



Associations among adolescent and young adult binge alcohol use and COVID-19 related exposures, impacts, and distress



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Background

Among adolescents and young adults (AYA), alcohol use is common, and results in chronic and acute health risks. "Binge" drinking is significant health risk behavior (Wisk&Weitzman 2016; Chung 2018), which may have worsened in the setting of COVID-19 related stressors and negative experiences. The COVID-19 pandemic has had unprecedented impacts on the mental health of AYA, affecting their experiences at home, school, and in the community (U.S. DHHS 2021). However, little is known about the implications of pandemic experiences on AYA alcohol use.

Objectives

Measure associations among pandemic experiences and alcohol use/binge drinking among AYA

Methods

Survey and Sample: An electronic REDCap survey was administered from 10/28/2020 to 5/24/2021 to AYA ages 16-23 years receiving health care at an urban hospital.

Measures: **Outcome:** Self-reported any binge level consumption (defined using age/sex cutoffs) during the past 3M, among the youth with alcohol use (screened by S2BI tool).

Predictor: Pandemic exposure, impact, and distress assessed by the COVID-19 Exposure and Family Impact Adolescent and Young Adult Version (CEFIS AYA).

Analyses: **Multivariable logistic regressions** were used to estimate the associations among pandemic exposure/impact/distress outcomes and past 3M binge drinking, adjusting for clinics, demographics, depression, anxiety, past3M cannabis use, pandemic risk mitigation practices and surveyed month. We used SAS9.4. Statistical significance was considered at

Results

Table 1. CEFIS and sample characteristics by alcohol use past 12months.

	Total (N = 469)	Past 12M alcohol use		P Value
		Yes (59.1%)	No (40.9%)	
Surveyd period				
2020Oct-2021Jan	397 (84.6%)	242 (87.4%)	155 (80.7%)	0.050
2021Feb-2021May	72 (15.4%)	35 (12.6%)	37 (19.3%)	
Demographics, health and CEFIS				
Age, Mean (SD)	19.3 (1.6)	19.8 (1.4)	18.6 (1.6)	<0.001
Female	320 (68.2%)	202 (72.9%)	118 (61.5%)	0.009
White non-Hispanic	271 (57.8%)	163 (58.8%)	108 (56.3%)	0.58
Parent college education	333 (71.0%)	202 (72.9%)	131 (68.2%)	0.27
Depression (PHQ-2 score >= 3)	84 (17.9%)	55 (19.9%)	29 (15.1%)	0.19
Anxiety (GAD-2 score >= 3)	124 (26.4%)	81 (29.2%)	43 (22.4%)	0.10
CEFIS Impact ^a , Mean (SD)	2.3 (0.8)	2.4 (0.7)	2.0 (0.8)	<0.001
CEFIS Exposure ^b , Mean (SD)	8.8 (3.6)	9.0 (3.5)	8.6 (3.7)	0.16
CEFIS Distress ^c , Mean (SD)	5.9 (2.4)	6.3 (2.1)	5.4 (2.6)	<0.001

Results: Of N=469 participants with complete outcome data, **59% reported past 12M alcohol use. Compared to youth without alcohol use, those with past 12M alcohol use reported more pandemic burden measured by CEFIS Exposures;**

- Family/self COVID exposure (41% vs 31%, p=.03).
- Difficulty accessing essentials (e.g., masks/cleaning supplies) (34.7% vs 25%, p=.03).
- Decreased family/self income (49% vs 39%, p=.03)

Wellbeing and Alcohol: AYA with past 12M alcohol use had more reporting of the pandemic made aspects of their wellbeing "a lot/little worse" than AYA without past 12M alcohol use (measured by CEFIS Impacts):

