Cannabis Use and Reported Effects on Driving Among Adults in Iowa

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OBJECTIVES

Roadside surveys have shown that cannabis is the most frequently detected drug after alcohol in drivers. (Berning et al., 2015). Legalization of cannabis has been reported to increase the proportion of drivers fatal crashes testing positive for THC (Tefft et al., 2016). A survey of cannabis users in Colorado, where cannabis use is legal, showed a significant proportion of drivers drove within 2 hours of cannabis use (Brooks-Russell et al., 2019). This research examines the relationship between cannabis use and driving in Iowa, where cannabis use is not legal.

DATA AND METHODS

Data for this study came from an online survey conducted between February and October 2020 with the primary goal of recruiting and screening participants for a larger study. The survey included questions assessing cannabis use, perceptions of risk related to impaired driving, and impaired driving behavior. The survey was designed based on a survey of Colorado cannabis users (Brooks-Russell et al., 2019).

RESULTS

Of the 1410 individuals who responded to the survey, 842 completed the survey and resided in Iowa. Of the Iowa residents, 80.8% (680) reported using cannabis in the preceding 30 days (Table 1). Almost all (87.2%) who reported use that excluded smoking/vaping reported using 1–5 times per month. For other current users, the largest blocks of users were those that used 26–30 times and those that used 1–5 times.

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Of those that used cannabis in the last 30 days, the proportion that drove within 2 hours of cannabis use increased ($X^2(2)$=192.3, p<.0001) with the frequency of cannabis use (Table 2). Similarly, the proportion that drove following use of cannabis and alcohol also increased with cannabis use ($X^2(2)$=192.3, p<.0001).

A statistically significant difference exists in the perception of cannabis effects on driving ($X^2(4)$=12.2, p=.0162). While the majority reported that cannabis use did not affect their driving regardless of frequency of use, those who used 21–30 days were least likely to report that they drove worse after cannabis use and most likely to report no difference.

There was also a significant difference in the likelihood to use cannabis when planning to drive ($X^2(6)$=19.7, p<.0001). Increasing frequency of cannabis use is associated with less likelihood of avoiding cannabis use when planning to drive and increased likelihood of reporting no difference in use. Only 10% of the most frequent users reported not using cannabis if they planned to drive compared to almost 53% of the least frequent users.

CONCLUSIONS

Our research shows that in Iowa there is a bimodal distribution of cannabis use with about 60% of individuals in either the most or least frequent use categories. Cannabis users in Iowa reported similar frequencies of driving after cannabis and cannabis/alcohol use compared to Colorado users. These results indicate that choosing to drive after use has less to do with legality than it does with frequency of use. Educational messaging aimed at frequent users is needed to mitigate the risks of impaired driving.

FUNDING

REFERENCES

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Table 1.

Individual characteristics by usage of cannabis

		No use in last 30 days (n=162) n (%)	Current use - no smoking/vaping (n=47) n(%)	Current use including smoking/vaping (n=633) n(%)
	Female	83 (51.2%)	30 (63.8%)	289 (45.7%)
Sex	Male	78 (48.1%)	16 (34.0%)	334 (52.8%)
	Other	1 (0.6%)	1 (2.1%)	10 (1.6%)
Drive at least 4 days per month	Yes	160 (98.8%)	46 (97.9%)	623 (98.4%)
	0 days	158 (97.5%)	0 (0%)	0 (0%)
	1–5 days	0 (0%)	41 (87.2%)	148 (23.4%)
	6–10 day	0 (0%)	2 (4.3%)	72 (11.4%)
During the past 30 days, on approximately how many days did you use cannabis in any form (smoked, vaporized, edibles, concentrates, or other types)?	11–15 days	0 (0%)	1 (2.1%)	65 10.3%)
	16–20 days	0 (0%)	1 (2.1%)	79 (12.5%)
	21–25 days	0 (0%)	0 (0%)	54 (8.5%)
	26–30 days	0 (0%)	2 (4.3%)	214 (33.8%)
	missing	4 (2.5%)	0 (0%)	1 ((0.2%)

Table 2.

Driving and cannabis use

		1–10 days (n=263) n (%)	11–20 days (n=146) n(%)	21–30 days (n=270) n(%)
During the past 30 days, on approximately how many days did you drive a car or other vehicle within 2 hours of using cannabis?	0 days	184 (70.0%	47 (32.2%)	32 (11.9%)
	1–5 days	76 (28.9%)	57 (39.0%)	62 (23.0%)
	6–10 day	3 (1.1%)	27 (18.5%)	55 (20.4%)
	11–15 days	0 (0%)	13 (8.9%)	39 (14.4%)
	16–20 days	0 (0%)	2 (1.4%)	32 (11.9%)
	21–25 days	0 (0%)	0 (0%)	17 (6.3%)
	26–30 days	0 (0%)	0 (0%)	32 (11.9%)
	missing	0 (0%)	0 (0%)	1 (0.4%)
During the past 30 days, on approximately how many days did you drive a car or other vehicle within 2 hours of using cannabis along with alcohol?	0 days	242 (92.0%)	125 (85.6%)	210 (77.8%)
	1–5 days	21 (8.0%)	17 (11.6%)	40 (14.8%)
	6–10 day	0 (0%)	3 (2.0%)	9 (3.3%
	11–15 days	0 (0%)	1 (0.7%)	3 (1.1%)
	16–20 days	0 (0%)	0 (0%)	3 (1.1%)
	21–25 days	0 (0%)	0 (0%)	1 (0.4%)
	26–30 days	0 (0%)	0 (0%)	2 (0.7%)
	missing	0 (0%)	0 (0%)	2 (0.7%)
On average in the past 30 days, when you used cannabis within 2 hours of driving, how did it affect your driving compared to occasions when you have NOT used cannabis?[1]	I drove better	13 (16.7%)	18 (18.4%)	44 (18.6%)
	I drove worse	10 (12.8%)	14 (14.3%)	10 (4.2%)
	There was no difference	55 (70.5%)	66 (67.3%)	183 (77.2%)
Compared to occasions on which you will NOT be driving, how does the likelihood that you will be driving within the next 2 hours influence the amount of cannabis that you consume?	I consume less cannabis	95 (36.3%)	82 (56.2%)	108 (40.1%)
	I consume more cannabis	0(0%)	1 (0.7%)	3 (1.1%)
	I will not consume any cannabis	138 (52.7%)	32 (21.9%)	28 (10.4%)
	There was no difference	29 (11.1%)	31 (21.2%)	130 (48.3%)

[1]Of those that drove within 2 hours of cannabis use