

# INEBRIA

International Network on  
Brief Interventions for Alcohol  
Problems.



# Standard Joint Unit: a new tool for assessing risky use

Addictions Research Group Clinic



Funding by:



Key concepts

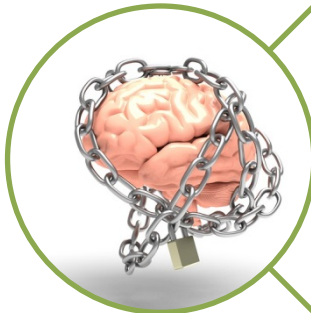
# Cannabis key concepts

Risky use



Third most consumed drug worldwide

SJU



Its consumption impacts on health (mental, physical and social)

SJU as quantitative criteria

Next Step



Legal status and social perception is shifting from ilegalitization/high risk perception to regularization/low risk perception

Conclusions

# What did we learn about other legal/low risk perception drugs?

Key concepts

Risky use

SJU

SJU as quantitative criteria

Next Step

Conclusions

## Universal prevention (3 best buys)

1. Increase price (taxes, minimum price for unit, etc.)
2. Forbid marketing
3. Limit availability

## Targeted prevention

1. Early identification of risky users and mild/moderate problematic users
2. Brief Interventions

Key concepts

# Who is a risky user?

Risky use

## WHO definition:

A pattern of substance use that increases the risk of harmful consequences for the user. Some would limit the consequences to physical and mental health (as in harmful use); some would also include social consequences. In contrast to harmful use, hazardous use refers to patterns of use that are of public health significance despite the absence of any current disorder in the individual user.

SJU

SJU as quantitative criteria

Next Step

Conclusions

## Operational definition



# Questionnaires and other instruments fail to identify risky cannabis users because...

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doi:10.1017/S0033291714002463

REVIEW ARTICLE

## Assessment of cannabis use disorders: a systematic review of screening and diagnostic instruments

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**Background.** Cannabis use and misuse have become a public health problem. There is a need for reliable screening and assessment tools to identify harmful cannabis use at an early stage. We conducted a systematic review of published instruments used to screen and assess cannabis use disorders.

**Method.** We included papers published until January 2013 from seven different databases, following the PRISMA guidelines and a predetermined set of criteria for article selection. Only tools including a quantification of cannabis use and/or a measurement of the severity of dependence were considered.

**Results.** We identified 34 studies, of which 25 included instruments that met our inclusion criteria: 10 scales to assess cannabis use disorders, seven structured interviews, and eight tools to quantify cannabis use. Both cannabis and substance use scales showed good reliability and were validated in specific populations. Structured interviews were also reliable and showed good validity parameters. Common limitations were inadequate time-frames for screening, lack of brevity, undemonstrated validity for some populations (e.g. psychiatric patients, female gender, adolescents), and lack of relevant information that would enable routine use (e.g. risky use, regular users). Instruments to quantify consumption did not measure grams of the psychoactive compounds, which hampered comparability among different countries or regions where tetrahydrocannabinol concentrations may differ.

**Conclusions.** Current instruments available for assessing cannabis use disorders need to be further improved. A standard cannabis unit should be studied and existing instruments should be adapted to this standard unit in order to improve cannabis use assessment.

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**Key words:** Assessment, cannabis, instruments, screening, THC.

1. Too long
2. Not appropriate timeframe (< 12m)
3. Lack of data for different populations
4. **Do not take into account quantity/frequency (risky use)**