- How family/household members get along (59% vs 38%, p<.001)
- Ability to care for self-health (56% vs 38% , p<.001)
- Ability to be independent (63% vs 44% , p<.001)
- Physical wellbeing - eating (64% vs 48%, p<.001)
- Physical wellbeing - sleeping (53% vs 39%, p<.001)
- Emotional wellbeing - loneliness (79% vs 64%, p<.001)
- Emotional wellbeing - anxiety/ worry (84% vs 64% , p<.001)
- Emotional wellbeing - mood (82% vs 59% , p<.001)

Table 2. CEFIS and sample characteristics by any binge drinking past 3M.	Any binge drinking past 3M			P Val
	Total (N = 277)	Yes (40.8%)	No (59.2%)	
Among the past 12M alcohol users				
CEFIS				
CEFIS Impact ^a , Mean (SD)	2.4 (0.7)	2.5 (0.7)	2.4 (0.7)	0.022
CEFIS Exposure ^b , Mean (SD)	9.0 (3.5)	9.8 (3.7)	8.4 (3.2)	<0.001
CEFIS Distress ^c , Mean (SD)	6.3 (2.1)	6.2 (2.1)	6.4 (2.1)	0.67
Mental health				
Depression (PHQ-2 score >= 3)	55 (19.9%)	24 (21.2%)	31 (18.9%)	0.63
Anxiety (GAD-2 score >= 3)	81 (29.2%)	37 (32.7%)	44 (26.8%)	0.29
Substance use				
Drinking days past 3M, Mean (SD)	9.4 (11.9)	14.7 (13.1)	5.8 (9.4)	<0.001
Any cannabis use past 12M	170 (61.4%)	80 (70.8%)	90 (54.9%)	0.007
Any vaping past 12M	152 (54.9%)	76 (67.3%)	76 (46.3%)	<0.001
Pandemic related concerns and NPI (non-pharmaceutical intervention)				
When outside your home in public, how regularly do you:Wear a mask covering your nose and mouth?				
Always	204 (73.6%)	72 (63.7%)	132 (80.5%)	0.002
Never/Rarely/Sometimes/Usually	73 (26.4%)	41 (36.3%)	32 (19.5%)	
Over the past 2 weeks, on average, how much have you been concerned with; personally contracting COVID-19				
Not at all/Slightly	111 (40.1%)	57 (50.4%)	54 (32.9%)	0.009

Figure 2.

