Assessment of Cannabis Use Prior to Oral Surgery Office Sedation

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Introduction

With the recent legalization of Cannabis and observed increased use of cannabis by our Oral Surgery sedation population, we have been evaluating a Pre-Sedation Cannabis use Score (PCUS) questionnaire to delineate cannabis use and stratify the patients accordingly. We also noted that some adolescents acknowledge cannabis use on the routine pre-sedation evaluation. We have previously reported increased sedation needs with our on-going PCUS research study and felt that we would like to explore the prevalence and extent of cannabis usage within the adolescent population. Cannabis usage can be associated with adverse effects during sedation for dental procedures. The stratification of patients according to their Cannabis use appears to be useful in determining the appropriate sedation dosing and adjunct sedation medication use. As such, we would like to try and make the 25 item questionnaire easier to complete so we can consider it as part of our routine pre-sedation screening evaluation, rather than a research tool. This requires us to shorten the questionnaire so it is easier to complete but still retain the appropriate stratifications of cannabis use that we demonstrated earlier. The Aim of the Study: was to evaluate the components of the questionnaire to determine if we can shorten it

Methods

A 25 item questionnaire (Figure 1) was completed prior to sedation IV placement. Procedure details, sedation requirements and outcomes were recorded from the sedation record. To assess the process of shortened questionnaire we reviewed the previously performed factor analysis that identified 4 question areas: (1) Frequency of Use, (2) Duration of Use, (3) Pattern of Use, and (4) Concentrates Use. From each of these 4 areas we chose 3 questions that accounted for most of the variance in the analysis. This resulted in a new Q12 version of the questionnaire. We then analyzed to effects of the Q12 version with respect to the individual questions and on any changes to the "Users" groups and Category stratification process.

Figure 1: Pages 1 and 3 of the Full Questionnaire

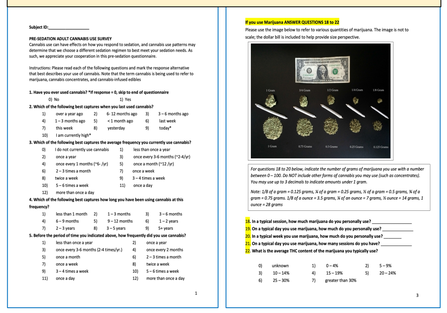

Table 1. Description of USER Groups & Categories (Full Questionnaire)

USER GROUPS	DESCRIPTION	USER GROUPS	DESCRIPTION
USERS 0 *(Never)*	Never Used	USERS 4 *(Moderate)*	Score 61 to 90
USERS *(Past / Occasional)*	Score < 20 / Not for a year	USERS 5 *(Heavy)*	Score 91 to 120
USERS 2 *(Past / Occasional)*	Score 21-30 / Not for 6 months	USERS 6 *(Heavy)*	Score 120+
USERS 3 *(Moderate)*	Score 31 to 60		

Table 2. Demographics and USERS

DEMOGRAPHICS	AGE (years)		WEIGHT (kg)		BMI	
FULL & Q12	FULL	Q12	FULL	Q12	FULL	Q12
NEVER	18.5	18.5	69.9	69.9	24.0	24.0
PAST / OCCAS.	18.7	18.7	71.6	72.4	25.6	25.8
MOD	19.3	19.4	68.8	68.2	23.5	23.2
HEAVY	19.3	19.3	73.4	73.4	24.6	24.8

Table 4. Range: Full & Q12

SCORE MAKEUP COMPARISON	FULL	Q12
MAX Raw Score	85	45
MAX MOD. Score	115	58
MAX OVERALL Score	200	103
% USERS THE SAME BETWEEN FULL & Q12		86
% GROUPS THE SAME BETWEEN FULL & Q12		97

Table 3. Median and Range of Scores for Partial Questionnaire

FACTORS		FREQUENCY of USE			DURATION of USE			PATTERN / DEPTH of USE			CONCENTRATE USE		
GROUPS		Q2	Q4	Q8	Q6	Q7	Q11	Q17	Q18	Q28	Q22	Q23	Q24
NEVER	*median*	0	0	0	0	0	0	0	0	0	0	0	0
	min	0	0	0	0	0	0	0	0	0	0	0	0
	max	0	0	0	0	0	0	0	0	0	0	0	0
PAST / OCCASIONAL	*median*	2	6	1	0	0	0	0	0	0	0	0	0
	min	0	1	1	0	0	0	0	0	0	0	0	0
	max	5	8	3	1	1	1	8	8	0	8	8	0
MODERATE	*median*	6	6	5	1	2	1	1	1	0	0	0	0
	min	3	2	1	0	0	0	0	0	0	0	0	0
	max	8	9	6	7	8	3	6	5	0	8	8	1
HEAVY	*median*	8	7	6	7	8	4	4	6	4	3	4	4
	min	7	3	3	2	1	1	2	1	0	0	0	0
	max	8	9	6	7	8	8	8	8	10	8	8	8
Kruskal Wallis	*P value. < 0.001*	All & Heavy	All except Never / Occasional	All except Mod. / Heavy	All except Never / Occasional	All except Mod. / Heavy	All except Never / Occasional	All & Heavy / Never & Mod.	All except Never / Occasional	All & Heavy	All & Heavy	All & Heavy	All & Heavy