Key concepts

Risky use

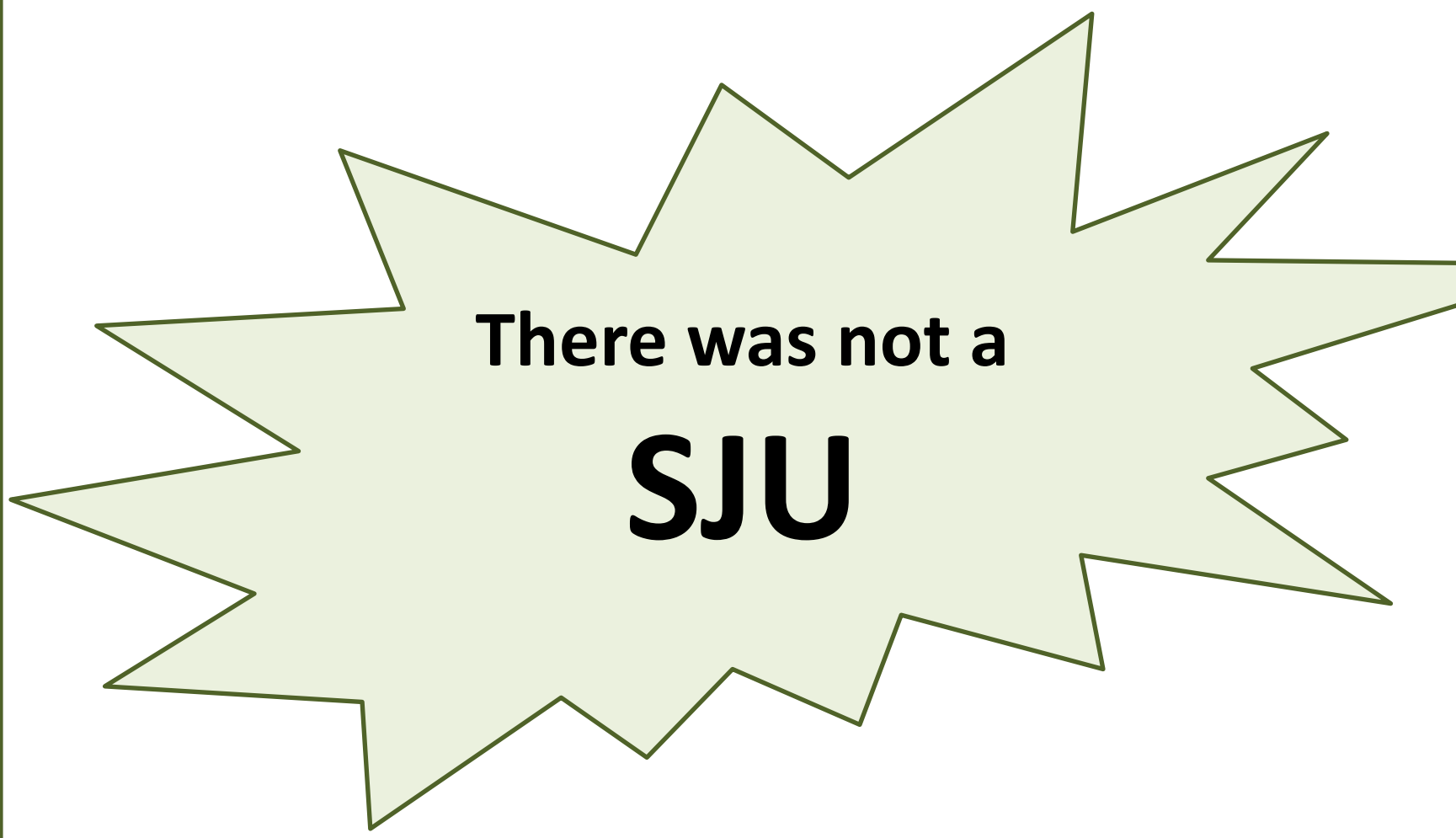
SJU

SJU as quantitative criteria

Next Step

Conclusions

Key concepts
Risky use
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**There was not a  
SJU**

Key concepts

Risky use

# Standard Joint Unit

# Preliminary risky use criteria

# Risky use criteria proposal

Drug and Alcohol Dependence 176 (2017) 100–116

Contents lists available at ScienceDirect

**Drug and Alcohol Dependence**

journal homepage: www.elsevier.com/locate/drugalcdep

Full length article

**The Standard Joint Unit**

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**ARTICLE INFO**

**Keywords:** Cannabis; Cannabinoids; Cannabidiol; Tetrahydrocannabinol (THC); Risk factors; Standardized; Standardized Joint Unit (SJU)

