

Mental Health and Substance Use in Colorado Healthcare and Graduate Students During COVID-19: A Mixed-Methods Investigation

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Background

- COVID-19 studies demonstrate negative impacts on mental health caused by increased levels of anxiety and fear, among other factors.
- Past research has linked anxiety and fear, especially in the acute stage to substance use.
- Due to the nature of their education and chosen careers, professional healthcare students were uniquely burdened by the COVID-19 pandemic.

Methods

- Researchers assessed the impact of the COVID-19 pandemic on stress, fear, and substance use in graduate-level healthcare students from June 2020 through February 2021.
- The Fear of COVID-19 Scale (FCV-19S), an internationally validated, 7-item scale that measures coronavirus-related fear on a 30-point scale (ranging from 5 to 35), with higher scores corresponding to greater fear was used.
- To increase response rates, researchers promoted a chance to win two \$25 Amazon gift cards through a post-survey raffle.
- Both quantitative and qualitative analyses were conducted.

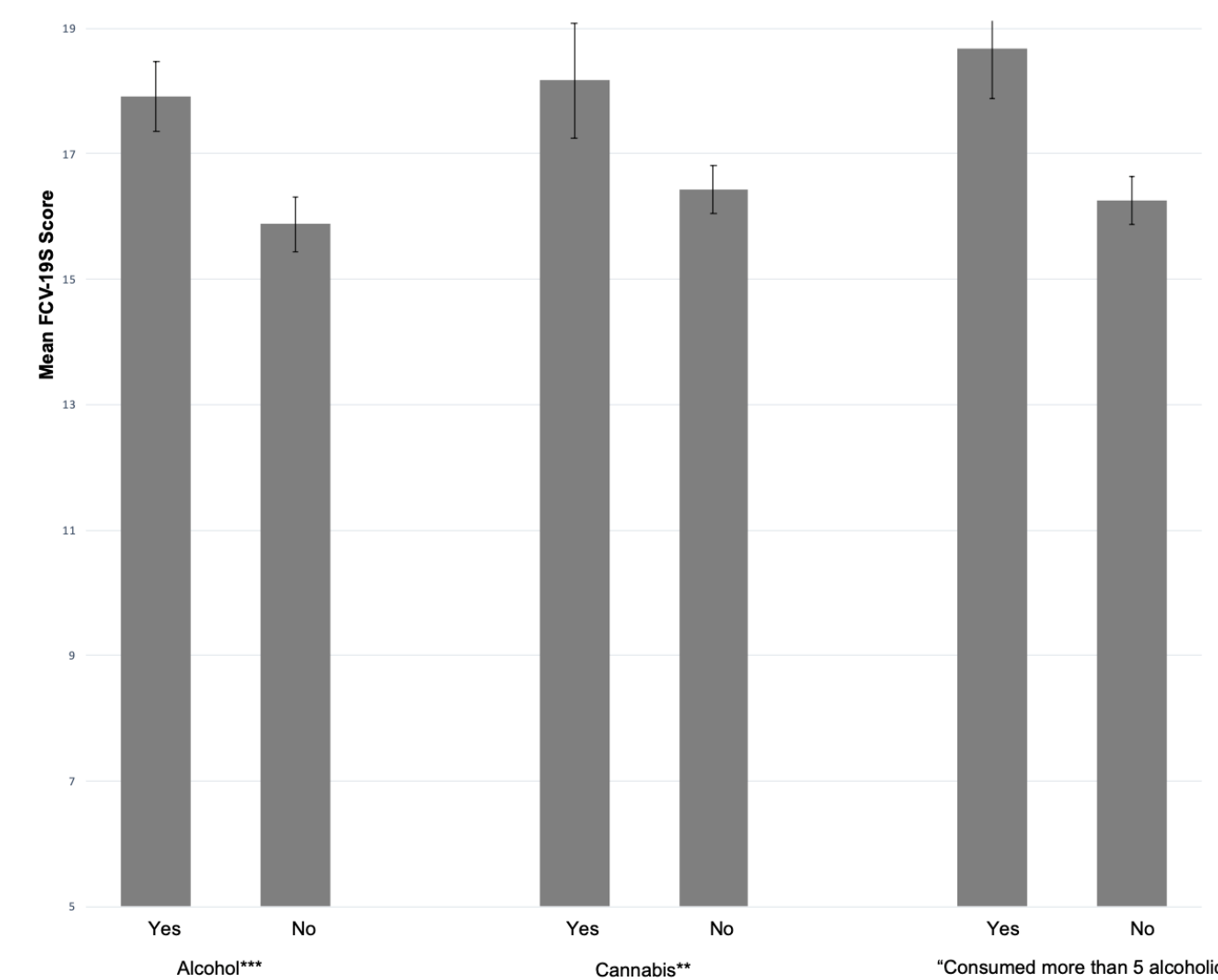
Results

Table 1. Mean FCV-19S Score by Response to Change in Feelings

"During the last 3 months or so, because of COVID-19, have you felt more...?"	COVID-19 Fear Value, Mean ± SD	dF	t	n (%)
Depressed***		829.63	11.60	
Yes	18.24 ± 5.16			508 (58.66)
No	14.44 ± 4.45			358 (41.34)
Exhausted***		686.54	11.64	
Yes	17.92 ± 5.25			585 (67.55)
No	14.10 ± 4.12			281 (32.45)
Lonely***		864	8.01	
Yes	17.65 ± 5.16			578 (66.74)
No	14.73 ± 4.82			288 (33.26)
Nervous***		678.84	16.32	
Yes	18.48 ± 4.81			567 (65.47)
No	13.31 ± 4.22			299 (34.53)
Angry***		842.01	8.28	
Yes	18.48 ± 4.81			435 (50.23)
No	13.31 ± 4.22			431 (49.77)

*** Indicates intragroup difference with $p < 0.0001$.

Figure 1. Mean FCV-19S Score by Response to the Question: "Because of COVID-19, During the Last Three Months, Have You Used Any of the Following Substances More Than Usual?"



* Error bars represent 95% confidence interval
** Indicates $p < 0.01$ *** Indicates $p < 0.0001$

Almost six out in ten (58.66%) students reported feeling more depressed, 67.55% more exhausted, 66.74% more lonely, 65.47% more nervous, and 50.23% more angry due to COVID-19 (Table 1). Those who reported feeling more depressed, exhausted, lonely, nervous, or angry all reported higher mean FCV-19S scores that reached statistical significance relative to those who denied such feelings ($p < 0.0001$).

