual drinking habits compare to other university students your age and sex. It takes about 10 minutes to complete and you’ll get a customized feedback report based on your answers. The report tells you things like how many calories from alcohol you have taken on over the past year and about how much money you have spent on it.

[Key message inserted here for the four experimental versions]

All of your answers will be anonymous and all of your information will be kept confidential.

To access the tool, go to www.checkyourself.ca and enter the following referral code: #####

Table 1. Key messages for the four versions of the email invitations

	Autonomy Supportive	Controlling
Promotion Focus	<i>You might be curious about how alcohol fits into your life. Consider taking our test to find out how moderate drinking can help you improve your health and save you money.</i>	<i>You need to think about how alcohol fits into your life. You should take our test to find out how moderate drinking can help you improve your health and save you money.</i>
Protection Focus	<i>You might be curious about how alcohol fits into your life. Consider taking our test to find out how drinking too much hurts your health and costs you money.</i>	<i>You need to think about how alcohol fits into your life. You should take our test to find out how drinking too much hurts your health and costs you money.</i>

Monthly Campus Experiences with Alcohol Surveys

Each month between September 2009 and April 2010, a random sample of students selected by the Registrar's office, were invited to take part in a survey. The Campus Experiences with Alcohol Survey ("CEA") included:

- Drinking behaviour (AUDIT; Babor, 1993) – 10 items
- Alcohol-related problems (Rutgers Alcohol Problem Index) – 23 items
- Protective Behaviours (Martens et al., 2007, Howard et al., 2007) – 21 items
- Perceived risk of alcohol use (Wild & Cunningham, 2008) – 6 items
- Drinking motives (Drinking Motives Questionnaire – R, Cooper, 1994) – 15 items
- Recall and recognition of marketing strategies ~ 12 items
- Accessed "Check Your Drinking" – 1 yes/no item
- Demographics ~10 items

Students who completed the survey were offered a \$5 ONEcard credit in compensation for their time.

Table 2 shows the number of randomly sampled students invited to the survey and the response rate obtained for each month that the survey was conducted.

Table 2. Invitations and response rate per month for the Campus Experiences with Alcohol Survey

	Sept '09	Oct '09	Nov '09	Dec '09	Jan '10	Feb '10	Mar '10	Apr '10	Total
Number invited	800	600	600	600	600	700	600	700	5,200
Surveys completed	317	251	234	161	228	211	242	226	1,870
Response rate	39.6%	41.8%	39.0%	26.8%	38.0%	30.1%	40.3%	32.3%	36.0%

Administrative Records

Several units on campus, specifically OSJA, Campus Security Services, Residence Services, and the Sexual Assault Centre provided data on alcohol-related incidents and referrals to the Check Yourself online tool.

4. The Check Yourself Campaign

The Check Yourself campaign aimed to provide access to an online personalized normative-feedback tool, called "Check Your Drinking" to the student population using a range of marketing tactics of increasing directedness. The concept is to have a resource that is available for all, but that can also be used as tool to support students who may be experiencing drinking-related problems. Check Your Drinking was selected because it is evidence-based, and offers a positive, autonomy-supportive approach to reducing harm associated with excessive alcohol-use.

About the Check Yourself Online Tool

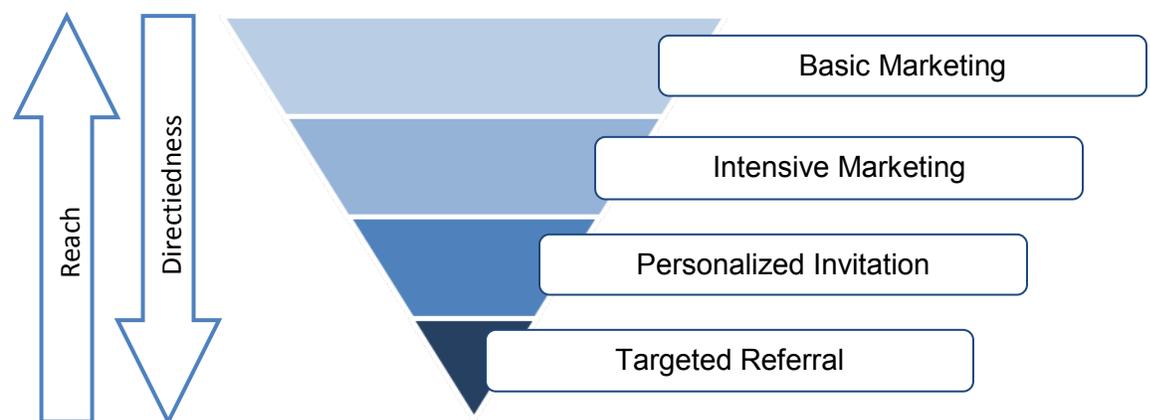
Check Your Drinking is an anonymous interactive online self-assessment tool that was developed by a partnership between an addiction expert and a research-based organization that develops electronic behaviour-change programs. Check Your Drinking provides a personalized feedback report based on

responses to a small set of questions about one's personal drinking patterns. Research has shown that problem drinkers tend to overestimate the amount and frequency of alcohol use by their peers. The detailed report provides feedback to the user about how their drinking habits compare to others their age and gender to correct their misperceptions. Studies have demonstrated that the tool is effective at reducing alcohol consumption among problem drinkers. For the purposes of this project, the University version of the tool was used, which employs Canadian University student norms for drinking rates and rates of problems and a student-oriented feedback report.

Marketing

The campaign was titled, Check Yourself and was focused on promoting use of the online normative feedback tool. Four levels of marketing tactics occurred, with greater directedness and narrower reach as you move down the figure. Each level is described below.

Figure 1. Four levels of marketing strategies



Basic marketing: Lower cost marketing strategies that will serve as the foundation for creating awareness about the Check Yourself site, such as posters in common areas.

Intensive marketing: Special strategies, such as Zoom media ads, presentations to special groups, and freebies.

Personalized invitation: A customized email invitation sent to 1,000 randomly selected students to suggest trying the Check Yourself tool. Each form of the invitation was assigned a referral code, which students were asked to enter into the Check Yourself tool to track the outcomes of the personalized invitations.