**Abstract:** Reliable data on cannabis quantities is required to improve assessment of cannabis consumption for epidemiological analysis and clinical assessment, consequently a Standard Joint Unit (SJU) based on quantity of 9-tetrahydrocannabinol (9-THC) has been established. Methodology: Naturalistic study of a convenience sample recruited from February 2015–June 2016 in universities, leisure spaces, mental health services and cannabis clubs in Barcelona. Adults reporting cannabis use in the last 90 days, without cognitive impairment or language barriers, answered a questionnaire on cannabis use and were asked to draw a joint to further determine their 9-THC and Cannabidiol (CBD) content. Results: 492 participants drawn 315 valid joints. Consumers were on average 29 years old, mostly men (75%), single (55%), with at least secondary studies (77%) and in active employment (63%). Marijuana joints (N = 232) contained a median of 6.36 mg of 9-THC (interquartile range = 0.98–16.22) and 6.02 mg of CBD (IQR = 0.26). Hashish joints (N = 85) a median of 734 mg of 9-THC (IQR = 10.61) and 3.24 mg of CBD (IQR = 3.21). Participants rolled 4 joints per gram of cannabis and paid 56 per gram (median values). Conclusion: Consistent 9-THC content in joints lead to a SJU of 7 mg of 9-THC, the integer number closest to the median value shared by both cannabis types, independently of consumption or hashish, 1 SJU = 1 joint = 6.32 mg of cannabis = 7 mg of 9-THC. For CBD, only hashish SJU contained relevant levels. Similarity to the Standard Drink Unit for alcohol, the SJU is useful for clinical, epidemiological and research purposes.

Research Report

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**Quantitative Criteria to Screen for Cannabis Use Disorder**

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**Keywords:** Cannabis; Risky use; Cutoff criteria; Cannabis use disorder

**Abstract:** The Standard Joint Unit (1 SJU = 7 mg of 9-Tetrahydrocannabinol) simplifies the exploration of risky patterns of cannabis use. This study proposes a preliminary quantitative cutoff criterion to screen for cannabis use disorder (CUD). **Methodology:** Socio-demographical data and information on cannabis quantities, frequency of use, and risk for CUD (measured with the Cannabis Abuse Screening Test (CAST)) of cannabis users recruited in Barcelona from February 2015 to June 2016 were collected. CAST scores were categorized into low, moderate, and high risk for CUD.

**Results:** Participants (N = 473) were on average 29 years old (SD = 10), men (77%), and single (54.6%), with an average of 4 joints per smoking day, 62.5% consumed cannabis almost every day. Risk for CUD is 0.46% low, 23.27% moderate, and 76.27% high increased significantly with more frequency and quantities consumed. The ROC analysis suggests 1.2 SJU per day as a cutoff criterion to screen for at least moderate risk for CUD (sensitivity 90.4%, specificity 63.6%). **Conclusion:** Frequency and quantity should be considered when exploring cannabis risks. A 1 SJU per day is proposed as a preliminary quantitative-based criterion to screen users with at least a moderate risk for CUD.

- Step 1: Systematic review of Systematic reviews and experts consensus
- Step 2: Pilot Study
- Step 3: Survey
- Step 4: Experts consensus

Next Step

Conclusions



Key concepts

Risky use

SJU

SJU as quantitative criteria

Next Step

Conclusions

“Explore the possibility of constructing a **standardized dose similar to that for alcohol** (the standard drink), tobacco (a cigarette), or opioids (morphine milligram equivalents) for researchers to employ in analyzing use and for users to understand their consumption”

National Institute on Drug Abuse

RECOMMENDATIONS FOR  
NIDA'S CANNABIS POLICY  
RESEARCH AGENDA

REPORT FROM THE  
CANNABIS POLICY RESEARCH WORKGROUP

February 6, 2018

NATIONAL ADVISORY COUNCIL ON DRUG ABUSE





Key  
concepts

Risky use

SJU

SJU as  
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criteria

Next Step

Conclusions



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## Drug and Alcohol Dependence

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Full length article

### The Standard Joint Unit



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#### ARTICLE INFO

##### Keywords:

Cannabis  
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Standard unit  
Prevention  
Metrics

#### ABSTRACT

**Objective:** Reliable data on cannabis quantities is required to improve assessment of cannabis consumption for epidemiological analysis and clinical assessment, consequently a Standard Joint Unit (SJU) based on quantity of 9-Tetrahydrocannabinol (9-THC) has been established.

**Methodology:** Naturalistic study of a convenience sample recruited from February 2015–June 2016 in universities, leisure spaces, mental health services and cannabis clubs in Barcelona. Adults, reporting cannabis use in the last 60 days, without cognitive impairment or language barriers, answered a questionnaire on cannabis use and were asked to donate a joint to further determine their 9-THC and Cannabidiol (CBD) content.