Figure 2. Q12 Review of each Question and Significance

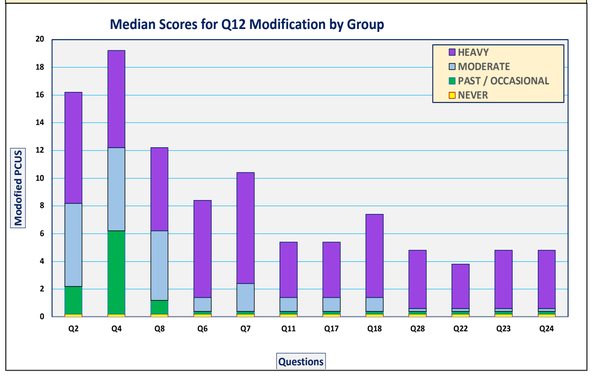

Figure 3. Full & Q12 Scores

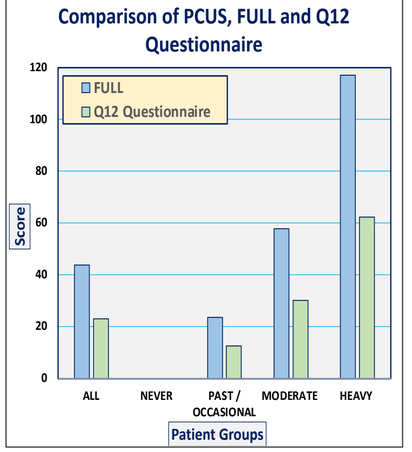

Figure 4. PCUS: Full & Q12

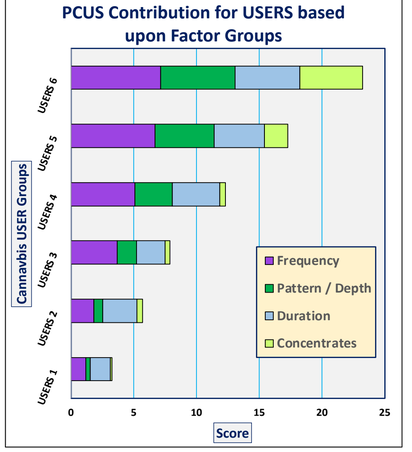

Table 5. Compare: Full & Q12

DIRECT SCORE COMPARISON	FULL	Q12	Range of Scores	
OVERALL AVERAGE	43.8	23		
OVERALL SD	45.8	24.4		
OVERALL MEDIAN	27	14		
OVERALL MIN	0	0	FULL	Q12
OVERALL MAX	153	91		
NEVER (average)	0	0	0	0
PAST / OCCAS. (average)	23.6	12.5	<30	<15
MODERATE (average)	57.8	30.2	31 to 90	15 to 45
HEAVY (average)	117.1	62.2	91 +	45+

Table 6. No. of Patients within Groups

USER	0	1	2	3	4	5	6
FULL Q	39	11	9	17	14	15	8
Q12	39	14	7	16	14	11	12

CATE-GORY	NEVER	PAST/ OCCAS.	MODE-RATE	HEAVY
FULL Q	39	20	31	23
Q12	39	21	30	23

Results

We have recruited overall 130 patients so far, including 14 adolescent patients. For this part of the study, the questionnaires from 113 have been analyzed. The USER groups and Categories (Never, Past/Occasional, Moderate, Heavy) as defined by the full PCUS are shown in table 1. Patient demographics did not change due to any re-alignment with the Q12 (Table 2). The Range of scores for each Q12 question for the four Factors is shown in table 3. Figure 2 demonstrates the importance of the Q11 through Q24 for assigning "heavy use", as such all of the Q12 questions demonstrate some benefit with respect to differentiating between the different User categories as shown in figure 2. The Kruskal-Wallis test demonstrated there were significant differences amongst the three questions from each factor groups. Comparison of the PCUS: Full versus Q12; ranges, category groups and scores are shown in tables 4 and 5, the scores dropped by about 50% across the board. Very few changes occurred in USER Group and Category distribution and the scores were ~50% different (Figure 3). The difference in patient distribution between the USER groups and the categories was very small when comparing Full to Q 12 (Table 6). In addition, Figure 4 demonstrates that each of the factors appear to be useful in differentiating the different USER groups.

Discussion

Our initial attempt to simplify the PCUS appears promising with respect to differentiating the 4 factor groups using these 12 questions. Further recruitment and analysis will confirm whether we also maintain a similar cannabis use group stratification. By taking the 13 questions out of the survey as observed here, our losses were minimal. Overall, the USER categories were 97% the same allowing us to stratify the patients accordingly. After we have completed our recruitment, with further question analysis the goal is to get our questionnaire down to about 8 questions so that it can be used as a pre-sedation cannabis screening tool.