Targeted referral: A direct referral of an individual to the Check Yourself website by a Residence staff member, Campus Peace Officer, or Office of Student Judicial Affairs in response to a specific concern or problem. A suggested script was provided to units who might engage in targeted referrals along with small information cards to provide to the student. Each referral source was assigned a referral code, which students were asked to enter into the Check Yourself tool to track the outcomes of such targeted referrals.

5. Results

Demographics

Slightly more females than males completed both the Check Yourself tool (51.8%) and the Campus Experiences with Alcohol (CEA) survey (58.6%). Age distributions were similar across the two samples as well, with the average age of respondents being 22 years among Check Yourself participants, and 21 for those completing the CEA survey. With regard to living in a UA Residence, a greater proportion of Check Yourself participants (26.9%) than CEA survey participants (12.9%) reported living in residence. Consistent with enrolment figures for 2009, most respondents reported being in a 4-year degree program (81.9% of Check Yourself users and 87.1% of CEA survey participants). See Table 3.

UA Enrolment Facts

- There were 37,588 students registered at the UA in September of 2009
- This includes 30,457 undergraduates and 7,131 graduate students
- Approximately 4,000 students live in a UA residence.

Table 3. Demographic characteristics of Check Yourself users and respondents of the Campus Experiences with Alcohol Survey

	Check Yourself		Campus Experiences with Alcohol	
	Number	Percent	Number	Percent
Total	514	--	1,870	--
Gender				
Female	266	51.8%	1068	58.6%
Male	248	48.2%	756	41.4%
Age (years)	M = 21.71 yrs	SD = 3.75	M = 21.12 yrs	SD = 3.25
18 and under	56	10.8%	283	15.6%
19-20	173	33.3%	608	33.6%
21-22	139	26.8%	548	30.2%
23 and older	151	29.1%	373	20.6%
Live in residence				
Yes	139	26.9%	236	12.9%
No	377	73.1%	1592	87.1%
Type of program				
4-year bachelor's	412	81.9%	1,600	88.3%
Other	91	18.1%	211	11.7%
Student involvement				
Sorority/Fraternity*	24	4.7%	52	2.8%
Varsity	27	5.3%	60	3.2%
Student group	181	35.2%	681	36.4%
Accessed Check Yourself	514	--	70	3.8%

M = mean (average); SD = standard deviation

* Respondents could indicate more than one student involvement

Patterns of Alcohol Use and Problems

Both Check Yourself and the CEA survey included the AUDIT to measure alcohol behaviours and problems. The Alcohol Use Disorders Identification Test (AUDIT; Babor, 2001) was developed by the World Health Organization as a screener for alcohol use problems. The 10 questions tap alcohol use patterns, dependence symptoms and harmful alcohol-related consequences. Total scores of eight or more have been shown to reliably identify people who would benefit from at least a brief intervention such as offered by the Check Yourself tool.

Drinking habits tended to be heavier among to users of the Check Yourself tool compared to respondents of the CEA survey, indicating that Check Yourself was successful in attracting students with more problematic drinking behaviours (see Table 4). For example, with regard to drinking frequency, 63.1% of Check Yourself users reported drinking between two times a month and three times a week, compared to 52.7% of respondents to the CEA survey. With regard to typical drinking quantity, 47.2% of Check Yourself users reported drinking at least five drinks per occasion, compared to 24.7% of CEA survey respondents.

Table 4. Drinking behaviours of Check Yourself users and respondents of the Campus Experiences with Alcohol Survey

	Check Yourself		Campus Experiences with Alcohol	
	Number	Percent	Number	Percent
How often do you have a drink that contains alcohol?				
Never	23	4.4%	274	14.7%
Monthly or less	87	16.8%	535	28.6%
2-4 times a month	167	32.2%	699	37.4%
2-3 times a week	160	30.9%	286	15.3%
4 or more times a week	81	15.6%	76	4.1%
On a typical day when you do drink, how many drinks containing alcohol do you have?				
0-2	152	29.3%	935	50.4%
3-4	122	23.6%	462	24.9%
5-6	104	20.1%	248	13.4%
7-9	76	14.7%	139	7.5%
10+	64	12.4%	71	3.8%
How often do you have 5 (five) or more drinks on one occasion?				
Never	64	12.4%	526	28.3%
Less than monthly	140	27.0%	666	35.8%
Once per month	77	14.9%	274	14.7%
2-3 times per month	91	17.6%	257	13.8%
Weekly	78	15.1%	94	5.1%
2-4 times per week	59	11.4%	42	2.3%
Daily or almost daily	9	1.7%	2	0.1%

More than two-thirds (68.9%) of UA students evidenced no alcohol problems as measured by the AUDIT (see Table 5). Of the remaining third, 13.6% reported drinking at hazardous levels, 15.6% reported drinking at levels in the harmful range, and 1.9% indicated some degree of alcohol dependence. In contrast, total AUDIT scores among Check Yourself respondents tended to be higher, with 16.9% meeting the criteria for hazardous drinking, 27.6% falling within the harmful range, and 15.7% showing signs of dependence.

When using the sex-specific cut-offs for hazardous or harmful drinking (6 or higher for females, 8 or higher for males), 78.1% of Check Yourself users met the criteria for problem drinking, compared to 39.5% of respondents to the CEA survey. With approximately 35,000 students enrolled at the UA, this translates into about 13,825 students who fall about the problem drinking cut-off, who might benefit from brief alcohol interventions such as Check Yourself.