**Results:** 492 participants donated 315 valid joints. Donators were on average 29 years old, mostly men (77%), single (75%), with at least secondary studies (73%) and in active employment (63%). Marijuana joints (N = 232) contained a median of 6.56 mg of 9-THC (Interquartile range – IQR = 10,22) and 0.02 mg of CBD (IQR = 0.02); hashish joints (N = 83) a median of 7.94 mg of 9-THC (IQR = 10,61) and 3.24 mg of CBD (IQR = 3.21). Participants rolled 4 joints per gram of cannabis and paid 5€ per gram (median values).

**Conclusion:** Consistent 9-THC-content in joints lead to a SJU of 7 mg of 9-THC, the integer number closest to the median values shared by both cannabis types. Independently if marijuana or hashish, 1 SJU = 1 joint = 0.25 g of cannabis = 7 mg of 9-THC. For CBD, only hashish SJU contained relevant levels. Similarly to the Standard Drink Unit for alcohol, the SJU is useful for clinical, epidemiological and research purposes.

Key concepts

Risky use

SJU

SJU as quantitative criteria

Next Step

Conclusions

## ➤ Current users:

- Mental health
- Universities
- Cannabis associations
- Leisure

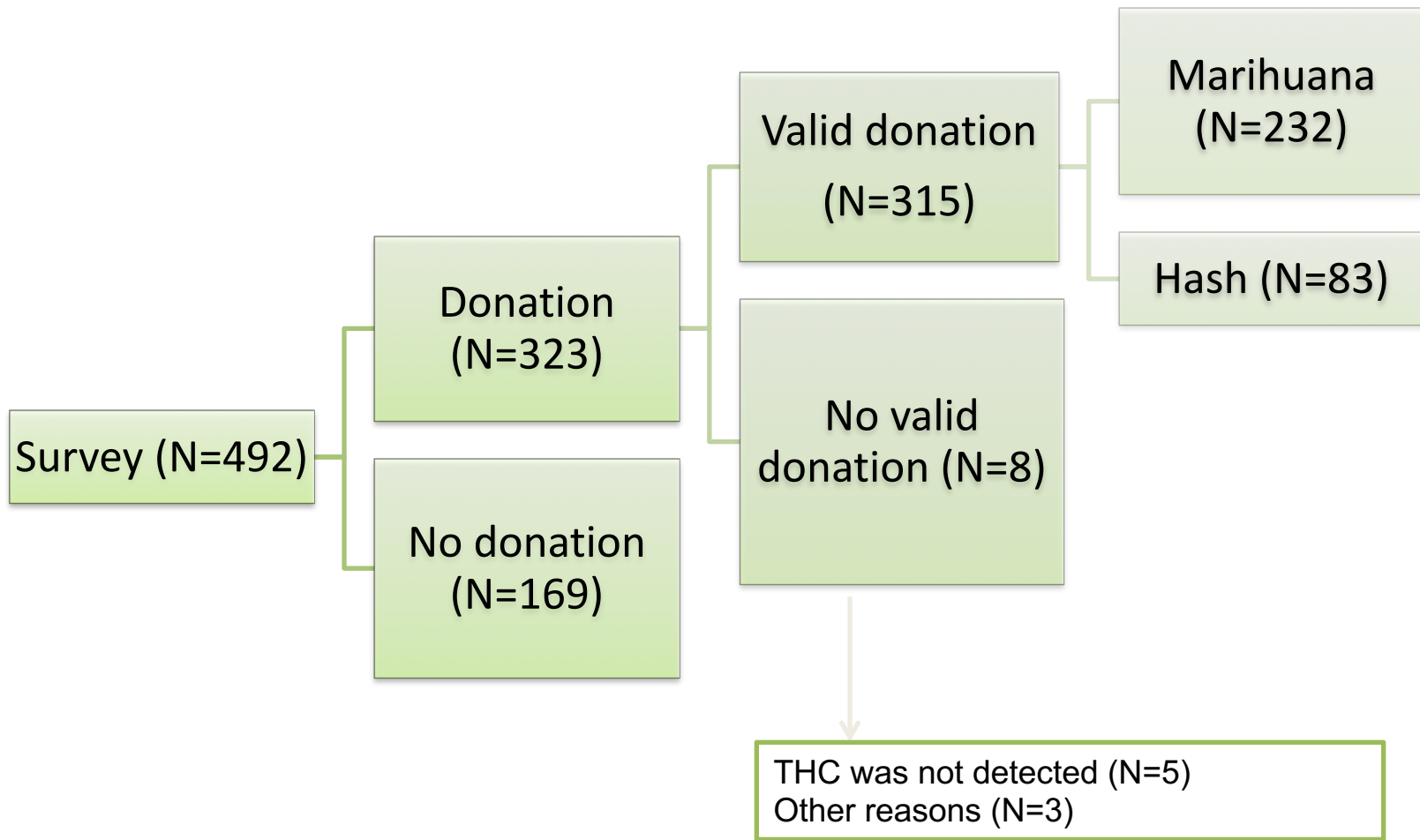
## ➤ Tools:

