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Changes in cannabis consumption during the global COVID-19 lockdown: the international COVISTRESS study

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In review

64 **Abstract**

65 Introduction: COVID-19 lockdown measures have been sources of both potential stress and
66 possible psychological and addiction complications. A lack of activity and isolation during
67 lockdown are among the factors thought to be behind the growth in the use of psychoactive
68 substances and worsening addictive behaviors. Previous studies on the pandemic have attested
69 to an increase in alcohol consumption during lockdowns. Likewise, data suggest there has also
70 been a rise in the use of cannabis, although it is unclear how this is affected by external factors.
71 Our study used quantitative data collected from an international population to evaluate changes
72 in cannabis consumption during the lockdown period between March and October, 2020. We
73 also compared users and non-users of the drug in relation to: 1) sociodemographic differences,
74 2) emotional experiences, and 3) the information available and the degree of approval of
75 lockdown measures.

76 Methods: An online self-report questionnaire concerning the lockdown was widely
77 disseminated around the globe. Data was collected on sociodemographics and how the rules
78 imposed had influenced the use of cannabis and concerns about health, the economic impact of
79 the measures and the approach taken by government(s).

80 Results: 182 respondents consumed cannabis before the lockdown versus 199 thereafter. The
81 mean cannabis consumption fell from 13 joints per week pre-lockdown to 9.75 after it
82 ($p < 0.001$). Forty-nine respondents stopped using cannabis at all and 66 admitted to starting to
83 do so. The cannabis users were: less satisfied with government measures; less worried about
84 their health; more concerned about the impact of COVID-19 on the economy and their career;
85 and more frightened of becoming infected in public areas. The risk factors for cannabis use
86 were: age (OR=0.96); concern for physical health (OR=0.98); tobacco (OR=1.1) and alcohol
87 consumption during lockdown (OR=1.1); the pre-lockdown anger level (OR=1.01); and
88 feelings of boredom during the restrictions (OR=1.1).

89 Conclusion: In a specific sub-population, the COVID-19 lockdown brought about either an end
90 to the consumption of cannabis or new use of the drug. The main risk factors for cannabis use
91 were: a lower age, co-addictions and high levels of emotions.

92 Key words: COVID-19, lockdown, cannabis, addiction

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95

96 **Introduction**

97 The COVID-19 pandemic started in the Chinese city of Wuhan in December 2019 and
98 subsequently spread globally (1). Then without a vaccine or any effective treatments,
99 governments worldwide responded by implementing lockdown measures that aimed to limit
100 the spread of the virus by restricting population movement and social contact (2). The
101 introduction and economic consequences of these measures and uncertainty about the course
102 of the epidemic have been sources of stress and social isolation (3).

103 In many countries, cannabis is one of the psychotropic drugs consumed the most (4), with
104 research into its use linking it to addictive behaviors (5). Taking psychoactive substances (and
105 consequential addictive behaviors) can be a coping mechanism for individuals experiencing
106 stress or negative moods (6), as well as for those who are unable to face difficult situations and,
107 as a result, reduce their social interactions (7–11). Substance use and addictive behaviors may
108 therefore be seen as a remedy for boredom (12,13) and social isolation (14).

109 Cannabis can also be used to reduce emotional reactivity. Indeed, its consumption is associated
110 with the activation of cannabinoid receptors that mediate the neural processes underlying
111 emotional regulation and stress responsivity (15). Moreover, the endocannabinoid system also
112 counteracts the neurochemicals involved in the use of other substances, including those playing
113 a part in emotional regulation. The signals of cannabinoid receptors, for example, might
114 counteract the neurochemical imbalance associated with alcohol withdrawal (16).

115 These factors are all worthy of consideration when examining the impact of COVID-19
116 lockdowns on cannabis use. Previous studies have provided interesting data and attested to the
117 effects of these lockdowns on use of the drug, with some of them (e.g., Rolland et al., 17)
118 reporting an increase in cannabis consumption in lockdown periods. Unfortunately, however,
119 that study was only conducted among a French population and does not analyze changes in
120 consumption levels. In Belgium, meanwhile, Vanderbruggen et al. (11) found no statistically

121 significant differences between the number of joints smoked per day before and during
122 lockdown. Nevertheless, the value of this study is limited by its recruitment of a higher than
123 ideal proportion of educated women and the overrepresentation of healthcare workers.
124 Conversely, a study by Cousijn et al. (18) described an increase in lockdown cannabis use, but
125 only involved a Dutch population. Finally, a survey by the European Monitoring Centre for
126 Drugs and Drug Addiction (EMCDDA) found that occasional users had either stopped, or at
127 least reduced, their consumption of the drug during lockdown. The levels of consumption by
128 heavy users had, however, increased, with the drug employed to relieve anxiety and boredom
129 (19). Nevertheless, this research mainly involved young respondents, with an average age of
130 29-years, while participants from Estonia, Spain, Italy and Finland accounted for 50% of the
131 study's population, the majority of which was male (19).