Table 5. Alcohol use problems of Check Yourself users and respondents of the Campus Experiences with Alcohol Survey

	Check Yourself		Campus Experiences with Alcohol	
	Number	Percent	Number	Percent
No Problem (0 -7)	205	39.8%	1,240	68.9%
Hazardous (8 - 10)	87	16.9%	245	13.6%
Harmful (11 - 19)	142	27.6%	281	15.6%
Dependence (20 or more)	81	15.7%	34	1.9%
Sex-specific cut-off for hazardous or harmful drinking (6+ for females, 8+ for males)	207	78.1%	694	39.5%

Drinking On and Off-Campus

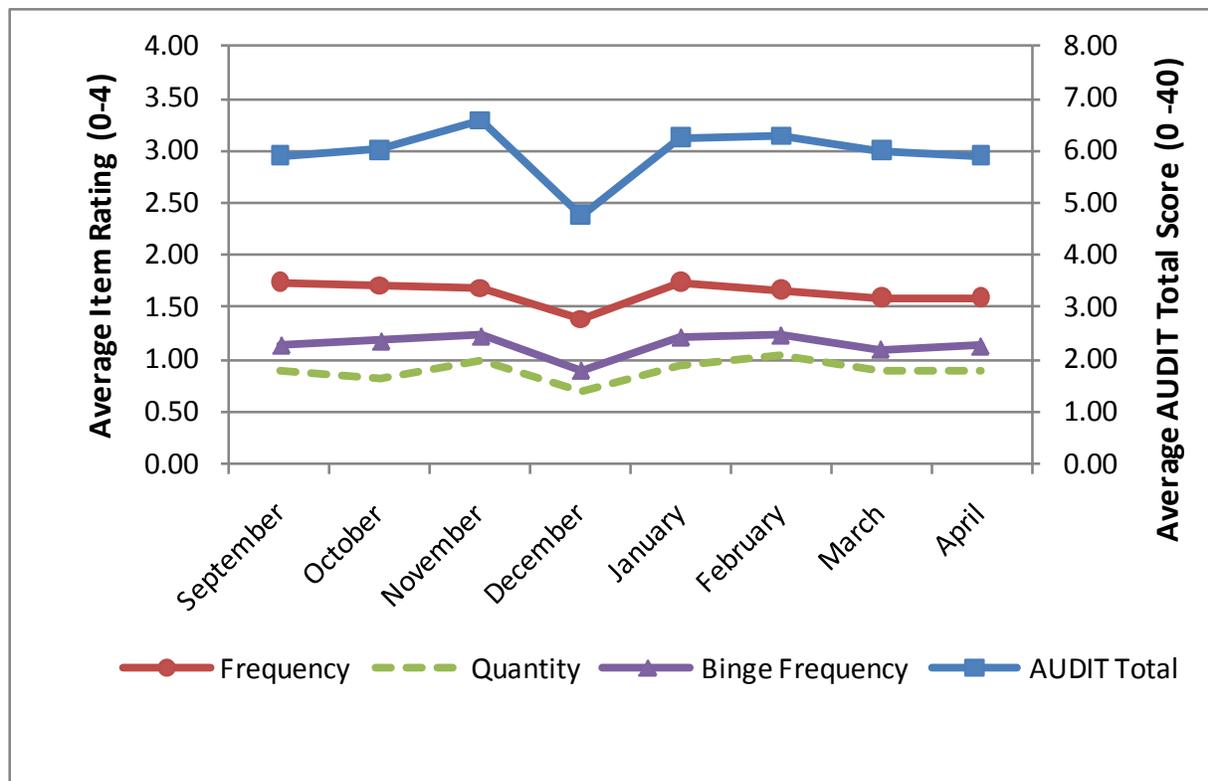
Check yourself users were asked the number of times in the past month that they had consumed alcohol in four locations: Whyte Avenue, Jasper Avenue, venues near the main campus (e.g., Dukes, Hudson's), and venues on campus (e.g., RATT). The Whyte Avenue area was most commonly frequented (50.1% had visited at least once in the past 30 days), followed by venues near campus (48.9%), Jasper Avenue (37.9%), and venues on campus (34.2%). With regard to how often students visited the four areas, however, venues near campus were more visited an average of 2.46 times in the past month, Whyte Avenue 1.42 times, venues on campus .96 times, and Jasper Avenue .89 times.

Drinking Patterns over Time

Drinking habits remained fairly stable over the course of the academic year among respondents to the CEA survey. With the exception of a minor (but non-significant) reduction in drinking behaviours occurring in December, drinking frequency, quantity, binge drinking frequency, and problem drinking were consistent from month to month (see Figure 2). It is possible that the survey questions were not sensitive enough to possible monthly fluctuations because the items asked respondents to reflect on their drinking within the past year. Respondents may have discounted fluctuations in their drinking habits that might occur in a given month as an anomaly and instead responded with respect to what they perceive as more typical patterns. It is also possible that in general, student drinking habits tend to be fairly consistent over time.

The average score on the drinking frequency item (0 = Never, 1 = Monthly or less, 2 = 2-4 times a month, 3 = 2-3 times a week, 4 = 4 or more times a week) ranged between 1.39 in December to 1.74 in September and January. The average score on the drinking quantity item (0 = 0-2, 1 = 3-4, 2 = 5-6, 3 = 7-9, 4 = 10 or more) ranged between .69 in December and 1.04 in February. The average score on the frequency of binge drinking item (0 = Never, 1 = Less than monthly, 2 = Monthly, 3 = Weekly, 4 = Daily or almost daily) ranged between .89 in December to 1.24 in February. Finally, the average AUDIT total scores (0-7 = no problems, 8-10 = hazardous drinking, 11-19 = harmful drinking, 20 or more = dependence) ranged from 4.77 in December to 6.59 in November.

Figure 2. Average drinking frequency, quantity and binge frequency item scores and AUDIT total scores in each month of the CEA survey



Drinking Patterns among Select Sub-Groups

Drinking behaviours were statistically compared for males and females, first year undergraduates versus all other students, and students living in residence versus all other students (see Table 6). With regard to gender, males reported higher levels of drinking with respect to all four drinking behaviours (frequency, quantity, binge drinking frequency and the AUDIT total score). First year undergraduate students reported drinking less often and evidenced lower total AUDIT scores compared to other students. Finally, students living in residence reported drinking a greater number of drinks per occasion compared to students in other living arrangements, however these groups did not differ in terms of the frequency of drinking, the frequency of binge drinking or problem drinking levels.

