

Developing A Cannabis Use Pre-sedation Assessment Score

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Introduction

- Published research indicates that cannabis use rates in young adults have reached their highest level in decades. (1)
- Cannabis use before surgical procedures may decrease the effectiveness and increase the risk of sedation related complications. Moreover, use of cannabis before surgical procedures is becoming more prevalent. (2)
- The aim of this study was to develop and evaluate a Cannabis Use questionnaire for pre-operative sedation assessment.
- This will allow to match cannabis use to Oral Surgery deep sedation requirements and outcome.

Methods

- Prior to sedation administration, adult patients for third molar extraction, under deep Propofol sedation, completed a previously-developed (3) cannabis use/experience questionnaire.
- The questionnaire (Figure 1) was modified slightly to simplify the answer options and to allow the creation of a USE score based upon the results
- Third molar extraction procedures only were recruited
- Patient demographics, medical history, sedation use, and outcomes (Airway Score, Behavior Score) were obtained from the sedation records
- Cronbach's alpha was used to measure internal consistency of survey items. Values 0.60 or greater factor analysis to be significant.
- Factor Analysis was used to assess relationship between survey items with a minimum factor loading cutoff of 0.60.

Results

- With data collection ongoing, we have recruited 46 patients so far. The Cannabis use was stratified into 7 groups based upon the overall USE Score (Table 1). 25 questions were used for the score.
- USE groups patient demographics are shown in table 2.
- Overall, the average age was 19.4 yrs. old (range 18-25), and the average weight was 71.2 kg (range 49.6-110.5).
- No significant difference in age, and weight, between cannabis use categories were detected, females were more common in Use Score 0 group ($p=0.008$).
- ~50% of the patients who acknowledged cannabis use on the study questionnaire denied use during the check-in.

TABLE 1	DESCRIPTION
Use Score 0	Never Used
Use Score 1	Score < 20 / Not for a year
Use Score 2	Score 21-30 / Not for 6 months
Use Score 3	Score 31 to 60
Use Score 4	Score 61 to 90
Use Score 5	Score 91 to 120
Use Score 6	Score 120+

TABLE 2	No. Patients	Ave. age (years)	Ave. Weight (kg)	Ave. BMI	% FEMALE	% CANN YES	% PSYCH MED
Use Score 0	12	18.8	70	25.4	83.3	0	8.3
Use Score 1	5	18.4	67.4	22	60	0	20
Use Score 2	5	19.8	65.4	23.4	60	0	20
Use Score 3	6	20.7	70.5	22.8	50	50	33.3
Use Score 4	5	19.4	68.4	25.1	100	60	40
Use Score 5	9	20	78.3	25.1	11.1	100	11.1
Use Score 6	4	19	75.1	23.5	50	75	50

TABLE 3	DESCRIPTION	MAX SCORE	MEDIAN	MIN	MAX	25TH QUART	75TH QUART	% COMPLETE
2	LAST USE	11	7	1	8	4.25	7	100.0
3	FREQUENCY	12	9	0	12	3	11	100.0
4	DUR / FREQ	9	6	1	9	4	7	100.0
5	PREV / FREQ	12	4	1	12	1	7	100.0
6	USE DAYS LAST WEEK	7	2.5	0	7	0	5	100.0
7	MONTH	8	3	3	3	3	3	100.0
8	TOTAL NO.	6	5	1	6	2	5.75	100.0
9	WEEK USE	3	3	0	3	1	3	97.1
10	WAKE UP TO USE	8	3	0	6	1	5	100.0
11	WD USE	8	2	0	8	0	2.75	100.0
12	WE USE	8	2	0	8	1	3	100.0
13	PRIM / SEC USE	8	2	1	6	2	3	100.0
15	YEARS OF USE	9	2	1	9	1	5	97.1
16	AGE START	4	0	0	4	0	2	97.1
18	G/SESSION	8	1.5	0	8	0	5	94.1
19	G/DAY	8	1	0	8	0	4	94.1
20	G/WEEK	8	2	0	8	0	4.5	91.2
21	SESSION/DAY	6	1	0	5	1	2	97.1
22	AVE THC	7	0	0	7	0	4.25	94.1
23	Conc. Hits/ SESSION	8	3	0	8	2	6	38.2
24	Conc. Hits/ DAY	8	5	0	8	1	8	29.4
25	Conc. Hits/ YEST	8	0	0	8	0	7	29.4
26	Conc. SESS/ DAY	6	2	0	5	1	4	32.4
27	AVE C. THC	10	4.5	0	9	3	9	29.4
28	ED IMG	10	0	0	10	0	7	32.4
RAW	TOTAL NO.	85	26.5	0	72	1.5	52.75	(RAW SCORE)
MOD	TOTAL NO.	115	10	0	82	0	35.25	(MOD SCORE)
TOTAL	OVERALL	200	36.5	0	154	2.5	92	Max Score