1. Ad hoc survey
2. Joint donation

**Inclusion criteria:** >17 years old, at least one consumption in the last two months  
**Exclusion criteria:** language restrictions, sever cognitive impairment

**N=328 joints**

Key concepts
Risky use
SJU
SJU as quantitative criteria
Next Step
Conclusions



Key concepts
Risky use
<b>SJU</b>
SJU as quantitative criteria
Next Step
Conclusions

77% men

63% working

29 years old  
(DE 10)

75 % single



Key  
concepts

Risky use

SJU

SJU as  
quantitative  
criteria

Next Step

Conclusions

## Consumption pattern

- **Type**
  - **Marihuana (74%)**
    - Cannabis association (51%)
    - Black market (30%)
    - Self-made (19%)
  - **Hash (24%)**
- **Tobacco: 50% (average)**
- **Same preparation every time: 66%**
- **Sharing use: 45%**
- **> 20 days of use during the last month: 82%**
- **> 3 times per week: 84%**
- **Joint per day: mean of 3 (IQR 3,5)**

Key concepts
Risky use
<b>SJU</b>
SJU as quantitative criteria
Next Step
Conclusions

		<b>Marihuana</b>	<b>Hash</b>	
		<b>(N=232)</b>	<b>(N=83)</b>	
<b>Grams per joint</b>	P25	0,20	0,22	
	Median	0,26	0,25	<b>≈ 0,25 g</b>
	P75	0,33	0,32	
<b>Euros per joint</b>	P25	0,99	0,80	
	Median	1,26	1,00	<b>≈ 1 €</b>
	P75	1,77	1,43	

Key concepts
Risky use
SJU
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Next Step
Conclusions

		<b>Marihuana (N=232)</b>	<b>Hash (N=83)</b>
		<b>mg</b>	
<b>9-THC per joint</b>	<b>P25</b>	2,18	3,50
	<b>Median</b>	6,56	7,94
	<b>P75</b>	12,79	13,72
<b>CBD per joint</b>	<b>P25</b>	0,02	1,49
	<b>Median</b>	0,02	3,24
	<b>P75</b>	0,04	4,70

<10% outliers

Marihuana : N=15  
Hash : N=5



Key  
concepts

Risky use

SJU

**1 UPE = 7mg 9-THC**

SJU as  
quantitative  
criteria

1 UPE = 1 joint = 0,25g cannabis = 1 € = 7mg 9-THC

Next Step

Conclusions

Key  
concepts

Risky use

SJU

SJU as  
quantitative  
criteria

Next Step

Conclusions

## Research Report

European  
Addiction  
Research

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# Quantitative Criteria to Screen for Cannabis Use Disorder

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### Keywords

Cannabis · Risky use · Cutoff criteria · Cannabis use disorder

### Abstract

**Introduction:** The Standard Joint Unit (1 SJU = 7 mg of 9-Tetrahydrocannabinol) simplifies the exploration of risky patterns of cannabis use. This study proposes a preliminary quantitative cutoff criterion to screen for cannabis use disorder (CUD). **Methodology:** Socio-demographical data and information on cannabis quantities, frequency of use, and risk for CUD (measured with the Cannabis Abuse Screening Test (CAST) of cannabis users recruited in Barcelona (from February 2015 to June 2016) were collected. CAST scores were categorized into low, moderate, and high risk for CUD,

based on the SJU consumed and frequency. Receiver operating characteristic (ROC) analysis related daily SJU with CUD. **Results:** Participants ( $n = 473$ ) were on average 29 years old ( $SD = 10$ ), men (77.1%), and single (74.6%). With an average of 4 joints per smoking day, 82.5% consumed cannabis almost every day. Risk for CUD (9.40% low, 23.72% moderate, 66.88% high) increased significantly with more frequency and quantities consumed. The ROC analyses suggest 1.2 SJU per day as a cutoff criterion to screen for at least moderate risk for CUD (sensitivity 69.4%, specificity 63.6%). **Conclusion:** Frequency and quantity should be considered when exploring cannabis risks. A 1 SJU per day is proposed as a preliminary quantitative-based criterion to screen users with at least a moderate risk for CUD.

