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Alcohol Screening and Brief Intervention in Primary Care Settings in Colorado:

Results from the 2017 Behavioral Risk Factor and Surveillance System

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Introduction

Excessive alcohol use, including binge drinking, contributes to an estimated 1,635 deaths annually in Colorado, which is an average of almost five deaths each day.[1] Excessive drinking is associated with harms to individuals (e.g., violence, injuries, cancers, and high blood pressure) and also has large costs to society. Excessive alcohol use cost Colorado $5 billion in 2010, almost half of which was paid by government.[2] Binge drinking contributes the most to these adverse outcomes, accounting for half of the alcohol-related deaths and three quarters of the economic costs.[3] Binge drinking is defined as having four or more drinks for a woman or five or more drinks for a man, on a single occasion. Excessive drinking is an important public health concern for Colorado as one in five adults (19%) and one in six high school youth (16%) report binge drinking.[4,5]

The implementation of alcohol screening and brief intervention (ASBI) in primary care settings is an evidence-based strategy to reduce excessive drinking among adults ages 18 and older.[6] ASBI has standard steps: 1) administering one, or a series of, validated screening question(s) to assess an individual's drinking patterns; and 2) providing individuals who drink excessively with a brief intervention. The brief intervention includes feedback about the risks and consequences of this behavior, discussion about changing drinking patterns, and referral to treatment services, if appropriate, for those who screen positive for potentially having an alcohol use disorder. Health professionals can deliver ASBI in person via a conversation or electronically in various settings, such as health care systems, universities, or communities.[7] Although earlier studies and systematic reviews have shown ASBI to be effective, only a few recent studies have examined the proportion of adults in the general population who have actually received this intervention.[8,9]

Colorado received two Substance Abuse Mental Health Services Administration Screening and Brief Intervention Referral to Treatment grants between 2006 and 2016, as well the State Innovation Model grant from the Centers for Medicaid and Medicare Innovation to increase ASBI in primary care settings.[10] In order to evaluate the impact of these ASBI implementation efforts, this report aims to provide an overview of ASBI in primary care settings for adults in Colorado. The secondary aim is to describe ASBI implementation among adults who report binge drinking because people who binge drink are at an increased risk for experiencing adverse alcohol-related consequences, such as injury, violence, and certain types of cancer.

Methods

Data for this report come from the 2017 Colorado Behavioral Risk Factor Surveillance System (BRFSS). The BRFSS is a representative, population-based survey that collects data on various chronic diseases, health behaviors and other health risks among adults in Colorado. The Colorado Department of Public Health and Environment (CDPHE) administers BRFSS annually in Colorado and weights the data to represent the general population using demographic variables in the dataset.[11] Survey respondents who reported seeing a health care provider for a routine checkup during the past two years in the core section of the BRFSS also responded to the optional module ASBI questions. Respondents who did not report seeing a health care provider for a routine checkup during the past two years did not receive the ASBI questions and therefore are not included in this analysis.

ASBI questions in the BRFSS optional module

The ASBI optional module contained five questions with "yes" or "no" response options. The survey asked the first four questions of everyone that saw a health care provider for a routine checkup during the past two years, and the last question if the respondent answered "yes" to any of the first three questions regarding alcohol screening. The questions in the ASBI optional module are:

1. At [your] checkup, were you asked in person or on a form **if you drink alcohol**?
2. Did the health care provider ask you in person or on a form **how much you drink**?
3. Did the health care provider specifically ask whether **you [binge] drank alcoholic drinks** on an occasion?
4. Were you **offered advice** about what level of drinking is **harmful or risky for your health**?
5. At your last routine checkup, were you **advised to reduce or quit your drinking**?

The authors assessed alcohol screening based on responses to the first three ASBI questions (1,2,3). Additionally, the authors calculated the overall prevalence of alcohol screening if the respondent answered "yes" to any one of the first three alcohol screening questions (3*). Lastly, the authors assessed the prevalence of receiving a brief intervention based on three measures: respondents indicating they were offered advice about levels of drinking that are harmful or risky (4); respondents who were screened in any way (3*) and indicated that they were advised to reduce or quit drinking (5); and respondents who were screened specifically for binge drinking (3) and indicated that they were advised to reduce or quit drinking (5).

Self-reported binge drinking

BRFSS asks all adults about binge drinking in the core section of the survey. Binge drinking is defined as adults that reported consuming four or more drinks for a woman or five or more drinks for a man on at least a single occasion during the past 30 days.