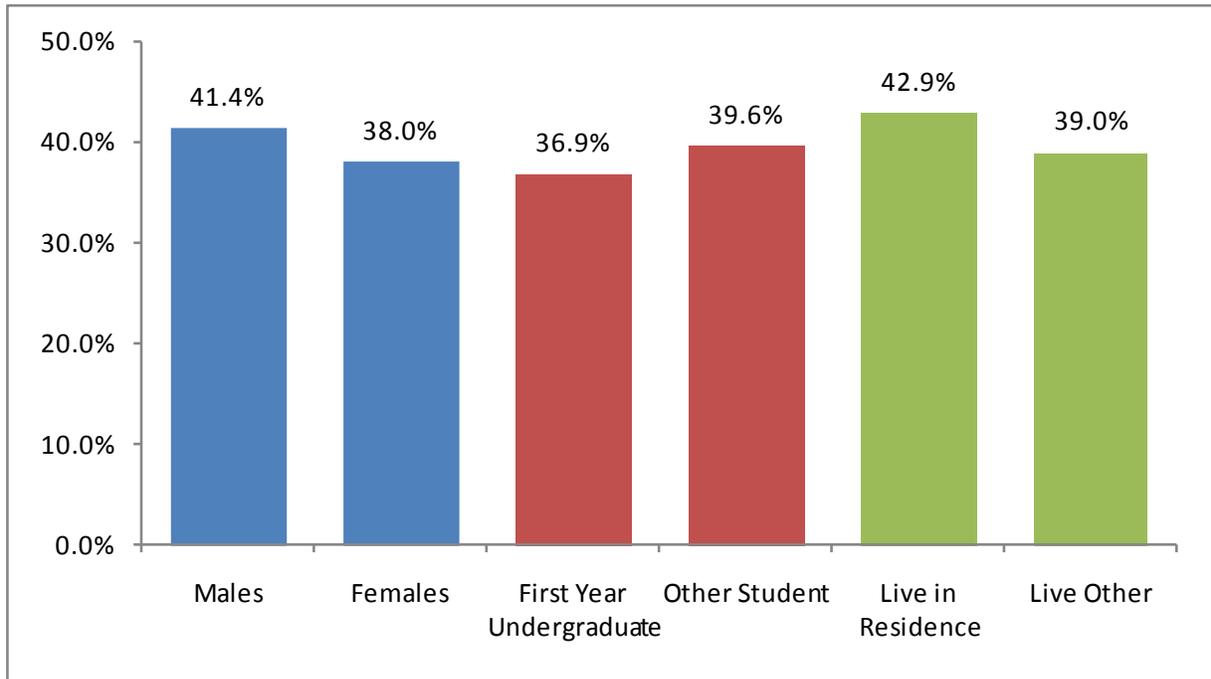
A comparison was also made between the percentage of males and females who met the sex-specific cut-offs for alcohol problems (6 or more for females and 8 or more for males). The rates for females and males were found to be similar (41.4% of males, 38.0% of females met the sex-specific cut-off for hazardous or harmful alcohol use). First year undergraduates were no more or less likely to meet the criterion for hazardous or harmful drinking than were other students (36.9% of first year undergraduates, 39.6% of other students). Finally, students living in residence were also no more or less likely than students in other living arrangements to evidence hazardous or harmful drinking levels (42.9% for UA residence students, 39.0% for other students). See Figure 3.

Table 6. Average drinking frequency, quantity and binge drinking item scores and AUDIT total scores, by gender, first year status, and residence status (CEA survey respondents)

	Drinking Frequency (0-4)	Drinking Quantity (0-4)	Binge Drinking Frequency (0-4)	AUDIT Total Score (0-40)
	M (SD)	M (SD)	M (SD)	M (SD)
Gender				
Female	1.52 (.94)***	.74 (.96)***	.98 (.83)***	5.09 (4.33)***
Male	1.84 (1.12)***	1.12 (1.30)***	1.39 (.99)***	7.26 (5.84)***
First Year Status				
First Year Undergrad	1.47 (.95)***	.92 (1.12)	1.10 (.95)	5.32 (4.52)**
Other	1.69 (1.04)***	.88 (1.13)	1.16 (.92)	6.12 (5.23)**
Residence Status				
Lives in UA Residence	1.65 (.99)	1.06 (1.19)*	1.25 (1.00)	6.43 (5.45)
Other Living Arrangement	1.65 (1.04)	.87 (1.12)*	1.14 (.91)	5.95 (5.08)

*Significant difference ($p < .05$); **Significant difference ($p < .01$); ***Significant difference ($p < .001$)

Figure 3. Percentage of students meeting sex-specific cut-offs for hazardous or harmful drinking, by gender, first year status, and residence status (CEA survey respondents)



Pre-Drinking Behaviours

Check Yourself users were asked to identify the number of days in the past 30 that they drank any alcohol, the number of days in the past 30 that they pre-drink, and the number of drinks they usually have when pre-drinking. They were also asked to estimate the number of days of the past 30 that the typical UA student pre-drink and the typical number of drinks that a UA student has when pre-drinking.

Students reported that they drank, 7.56 days on average in the past month (see Table 7). On average, students indicated that 43.89% of the times that they drank involved pre-drinking (3.78 of the past 30 days, on average). However, students' estimates of the typical number of days that UA students pre-drink were higher. Although Check Yourself respondents reported pre-drinking on 3.78 days in the past month, they believed that the typical UA student would have pre-drunk on 7.10 days. This over-estimation was also apparent when considering the quantity of alcohol consumed when pre-drinking. Specifically, while Check Your Drinking users reported that they drank on average 3.14 drinks while pre-drinking, they estimated that the typical UA student typically consumed 4.27 drinks while pre-drinking. These findings are consistent with considerable research showing that individuals tend to over-estimate how much and how often others drink, particularly those who are heavier or problem drinkers.

Table 7. Self-reported and perceptions of peers' pre-drinking frequency and quantity among Check Yourself users

	Check Yourself	
	M	SD
How many days in the past 30 days did you drink any alcohol? (days)	7.56	6.94
Percentage of drinking days involving pre-drinking (%)	43.89%	38.13
How many days in the past 30 days did you pre-drink (days)	3.78	5.48
How many days in the past 30 days do you think a typical University of Alberta student pre-drank? (days)	7.10	4.94
On average, how many drinks do you have while you are pre-drinking? (drinks)	3.14	2.97
How many drinks do you think a typical University of Alberta student has while pre-drinking? (drinks)	4.27	2.24

Participants were also asked to identify locations for pre-drinking that they had used in the past 30 days. The most common locations for pre-drinking were someone else's private home (43.0%), one's own private home (37.8%), and a restaurant or cheaper pub than was planned for later on (27.4%). Outdoors either on- or off-campus, and vehicles were rarely mentioned as locations for pre-drinking.