Key concepts

Risky use

SJU

SJU as quantitative criteria

Next Step

Conclusions

## Risk according to Cannabis Abuse Screening Test

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	Low risk	Moderate risk	High risk
<b>% of participants</b>	9,4 %	23,7 %	66,9 %

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Key concepts

**Table 1.** Socio-demographical variables and consumption patterns of cannabis users presenting low risk, moderate risk, and high risk of CUD, categorized by the CAST

	Low risk, n (%)	Moderate risk, n (%)	High risk, n (%)	Total, n (%)	Significant, p value
<b>Gender</b>					0.194
Men	29 (8.0)	88 (24.3)	245 (67.7)	362 (100.0)	
Women	15 (13.5)	23 (20.7)	73 (65.8)	111 (100.0)	
<b>Marital status</b>					0.492
Single	33 (9.2)	85 (23.7)	241 (67.1)	359 (100.0)	
In a couple or married	11 (12.2)	20 (22.2)	59 (65.6)	90 (100.0)	
Separated, divorced, widower or other	0 (0.0)	6 (25.0)	18 (75.0)	24 (100.0)	
<b>Highest educational level achieved</b>					0.099
Basic studies or unfinished basic studies	1 (2.4)	10 (23.8)	31 (73.8)	42 (100.0)	
Secondary studies	29 (8.6)	75 (22.3)	232 (69.0)	336 (100.0)	
Higher studies	14 (14.7)	26 (27.4)	55 (57.9)	95 (100.0)	
<b>Working status</b>					0.151
Working	32 (11.9)	63 (23.4)	174 (64.7)	269 (100.0)	
Permanent disability	0 (0.0)	2 (14.3)	12 (85.7)	14 (100.0)	
Without employment and income	12 (6.3)	46 (24.2)	132 (69.5)	190 (100.0)	
<b>Frequency of consumption in the last 30 days</b>					0.000
0-9 days	28 (39.4)	17 (23.9)	26 (36.6)	71 (100.0)	
10-19 days	6 (13.0)	16 (34.8)	24 (52.2)	46 (100.0)	
>20 days	10 (2.8)	78 (22.0)	267 (75.2)	355 (100.0)	
<b>Cannabis type consumed</b>					0.771
Marihuana	32 (9.5)	83 (24.6)	222 (65.9)	337 (100.0)	
Hashish	10 (8.2)	26 (21.3)	86 (70.5)	122 (100.0)	
Other	2 (14.3)	2 (14.3)	10 (71.4)	14 (100.0)	
<b>Age</b>					0.014
Average (SD)	26 (7)	29 (11)	30 (10)	29 (10)	
<b>Number of joints consumed per smoking day in the last month</b>					0.000
Average (SD)	1.65 (1.14)	2.51 (1.89)	4.75 (3.71)	3.93 (3.40)	

CAST, Cannabis Abuse Screening Test; CUD, Cannabis Use Disorder.

Conclusions

Key concepts

Risky use

SJU

SJU as quantitative criteria

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Conclusions

**Table 2.** Ordinal regression analysis results for preselected variables and risk categories defined by the CAST

Variables	OR	95% CI (IL)	95% CI (UL)
Gender			
Men	0.9	0.55	1.47
Women	Reference		
Highest educational level achieved			
Basic studies or less	0.95	0.38	2.38
Secondary studies	1.36	0.82	2.25
Higher studies	Reference		
Frequency of consumption in the last 30 days			
0–9 days	0.22	0.12	0.38
10–19 days	0.6	0.32	1.14
>20 days	Reference		
Age	1.000	0.980	1.020
Number of joints consumed per smoking day in the last month	1.440	1.260	1.640

CAST, Cannabis Abuse Screening Test; IL, inferior limit; UL, upper limit.