TABLE 4	FREQ USE	CONC.	PATTERN	DURATION
2	LAST USE			
3	RECENT FREQUENCY USE			
4				USE / TIME
5	PREVIOUS FREQUENCY USE			
6			USE PATTERN LAST WEEK	
7	USE LAST MONTH		USE LAST MONTH	
8	LIFETIME FREQUENCY USE			
9	USE LAST WEEK			
10			WAKE UP USE	
11			WEEKDAY USE	
12			WEEKEND USE	
13	PRIMARY AND SECONDARY			
15				TOTAL YEARS OF USE
16				AGE START
18				G/SESSION
19				GRAM / DAY
20				GRAM / WEEK
21				SESSION / DAY
22				AVE THC CONTENT
23	Conc. Hits/ SESSION			
24		Conc. Hits/ DAY		
25		Conc. Hits/ YEST		
26		Conc. SESS/ DAY		
27			AVE Conc. THC CONTENT	
28		EDIBLE IMG USE		
% VARIANCE	0.24	0.158	0.232	0.174
0.804	HIGH LOAD (> 0.6)	MULTIPLE HIGH	LOW LOAD (< 0.4)	

Discussion

- The majority of our deep sedation adult patients reported recent cannabis use on questionnaires even if denied on initial medical evaluation.
- Questionnaire completeness was good except for the concentrates section, probably related to lack of use of these products.
- The original questionnaire was assessed with Cronbach Alpha and Factor Analysis and found to be valid.
- Due to the changes we made to simplify the questionnaire, to allow completion within a short period (< 5 mins.) of the pre-operative period as well as the assigning of scores to certain questions to create an overall score, we re-evaluated our newer version.
- The Cronbach alpha was very strong and the % variance spread equally over the 4 factors and load result from the Factor Analysis also confirm that the new questionnaire score is internally valid.
- The original questionnaire was derived from over 2000 college age responders, with a higher percentage of females, also found more females in the non or low user categories, with legalization of cannabis this difference in gender use patterns will probably close.
- This data can contribute to future research, understanding of our patient population, with the potential to modify our sedation practice based upon this cannabis use score.

- A summary of the individual questionnaire question scores is shown in table 3.
- Scoring consisting of both raw data (blue) and modified (green) values to total a maximum achievable score of 200 was used.
- Overall question completion was pretty high, except for conc. use.
- The Cronbach Alpha analysis revealed a strong internal consistency of all questions in respect to contributing to the survey as a whole, with Cronbach Alpha coefficients ranging from 0.95 to 0.96, while the previously referenced survey (3) revealed values of 0.69 to 0.95.
- Factor analysis revealed four groupings of questions (Figure 2).
- These were identified as: frequency of use, concentration of use, pattern/depth of use, and duration of use (Table 4).

References

- NIDA. 2022, August 22. Marijuana and hallucinogen use among young adults reached all time-high in 2021. Retrieved from <http://nida.nih.gov/news-events/news-releases/2022/08/marijuana-and-hallucinogen-use-among-young-adults-reached-all-time-high-in-2021> on 2023, April 9
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- Cuttler C, Spradlin A. Measuring cannabis consumption: Psychometric properties of the Daily Sessions, Frequency, Age of Onset, and Quantity of Cannabis Use Inventory (DFAQ-CU). PLoS One. 2017 May 26;12(5):e0178194. doi: 10.1371/journal.pone.0178194. PMID: 28552942; PMCID: PMC5446174.

Figure 2. Scree Plot

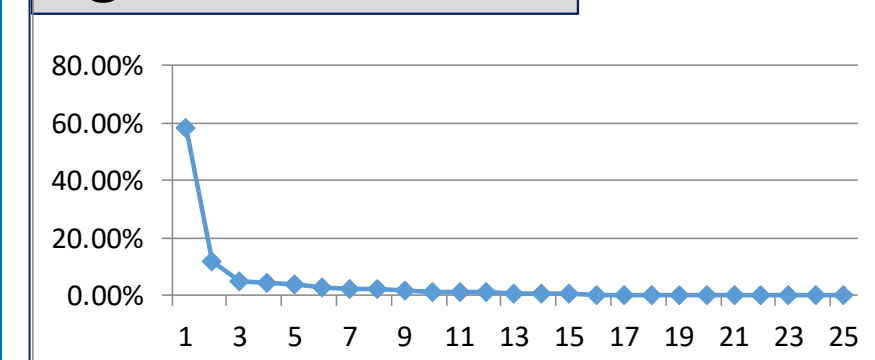


Figure 1. Cannabis Questionnaire Pages 1 and 3