Table 8. Percentage of Check Yourself users reporting use of nine pre-drinking locations in the past 30 days

Location	Check Yourself	
	Number	Percent
Did not pre-drink in the past 30 days	158	30.4%
Someone else's apartment/house	223	43.0%
My apartment/house	196	37.8%
A restaurant or cheaper pub than where we planned to go later on	142	27.4%
Someone else's university residence room	97	18.7%
My room in residence	83	16.0%
Outside, off campus	74	14.3%
In a car, taxi cab, or bus	54	10.4%
Outside, on campus	20	3.9%

Drinking-Related Harms

Students were asked to report on the harms that they had experienced as a result of their drinking in the past year in two ways. First, respondents to the CEA survey reported how often then had experienced each of 23 harms such as not being able to do homework or study for a test, noticing a change in personality, and having a fight, argument or bad feelings with a friend. Scores could range from 0 to 92 with higher scores representing a greater exposure to negative alcohol-related consequences (Rutgers Alcohol Problem Index). Second, Check Yourself users and respondents to the CEA survey were asked to identify harms they had experienced to six areas of their lives. The total number of harms that they reported having experienced in the past year is presented in Table 7, along with the number and percentage of students who reported having experienced each of the six harms.

Scores on the Rutgers Alcohol Problem Index were fairly low overall, with an average score of 5.99 among University of Alberta students. CEA respondents reported a fewer number of areas of their life affected by their drinking, compared to Check Yourself users (.95 harms on average for CEA survey respondents, 3.34 harms on average for Check Yourself users).

A negative impact on one's home life or marriage was the most common harm reported by Check Yourself users (72.3%), followed by negative effects on friendships or one's social life (68.8%), negative effects on one's outlook (55.2%), and impacts on work, studies or employment opportunities (54.1%). In contrast, a much smaller proportion of respondents to the CEA survey reported experiencing each of the six harms (57.1% reported experiencing no harms at all). The most common harm reported was a negative impact on one's physical health (27.1%) and negative financial consequences (19.5%). This, again, suggests that Check Yourself tended to attract students whose drinking was more problematic. See Table 9

Table 9. Alcohol-related harms experienced by Check Yourself users and CEA survey respondents

	Check Yourself		Campus Experiences with Alcohol	
	M	SD	M	SD
Rutgers Alcohol Problem Index (0-92)	n/a	n/a	5.99	9.07
Count of number of harms (0-6)	3.34	1.98	.95	1.42
Harms Experienced	Number	Percent	Number	Percent
Home life or marriage	368	72.3%	96	5.2%
Friendship or social life	352	68.8%	277	15.1%
Outlook on life or happiness	280	55.2%	248	13.5%
Work, studies, or employment opportunities	276	54.1%	299	16.3%
Financial position	231	45.4%	358	19.5%
Physical health	228	45.0%	497	27.1%

Students who used the Check Yourself tool were also asked whether they had experienced any of seven specific harms as a result of their drinking in the past year. Most students (53.8%) reported not experiencing any of the seven harms, a further 38.3% reported experiencing one or two of the harms, and 7.9% reported experiencing three or four of the harms. The most commonly reported specific harm was missing a class, reported by 37.6% Check yourself users (see Table 10). All other harms were reported quite infrequently among those who completed the Check Yourself tool.

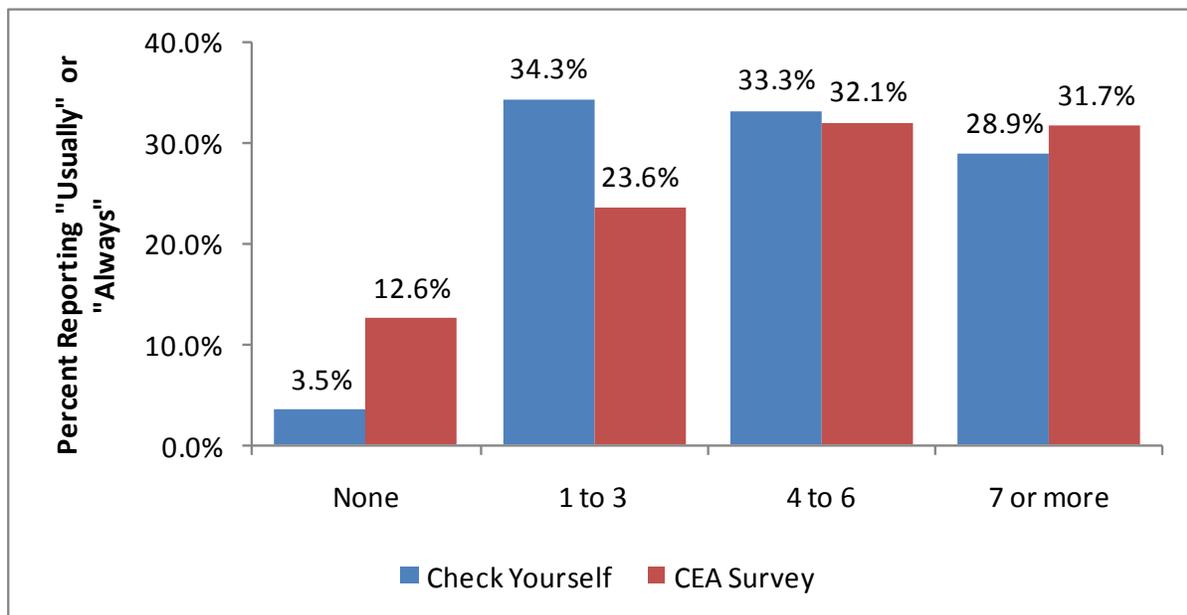
Table 10. Self-reported experience of specific harms within the past year by Check Yourself users

Specific Harm	Check Yourself	
	Number	Percent
Missed a class	195	37.6%
Had a sexual experience you later regretted	66	12.7%
Stopped, ticketed, or arrested by city police officer or RCMP	39	7.5%
Stopped or ticketed by Campus Security	20	3.9%
Had sex with someone without giving your consent?	20	3.9%
Had sex with someone without getting his or her consent?	12	2.3%
Taken to the emergency room of a hospital	11	2.1%
Written up under Residence Community Standards	11	2.1%
Charged under the Code of Student Behaviour	6	1.2%

Protective Behaviours

Students were asked to indicate how frequently they used each of 15 different strategies to protect themselves from alcohol-related harms. Most students reported using an array of strategies usually or always (see Figure 4). Only 3.5% of those who used Check Yourself and 12.6% of respondents to the CEA survey indicated that they used none of the strategies on a regular basis. However, 62.2% of Check Yourself users and 63.8% of CEA survey respondents indicated they used at least four of the strategies regularly. CEA survey respondents reported a slightly higher average number of strategies used regularly (4.93 strategies) compared to Check Yourself users (3.42 strategies).