Key concepts

Risky use

SJU

SJU as quantitative criteria

Next Step

Conclusions

**Table 3.** ROC analysis results for daily SJU consumed and CAST scores, suggesting an optimal cut-off criterion of 1.2 SJU to screen for moderate-high risk of CUD

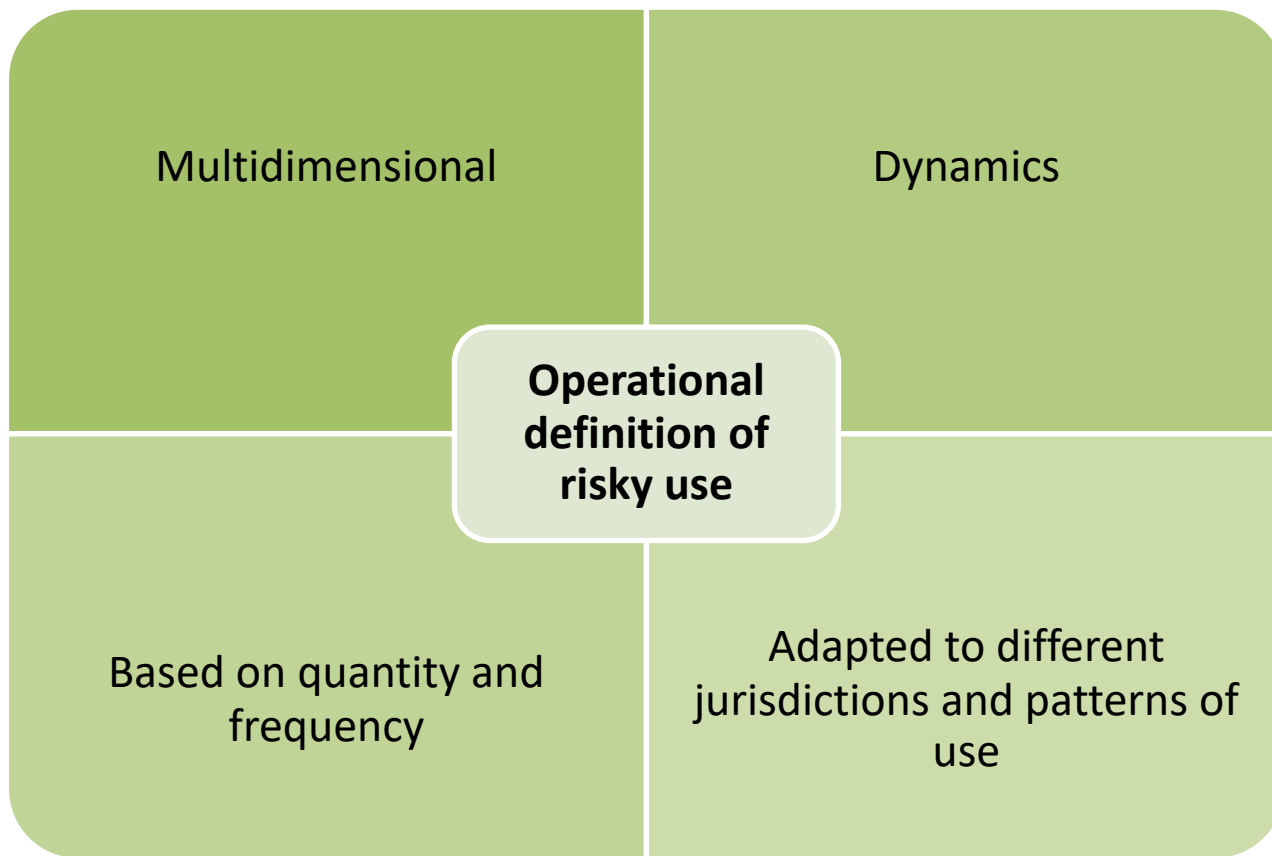
Coordinates of the curve		
Test result variable(s): daily SJU		
Positive if greater than or equal to <sup>a</sup>	Sensitivity	1 – specificity
1.1268	0.701	0.455
1.1322	0.698	0.455
1.1451	0.694	0.455
1.1644	0.694	0.409
1.1757	0.694	0.364
1.1797	0.690	0.364
1.1881	0.687	0.364
1.2309	0.683	0.364
1.2970	0.679	0.364
1.3368	0.679	0.318
1.3650	0.675	0.318
1.3868	0.672	0.318
1.3920	0.668	0.318
1.4067	0.668	0.273
1.4351	0.664	0.273
1.4591	0.660	0.273
1.4731	0.660	0.227
1.4871	0.657	0.227
1.5070	0.653	0.227

**Optimal cut-off: 1,2 joints/day**

<sup>a</sup> The smallest cutoff value is the minimum observed test value minus 1, and the largest cutoff value is the maximum observed test value plus 1. All the other cutoff values are the averages of two consecutive ordered observed test values.