Statistical analysis

The authors calculated weighted prevalence estimates with 95% confidence intervals for ASBI steps among **adults who reported seeing a health care provider** during the past two years, which will be referred to as **Population A**. The authors conducted similar analyses among adults who reported seeing a health care provider during the past two years and **reported binge drinking** in the past 30 days, which will be referred to as **Population B**. CDPHE performed all analyses using SAS 9.4.

Results

Table 1 presents the socio-demographic characteristics of adults in Population A (n=7,904), the respondents who responded to the five state-added ASBI questions.

The majority of adults in Population A were female; older than 35 years; White, non-Hispanic; received some post-high school education or college education; had a household income of more than 250% of the federal poverty level (FPL); and had private health insurance.

Table 1. Socio-demographic characteristics of adults in Population A.

Demographics		Population A (n= 7,904) Percent
Sex		
	Female	52.8
	Male	47.2
Race/ethnicity		
	Black, non-Hispanic	4.1
	Hispanic	18.3
	Other, non-Hispanic	6.1
	White, non-Hispanic	71.5
Age group		
	18-24	11.4
	25-34	15.8
	35-44	16.5
	45-54	16.9
	55-64	17.6
	65+	21.8
Education		
	Less than high school	9.1
	High school or GED	22.0
	Some post-high school	32.2
	College graduate	36.7
Poverty level		
	0-100% FPL	10.7
	101-250% FPL	31.3
	>250% FPL	58.0
Insurance status		
	Medicaid/CHP+	10.5
	Medicare	19.7
	Military health	4.6
	Private	56.5
	Uninsured	8.6

Population A = Adults who saw a primary healthcare provider in the last two years.
GED = General Education Development (high school equivalency credential).
FPL = Federal Poverty Level.
CHP+ = Child Health Plan Plus.

Table 2 shows the prevalence of ASBI steps among Population A and Population B. Among Population A, adults who saw a health care provider, 88% reported being asked in person or on a form about alcohol use (1), 80% reported being asked in person or by form about how much they drink (2), and 38% reported being asked about binge drinking (3). Overall, health care providers screened 87% of respondents in some way for alcohol use (3*). In this same group, health care providers advised 22% of respondents about levels of drinking that are harmful to their health (4).

Among Population B, binge drinkers who saw a health care provider, providers asked 94% of respondents about alcohol use (1), 89% of respondents about how much they drink (2), but only 49% of respondents specifically about binge drinking (3). Overall, health care providers screened 93% of respondents in Population B for alcohol use (3*). In this same high-risk group, health care providers advised 38% of respondents about levels of drinking that are harmful to their health (4), and 17% of those who were screened to reduce their drinking (3* and 5). Health care providers advised 11% of those who were specifically screened for binge drinking to reduce their drinking (3 and 5).

Table 2. Prevalence of ASBI steps among Population A and Population B.

ASBI measures	Population A (n= 7,904)		Population B (n=881)	
	Percent	95% CI	Percent	95% CI
Individual ASBI screening measures				
Percent who reported being asked about…				
Alcohol use (1)	88.4	(87.1 - 89.8)	94.2	(91.3 - 97.0)
Quantity of alcohol use (2)	79.9	(78.1 - 81.6)	88.7	(84.6 - 92.7)
Binge drinking (3)	37.7	(35.3 - 40.2)	49.0	(42.1 - 56.0)
Combined ASBI screening measure				
Percent who reported being…				
Screened for alcohol (3*)	87.0	(85.6 - 88.4)	93.1	(90.2 - 96.0)
ASBI intevention measures				
Percent who reported being…				
Advised about levels of drinking harmful or risky to their health (4)	22.4	(20.5 - 24.2)	37.8	(31.9 - 43.7)
Screened for alcohol (3*) and advised to reduce or quit drinking (5)			17.1	(12.6 - 21.5)
Asked about binge drinking (3) and advised to reduce or quit drinking (5)			10.5	(6.8 - 14.2)

Population A = Adults who saw a primary healthcare provider in the last two years.
Population B = Adults who saw a primary healthcare provider in the last two years and self-reported binge drinking in the past 30 days.
CI = Confidence Interval.
Notes:
ASBI Measure 3* combines screening questions 1-3 to determine if a respondent was screened for alcohol use in any way.
Estimates are reported if the entire population should receive the intervention (e.g. alcohol screening, advised about harmful/risky levels of drinking).
Estimates are not reported if a certain proportion of the population may not need to be advised to reduce or quit their drinking (e.g. non-binge drinkers).