Figure 4. Percentage of Check Yourself users and CEA survey respondents reporting use of 0, 1-3, 4-6, or 7+ self-protective strategies



More students reported using serious harm-reduction strategies regularly than any other kind of strategy (e.g., 82.7% of CEA survey respondents and 86.1% of Check Yourself users reported using a designated driver regularly; 82.5% of CEA survey respondents and 77.5% of Check Yourself users know where their drink is at all times; see Table 11). In addition, almost half (49.0%) of CEA survey respondents said that they regularly avoid trying to keep up with others' drinking, 45.8% try to drink slowly rather than chugging drinks, and 45.0% intermix alcohol between alcoholic drinks. The least common strategies employed regularly were to put ice in your drink (14.2%), to stop drinking at a predetermined time (16.7%), or to have a friend let you know when you have had enough (17.9%). The patterns of strategies used were similar for CEA survey respondents and Check Yourself users.

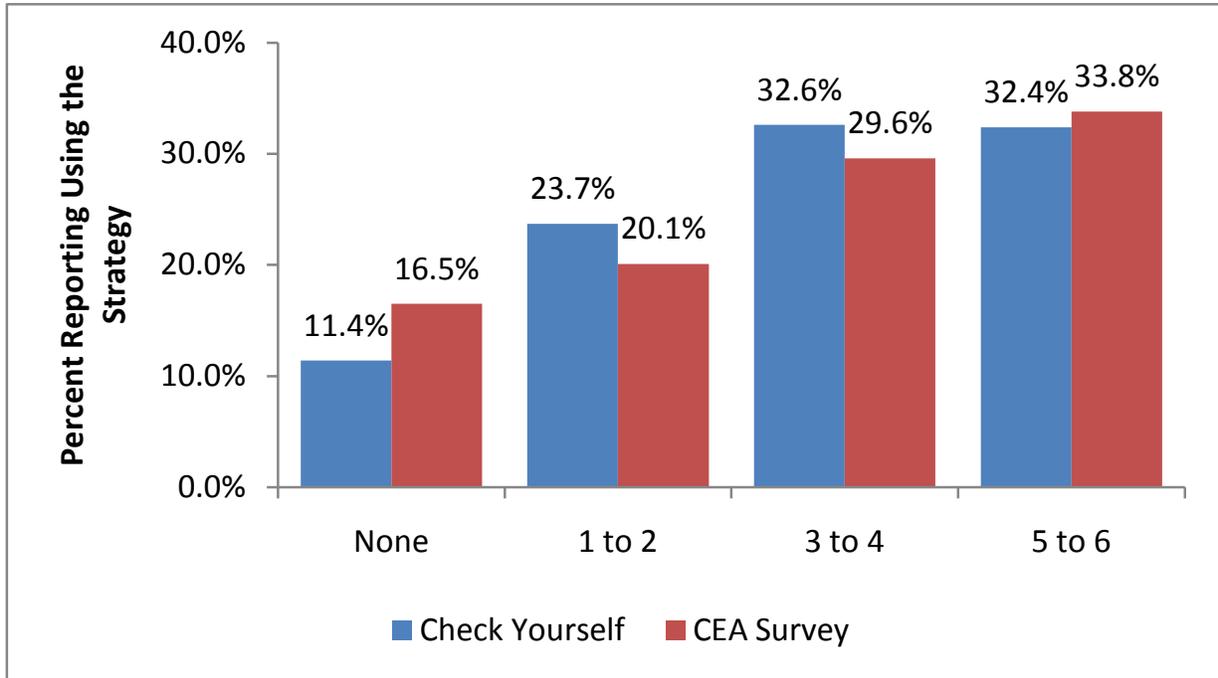
Table 11. Number and percentage of respondents who reported using self-protective strategies usually or always

	Check Yourself		Campus Experiences with Alcohol	
	Number	Percent	Number	Percent
Stopping/Limiting Drinking				
Determine not to exceed a set number of drinks	124	24.4%	431	27.8%
Alternate alcoholic and non-alcoholic drinks	117	23.1%	459	28.7%
Have a friend let you know when you have had enough to drink	95	18.7%	269	17.9%
Leave the bar/party at a predetermined time	99	19.5%	412	26.4%
Stop drinking at a predetermined time	71	14.0%	259	16.7%
Drink water while drinking alcohol	181	35.6%	721	45.0%
Put extra ice in your drink	65	12.8%	223	14.2%
Manner of Drinking				
Avoid drinking games	127	25.0%	420	27.0%
Drink shots of liquor (reverse scored)	104	20.5%	376	23.5%
Avoid mixing different types of alcohol	141	27.8%	521	32.9%
Drink slowly, rather than gulp or chug	188	37.2%	736	45.8%
Avoid trying to "keep up" or "out-drink" others	221	43.4%	741	49.0%
Serious Harm Reduction				
Use a designated driver (or walk, or use a taxi)	439	86.1%	1291	82.7%
Make sure you go home with a friend	332	65.4%	1053	66.9%
Know where your drink has been at all times	393	77.5%	1314	82.5%

*The percentage shown represents those responding "never" or "rarely" to this item.

Students were also asked about six strategies they may have used in the past year to help protect friends from harmful risks of drinking. Use of strategies to protect friends was widely reported (see Figure 5). On average, respondents to the CEA survey reported using 3.24 of the strategies, and Check yourself users reported having used an average of 3.34 strategies. More than half of CEA survey respondents (63.4%) said they had used at least three of the strategies within the last year.