ROC, receiver operating characteristic; SJU, Standard Joint Units; CAST, Cannabis Abuse Screening Test; CUD, Cannabis Use Disorder.

Key concepts
Risky use
SJU
SJU as quantitative criteria
Next Step
Conclusions





Key concepts

Risky use

SJU

SJU as quantitative criteria

Next Step

Conclusions

**PROSPERO**  
International prospective register of systematic reviews



A systematic review of systematic reviews of cannabis-related harm  
*Hugo López-Pelayo, Jürgen Rehm, Clara Oliveras, Laia Miquel, Mercè Balcells, Eugènia Campeny, Antoni Gual*

**Citation**

Hugo López-Pelayo, Jürgen Rehm, Clara Oliveras, Laia Miquel, Mercè Balcells, Eugènia Campeny, Antoni Gual. A systematic review of systematic reviews of cannabis-related harm. PROSPERO 2018 CRD42018089130 Available from: [http://www.crd.york.ac.uk/PROSPERO/display\\_record.php?ID=CRD42018089130](http://www.crd.york.ac.uk/PROSPERO/display_record.php?ID=CRD42018089130)

**Review question**

Primary question:  
What are the harms related to cannabis use?

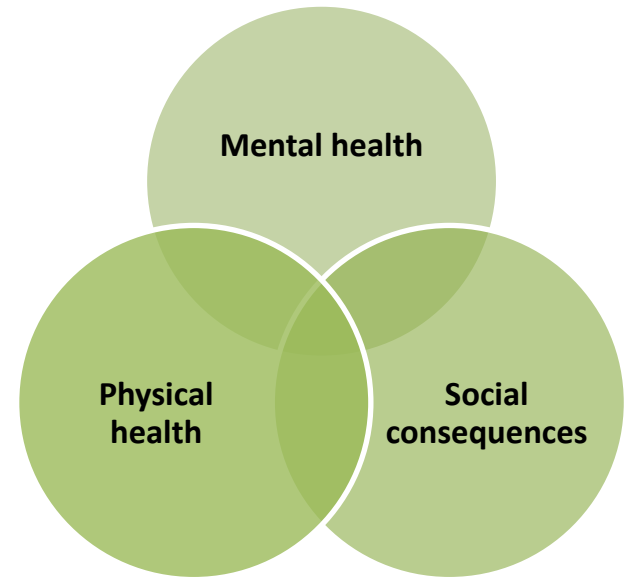
Secondary questions:

- What are the social harms related to cannabis use?
- What are the mental health harms related to cannabis use?
- What are the physical health harms related to cannabis use?
- Are there any harms other than mental health, physical health or social harms related to cannabis use?

**Searches**

The databases ScienceDirect, PubMed, EBM Reviews, the Cochrane Database of Systematic Reviews; the Cochrane Central Register of Controlled Trials (CENTRAL), and ACP Journal Club.

Dates: no restrictions will be imposed on the publication dates, up to a finishing date of 25th February 2018.



Key concepts

Risky use

SJU

SJU as quantitative criteria

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Conclusions



**Pilot study (n=40) → Final sample (n=4000)**

Key concepts
Risky use
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Conclusions

Operational definition (OD) of risky use is required in order to implement targeted prevention

First attempt (but limited) of OD has been 1,2 SJU per day (aprox 1 SJU/day)

OD based on F and Q is feasible throught SJU (7 mg THC)

Multidimensional, dynamic and adaptable OD of risky use is feasible (and it's coming)



The perception that cannabis is a safe drug is a mistaken reaction to a past history of exaggeration of its health risks

Wayne Denis Hall  
**(Born 1951)**  
Director of the Centre for Youth  
Substance Abuse Research at  
the University of Queensland.

**For more details about Addictions Research  
Group Clinic:**