Discussion

In Colorado, 87% of adults who saw a health care provider reported being screened for alcohol use in primary care settings, including adults who did and did not binge drink. However, rates of screening specifically for binge drinking were significantly lower than rates of screening for alcohol use more broadly. The National Institute on Alcohol Abuse and Alcoholism recommends a single-question binge drinking screening tool as an

efficient and effective way to screen for excessive alcohol use in primary care settings.[12] Given that 19% of adults in Colorado reported binge drinking at least once in the last 30 days, health care systems can help reduce alcohol-related harms by increasing screening for binge drinking.

Although overall screening for alcohol use is high in Colorado, the prevalence of adults who reported receiving a brief intervention was significantly lower. For example, less than one in four adults who saw a health care provider reported receiving general advice about harmful and risky levels of alcohol use. Furthermore, health care providers advised only one in six adults who reported binge drinking to reduce or quit drinking. These results suggest that while health care providers are screening most Coloradans for alcohol use, these patients may not be receiving a brief intervention, even if they drink excessively.

Many potential barriers exist for implementing alcohol screening and brief intervention in primary care settings. Health care providers are met with the challenging task of providing patients with high quality of care in a short visit; therefore, providers may not feel that they have enough time to have a brief conversation with patients. There are often competing priorities during a primary care visit, and a provider may need to spend time addressing health concerns other than a patient's alcohol use.[13] Lastly, if a patient screens positive for excessive alcohol use, some providers may be uncomfortable engaging in a conversation around excessive drinking or not be trained in appropriate ways to refer a patient to further treatment if that patient screened positive for having an alcohol use disorder. This discomfort could be due to a lack of training, practice having sensitive conversations with patients around excessive drinking, or the organizational culture around alcohol use.[14,15]

The BRFSS is a representative, statewide self-reported survey that has some limitations. A respondent's memory of events during a routine checkup during the past two years could be susceptible to recall bias. It is possible that adults who drink excessively may describe drinking patterns more honestly on an anonymous survey compared to at a visit with their health care provider. This could be one potential explanation for the low prevalence of adults reporting brief interventions among the self-reported binge drinking subgroup, as health care providers may have been unaware of some of these patients' excessive alcohol use. A temporal difference between BRFSS questions could have an effect on the results. The BRFSS core binge drinking question asks respondents about past 30 day use, while the ASBI questions ask about a routine health care checkup during the past two years. It is possible that respondents were not self-reported binge drinkers during the time of their primary care visit.

The BRFSS only asks adults who had a health care visit in the past two years about ASBI, which does not include adults that did not have a recent routine health care checkup. Economic stability is critical to regular health care access. Lack of access to health care can often be perpetuated over generations due to systemic socioeconomic inequities, and adults without the means to have regular primary care visits may not be as represented in this analysis.

This report provides the first population-level overview of ASBI implementation among adults in primary care settings in Colorado. These results indicate opportunities for continued alcohol screening and increased brief intervention practices, especially for those patients who excessively drink. Colorado can continue to implement systems change strategies. These include educating and training health care providers in ASBI best practices, such as using validated alcohol screening tools (e.g., single-question screener for binge drinking, AUDIT, or Abbreviated AUDIT-C) to assess drinking patterns, supporting providers with individualized practice

having sensitive conversations, and decreasing systemic barriers to administering ASBI in primary care settings. Colorado could also implement population-level, evidence-based policies determined by the Community Preventive Services Task Force, such as increasing alcohol taxes and regulating alcohol outlet density. All these strategies, in combination with ASBI, could reduce excessive alcohol use and related harms in Colorado.[16]

Resources

- One Degree: Shift the Influence, Changing the conversation about alcohol and marijuana: https://shifttheinfluence.org/
- Peer Assistance Services No Cost Online SBIRT Training: https://pas.kognito.com/
- Planning and Implementing Screening and Brief Intervention for Risky Alcohol Use: A Step-by-Step Guide for Primary Care Practices: https://www.cdc.gov/ncbddd/fasd/documents/AlcoholSBIImplementationGuide-P.pdf
- CDC's Alcohol Screening and Brief Intervention Efforts: https://www.cdc.gov/ncbddd/fasd/alcohol-screening.html

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