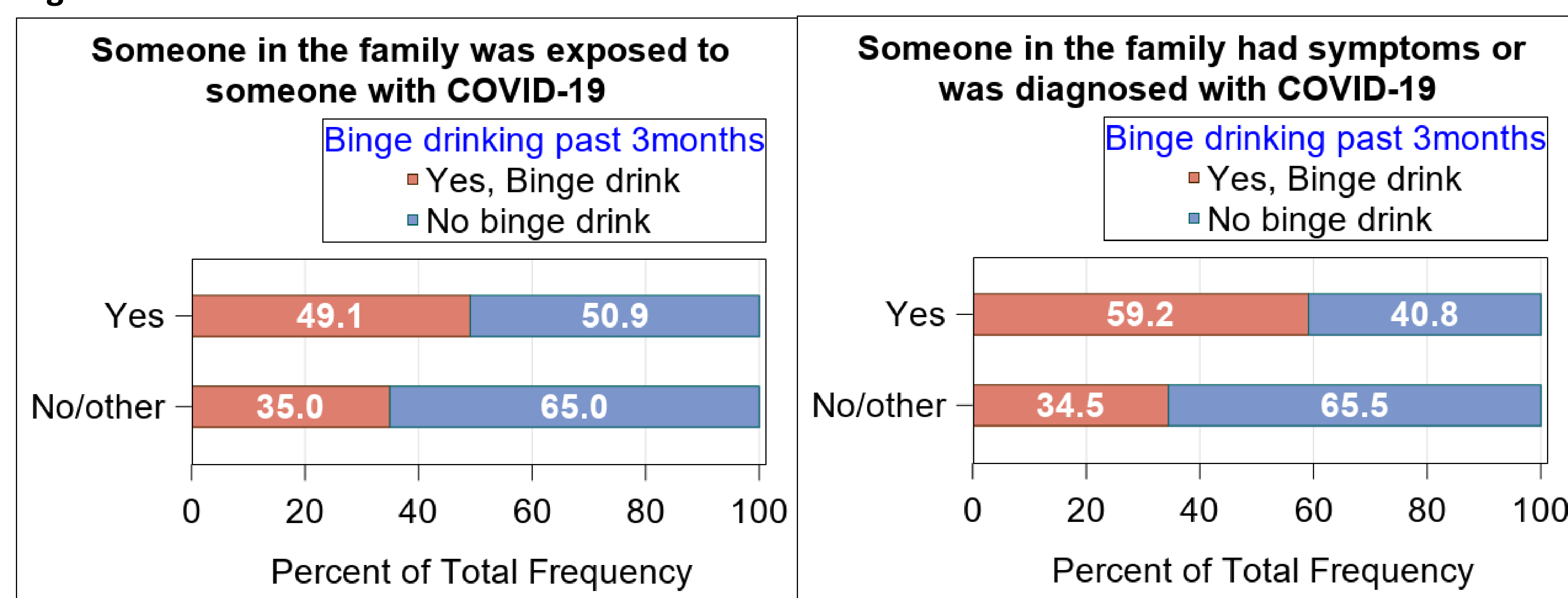


Table 3. The association between CEFIS and the past 3M binge drinking.

Predictor:(one unit (=1) increase)	Any binge drinking during the past 3months (vs No)					
	Unadjusted		Adjusted ^x			
	OR	95% CI	AOR	95% CI		
CEFIS Exposure	1.13	1.05	1.21	1.17	1.08	1.27
CEFIS Impact	1.50	1.03	2.19	1.61	1.04	2.49
CEFIS Distress	0.97	0.86	1.08	1.00	0.87	1.15

Notes: a.The Impact Score (range:0-4): the mean of 15 impact items measuring emotional/physical /social wellbeing (0=NA, 1=A lot better 4=A lot worse). b.The Exposure Score (range: 0-28) : the sum of COVID-19 related events. c.Distress Score: (1=No distress 10= Extreme distress)

X. Logistic regression adjusted for clinics (General vs Specialty, dichotomized), the frequency of cannabis use past 3M, age, biological sex, race, parental education, NPI (mask wearing important/regular), survey month (dichotomized as before/after Feb2021), depression and anxiety.

Results (cont'd);

There were N=277 past 12M alcohol users, 73% were female, 62% were white, 82% were non-Hispanic, and mean age was 19.8 (SD 1.4). Of these, **41% reported binge drinking past 3M.**

In bivariate analyses (Table 2, Fig 2), the binge group reported:

- Fewer COVID concerns
- Less regular mask use
- Higher mean CEFIS Exposure & Impacts
- Greater levels of family member COVID exposure (p=.02), and symptoms (p <.001)

In adjusted models (Table 3), among AYA reporting past 12M alcohol use, greater number of COVID-19 related events was associated with an increased odds of reporting past 3-month binge drinking (AOR: 1.18; 95% CI, 1.09 -1.27).

Discussion

- Alcohol users appeared to report the more severe burden of CEFIS Exposure and Impact
- Alcohol users reported less regular mask use and lower concern for personally contracting COVID-19
- Among the alcohol users, binge drinking was associated with and greater CEFIS Exposure.

Limitations

Findings should be interpreted in the context of limitations, including the cross-sectional nature of the data which preclude understanding causal relationships, a sample drawn from a single institution limiting generalizability, and self-reported nature of the data.

Conclusion

Positive associations among binge alcohol use and COVID-19 related exposures and impacts were found. Screening and supportive interventions are needed to address risks considering youth reporting negative pandemic exposures may be at heightened risk for binge drinking and the converse.

Contact and Funding

Contact: Machiko.Minegishi@childrens.harvard.edu
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