Figure 5. Percentage of Check Yourself Users and CEA survey respondents reporting use of 0, 1-2, 3-4, or 5-6 peer-protective strategies in the past year



Staying sober to keep others in the group safe while they drink was reportedly used by 71.4% of CEA survey respondents and 68.8% of Check Yourself users (see Table 12). In addition, 65.0% of CEA survey participants and 72.3% of Check Yourself users reported that they had helped to get a friend home who was drunk. It is not known, however, how consistently these strategies are employed by students in drinking situations.

Table 12. Number and percentage of respondents who reported using the peer-protective strategies within the past year

	Check Yourself		Campus Experiences with Alcohol	
	Number	Percent	Number	Percent
Stayed sober to keep others in your group safe while they drank	352	68.8%	1314	71.4%
Helped a friend keep track of how much they were drinking or what they were drinking	228	45.0%	828	45.0%
Stopped a friend from drinking over their limit or getting too drunk	280	55.2%	998	54.4%
Got a friend home who was too drunk to get there on their own	368	72.3%	1196	65.0%
Made sure a friend who had been drinking didn't get into a fight	276	54.1%	902	49.1%
Made sure a friend who had been drinking didn't leave with someone they would later regret	231	45.4%	821	44.7%

Drinking Motives

Respondents to the CEA survey were asked 15 questions related to their reasons for drinking. Each item was rated on a four point scale representing how often they drink for that particular reason. Their responses were average across three underlying motivations: Enhancement (e.g., “I drink because it makes me feel good), Coping (e.g., “I drink to forget my worries”), and Sociability (e.g., “I drink because it is what most of my friends do when we get together”).

Students reported slightly higher endorsement of coping motives for drinking, with an average rating of 2.26 on the four-point scale. In comparison, scores on the enhancement motives scale averaged 1.77, and 1.6 on the sociability scale.

Table 13. Average scores on three drinking motives dimensions among CEA survey respondents

Drinking Motive	Campus Experiences with Alcohol	
	M	SD
Enhancement (1-4): To feel good or improve one's mood	1.77	.65
Coping (1-4): To help manage negative experiences or feelings	2.26	.76
Sociability (1-4): As part of one's social experiences	1.36	.53

Uptake of the Check Yourself Tool

In total, Check Yourself was accessed 519 times. Although it is not possible to determine if all of the users were unique, this number excludes those who identified themselves as researchers or other professions and those who chose not to be included in the study.

Over the course of the academic year, there were three main peaks in Check Yourself usage, corresponding to more active marketing strategies (see Table 14). In September and October, the majority of the intensive marketing strategies were deployed, including use of giveaways at orientation events, posters at targeted new student events, etc. More than half (53.9%) of the hits to Check yourself occurred in this period. A second, smaller peak in Check Yourself usage occurred in February, corresponding to a news article that was printed about the project. Finally, a major peak in uptake of Check Yourself occurred in April, corresponding to the implementation of the directed invitations to 1000 students.

Table 14 also displays the alcohol-related incidents recorded by three units on campus: Residence Services (open alcohol and alcohol-suspected incidents recorded in UA residences), Office of Student Judicial Affairs (violations of the Student Code of Behaviour where alcohol is a primary or secondary factor), and Campus Security Services Incidents (alcohol-related incidents involving students). Residence Services experienced a peak in alcohol-related incidents in the first semester (September, October, November). In comparison, there were more OSJA incidents in December (n = 4) and April (n = 6). Data for Campus Security incidents involving students and alcohol were not available on a monthly basis, but in total, there were 71 events that were identified as alcohol-related involving students.

Table 14. Check Yourself usage and UA campus alcohol-related incidents

	Check Yourself Hits	Residence Incidents	OSJA Incidents	Campus Security Incidents
Total	519	58	15	71
September 2009	143	24	0	n/a
October 2009	137	12	1	n/a
November 2009	1	12	0	n/a
December 2009	1	n/a	4	n/a
January 2010	1	5	1	n/a
February 2010	53	3	2	n/a
March 2010	5	2	1	n/a
April 2010	178	n/a	6	n/a

n/a = Data not available

In addition the Sexual Assault Centre provided information for the percentage of client visits in which the perpetrator or victim reported being under the influence of alcohol at the time of the assault. In January, of the incidents reported by clients, 27% of the perpetrators and 35% of the survivors were reported to have been under the influence of alcohol at the time of the assault. Among incidents reported in February, 24% of the perpetrators and 29% of the survivors are reported to have been under the influence of alcohol. Finally, among clients handled by the Sexual Assault Centre in March, 9% of the perpetrators and 22% of the survivors were reported to have been under the influence of alcohol at the

time of the assault. It is important to note, however, that clients may report an even that occurred at a previous time, and thus should not be interpreted as representing a trend in the involvement of alcohol in sexual assault, but rather a description of the cases that happened to be handled by the Sexual Assault Centre in those months.

Marketing Tactics

A variety of marketing strategies were used to promote use of Check Yourself including posters, ads in orientation materials, newspaper stories about the project, freebies, direct referrals, and email invitations. Table 15 displays the number and percentage of Check Yourself users who reported hearing about Check Yourself from each source. The three main strategies that were most effective in bringing people to Check Yourself were Referrals (e.g., friends, UA service staff, presentations; cited by 40.7% of Check Yourself users), Print marketing (e.g., posters, newspaper articles, orientation materials; cited by 31.0%), and direct email invitations (cited by 21.7%). Other strategies, such as the more intensive and costly freebies, did not appear to draw people to Check Yourself.

Table 15. How did you hear about Check Yourself?