Nearly 40% (39.72%) of respondents reported increased alcohol intake, 17.72% reported consuming at least five alcoholic drinks on one occasion, and 14.44% reported increased cannabis use due to COVID-19 (Figure 1; Appendix Table 2). Moreover, these activities were associated with statistically significantly higher FCV-19S scores of $p < 0.0001$, $p < 0.0001$, and $p = 0.0003$, respectively (Figure 2).

Student expressed three main qualitative themes regarding COVID-19 concerns: duration of the pandemic, its impact on education/finances, and its social impact (Table 2). Using deductive coding, three additional themes emerged in response to the substance use question: frequency of use, substances used, and reasons for change.

Table 2. Qualitative Analysis Codes, Subcodes, and Examples

Code	Subcode	Participant Examples
Patterns of Substance Use	Frequency:	<ul style="list-style-type: none"> • "During quarantine, I found myself drinking far more than usual. As someone who...suffers from depression and anxiety, my symptoms have intensified, and I felt hopeless..." • "I have been drinking more frequently to "destress" and even turned to medical cannabis in order to sleep some nights." • "I mainly smoke weed to help me get through the loneliness and to make work more fun. Xanax has also helped me forget about stuff." • "I'm an alcoholic and relapsed a month ago." • "My Adderall use has increased because focusing at home is more difficult than in class."
	Substances:	
	Reasons for Changes:	

Conclusions

- Professional healthcare students with higher fear of COVID-19 reported significantly increased substance use, especially alcohol.
- Healthcare students with direct clinical exposure to COVID-19 reported significantly lower fear compared to students without clinical COVID-19 exposure.
- Students identifying as female reported significantly higher coronavirus-related fear compared students identifying as male.

Implications

- The relationship between fear of COVID-19 and alcohol use (i.e. causal, confounding, etc.) is unclear. It is possible both that fear drives alcohol use and that alcohol (or other substance) use predisposes students to higher levels of fear.
- The impact of COVID-19 on cannabis use remains a topic of debate, especially given baseline use differences the two.
- Given that students identifying as female report higher levels of COVID-related fear, institutions should consider interventions to better serve at-risk students.

Disclosures

The authors report no financial conflicts of interest.