Marketing Tactic	Check Yourself	
	Number	Percent
Referral	197	40.7%
Friend, family member told you about it	104	21.5%
Counsellor, campus health services, or other health service	29	6.0%
Faculty or department	26	5.4%
Residence staff	19	3.9%
Seminar or presentation (e.g., Alcohol Awareness, Aware)	13	2.7%
OSJA, Campus Security, Fraternity/Sorority Advisor referral	3	0.6%
Other referral (source not specified, UA alert)	3	0.6%
Print Marketing	150	31.0%
Poster	103	21.3%
Student newspaper	16	3.3%
Newspaper (Edmonton Sun article. 24 newspaper)	14	2.9%
Orientation package	9	1.9%
Handbook	8	1.7%
Email	105	21.7%
Other Media	32	3.3%
Website (UA website, "online", other website, Facebook)	16	3.3%
Freebie or giveaway item	11	2.3%
Other media (radio, TV, Beer Gardens, not specified)	5	1.0%

Referral Tracking

Check Yourself users were also asked to enter into the survey a referral number if they had been directed to the website by a partner group or by an email invitation. In total, 152 individuals (29.3% of all Check Yourself users) provided a referral number. Of these, only 1 was from a referral source other than direct email invitation. Given that when asked how the respondent had heard about Check Yourself 50 people indicated they had been referred by a campus service unit such as OSJA, Residence Services, or Peer Health, it is likely that respondents were simply choosing not to enter the relevant referral number or did not have their referral code on hand.

The remaining referral codes that were provided by Check Yourself users corresponded to the email invitation strategy. Five versions of an email invitation were sent out to 1,000 randomly selected UA students (200 per invitation version). The invitation versions differed in terms of a key message embedded in the general instructions: (1) neutral framing, which did not include a key message; (2) health promotion-autonomy supportive framing; (3) health promotion-controlling framing; (4) prevention-autonomy supportive framing; (5) prevention-controlling framing.

In the two weeks following the distribution of the emails on April 14, 2010, 177 individuals accessed the survey (34.1% of all hits to Check Yourself). Of these, 151 provided a referral code corresponding to one of the five versions of the invitation. Based on the referral numbers entered by Check Yourself users, there did not appear to be any differences in uptake of the online tool in relation to the five different versions. Among those who provided a referral code, 13.2% had received the neutral framed message, 21.2% received the health promotion-autonomy supportive framed message, 22.5% received the health promotion-controlling framed message, 21.2% received the harm prevention-autonomy supportive framed message, and 21.9% received the harm prevention-controlling framed message. Although the specific email message framing did not appear to matter to students, it remains apparent that a direct email invitation was an effective means of promoting use of Check Yourself.

Marketing Awareness

Respondents to the CEA survey were asked if they were aware of Check Yourself as a result of various marketing and referral strategies used as part of the campaign. Table 16 displays the number and percentage of respondents who indicated that they remembered having seen Check Yourself marketed in each way. With regard to referral or having been told about Check Yourself by someone else, 3.8% indicated they had been told about it by a Residence staff member, and 3.7% reported having been told about it by a friend. The Zoom media ads were recognized by 24.1% of respondents and 22.6% remembered having seen a poster for Check Yourself. Other marketing strategies appear to have less reach, with only 5.5% of respondents reporting having heard about Check Yourself as a result of a freebie item, 4.4% having learned about it through the UA website, and 4.4% learning about Check Yourself on Facebook.

Table 16. Recognition of Check Yourself marketing tactics among CEA survey respondents

Marketing Tactic	Campus Experiences with Alcohol	
	Number	Percent
Referral		
Residence staff	70	3.8%
Friend, family member told you about it	67	3.7%
Other referral (source not specified, UA alert)	54	3.0%
Faculty or department	46	2.5%
Counsellor, campus health services, or other health service	35	1.9%
Campus Security Services	14	.8%
OSJA	9	.5%
Print Marketing		
Zoom media ad	439	24.1%
Poster	412	22.6%
Student handbook	240	13.3%
Hanging banner	125	6.9%
Orientation package	82	4.5%
Other Media		
Freebie or other giveaway item	101	5.5%
UA website	80	4.4%
Facebook	80	4.4%
Residence website	37	2.0%
Referral card	22	1.2%
Twitter	19	1.0%

Discussion

The Check Yourself campaign was a pilot project of the Coalition for Action on High Risk Drinking, a group made up of concerned University of Alberta stakeholders. Because of the commitment, support, and resources of a wide variety of units on campus, a low-cost evidence-based brief intervention was made widely available to University of Alberta students as part of a comprehensive strategy to reduce risky alcohol use and alcohol-related problems.

The research and evaluation work that was conducted in conjunction with the Check Yourself campaign has provided a number of useful insights, which can be used to guide future efforts to address the issue of problem drinking at the University of Alberta.

1. **There is a need for Check Yourself.** Most UA students drink at a level that is not problematic. However, many (42.9% reported having experienced an alcohol-related harm in at least one area of their life. In addition, 39.5% of students surveyed met the sex-specific criterion for hazardous or harmful drinking, representing about 13,000 students at this institution who could benefit from a brief, readily available intervention such as Check Yourself.
2. **Future campaign should span the academic year, and may wish to target male students more intensively.** Patterns of drinking among UA students suggest that drinking habits are fairly stable across the academic year. Males tend to drink at a higher rate than females in terms of the frequency, quantity and binge drinking frequency of their drinking. First-year undergraduates drink less frequently than other students and students living in residence tend to drink slightly more when they drink compared to students in other living arrangements.
3. **Future campaigns can draw on the positive behaviours of students.** Most students (87.4%) use alcohol-protective strategies regularly and also have used peer-protective strategies to limit alcohol-related harms to themselves and friends. There is room for an increase in the regular use of stopping or limiting strategies to reduce harmful alcohol consumption, however.
4. **Check Yourself appealed to the target audience.** Students who completed the Check Yourself tool tended to report higher drinking levels, more drinking problems, and more alcohol-related harms, compared to students in the general population. Although uptake of the tools was relatively low overall, this indicates that the students who can most benefit from Check Yourself were, in fact, more likely to use it. Future campaigns can aim to expand the reach of the intervention, to ensure a greater proportion of those who can benefit from it do so.
5. **Marketing Check Yourself requires considerable effort, but low-cost tactics are most effective.** Direct referrals from friends and university service units, presentations to select groups, email invitations were the most effective means of drawing students to the Check Yourself website. In addition, posters and newspaper stories also appeared to bring about an increase in Check Yourself traffic. This suggests that future campaigns would benefit from a comprehensive strategy to increase direct referrals (e.g., refer a friend, improved referral strategy for residence staff and other units that have direct small group or one-on-one contact with students). This can be bolstered by strategic use of posters and ads in high traffic areas and promotion through newspaper stories in campus-based and city-wide media.