132 Emotions play a critical role in the use of substances. Indeed, impairments in the regulation of
133 emotion contribute to the development and severity of substance use disorders (SUDs) (and
134 addictive behaviors), and are also associated with neurobiological damage consisting of
135 increased amygdala and insula activation (20) and a weakening of the capacity to recognize
136 emotions (alexithymia) (21,22). Moreover, substances can be used to regulate emotion. Animal
137 models, for example, have suggested that a moderate intake of alcohol reduces emotionality
138 and facilitates adaptive responses and problem solving (23,24).

139 The COVID-19 pandemic induced emotional states that led to people becoming less happy and
140 more anxious, fearful and angry (25). In addition, studies have reported an increase in alcohol
141 consumption during lockdowns (26,27), which may be consistent with the theory that
142 substances are used to regulate emotions. Consequently, it could be hypothesized that the
143 changes induced by lockdown measures may have affected the population's use of drugs, with
144 those suffering from an SUD and/or behavioral addictions particularly vulnerable (28) due to

145 the increase in the consequences of, and behavior caused by, consumption (e.g., alcohol could
146 impact emotional and behavioral reactivity) (23,24).

147 Despite their interesting results, the aforementioned studies (11,17–19) provide limited data on
148 the association between emotional changes and cannabis consumption, in particular on the role
149 played by these emotions in the use of substances. In order to remedy this, our research uses
150 quantitative data collected from a population recruited internationally to evaluate changes in
151 the consumption of cannabis during lockdown. It also compares users and non-users of the drug
152 in relation to: 1) sociodemographic differences; 2) emotional experiences; and 3) the
153 information available on and degree of approval of measures introduced during the lockdown
154 period between March and October, 2020.

155

156 **Method**

157

158 **Study design**

159 We conducted an international, prospective, observational study of a general population in the
160 period March to October, 2020 (hereafter: the lockdown). A computerized, anonymous
161 questionnaire, translated into ten languages, was used for this purpose. The main academic
162 partners in this research form “The COVISTRESS network” and are named at the start of the
163 paper. This list of contributors to the project is regularly updated on the website
164 <https://covistress.org/contacts.html> and currently comprises 21 main partner-countries and 70
165 researchers, across five continents. The questionnaire that forms the basis of the study was
166 distributed electronically to facilitate its dissemination. The research has been given the
167 required ethics approval and is registered on ClinicalTrials.gov (NCT04538586) (3,29).

168

169 **Inclusion criteria**

170 The international COVISTRESS network was used to distribute the questionnaire to
171 respondents from the general population, with no country, gender, occupation or disease
172 distinctions made.

173

174 **Outcomes**

175 We evaluated the consumption of cannabis before and after the introduction of lockdown
176 measures. The primary outcome, i.e., cannabis consumption, was measured based on the
177 number of joints smoked per week. To this end, we asked a single question (how many “joints”
178 (of cannabis) do you smoke per week?) twice (before the pandemic/during the first lockdown).

179 The secondary outcomes were: sociodemographics (age, sex, level of education, country of
180 origin); alcohol consumption, based on the number of drinks per week; tobacco consumption,
181 i.e., the number of cigarettes smoked a day; worries (about health, the impact of COVID-19 on
182 the economy and the healthcare system); the information available to the respondents and the
183 degree of approval of the measures introduced during the lockdown (distrust of government
184 restrictions or level of confidence); and emotions (peaceful and angry, sad and happy, calm and
185 excited, busy and bored). Sociodemographic data were obtained via multiple-choice questions.
186 Worries and emotions (as above) were retrieved using visual analogue scales (VASs), i.e., a
187 non-calibrated horizontal line ranging from a minimum (0) to a maximum (100) (30–32).

188

189 **Statistical analyses**

190 The analyses of the quantitative data were conducted using the means and standard deviations
191 or the median and the interquartiles based on the distribution of the responses to the
192 questionnaire. Parametric tests (T-test) were employed to perform the comparative analyses.

193 The qualitative variables were examined with the Chi-squared test. The significance threshold
194 was set at $p < 0.05$. Pearson correlations were used to measure the associations between the
195 variables. The links between cannabis consumption during the lockdown period and the
196 variables employed in the questionnaire were evaluated using multinomial logistic regression.
197 The responses determined by the comparative analyses to be significantly different between the
198 cannabis users and non-users were then introduced into the model (33). The sociodemographic
199 variables (gender, age, sociodemographic status, level of education, country of origin) were
200 integrated in the analysis as confounding factors. The statistical significance threshold was set
201 at $p < 0.05$. The analyses were carried out with the Jamovi statistical program, version 1.2 (the
202 Jamovi project, 2020) and the R studio software package, version 3.6 (R Core Team, 2019).

204 **Results**

206 **Sociodemographic data**

207 A total of 7084 people answered the survey questions and were included in the study (Figure
208 1). Of these respondents, 4875 (69%) were female and 2209 (31%) male. The mean \pm standard
209 deviation (SD) age was 42.3 ± 13.3 years. The participants lived in 57 countries (6572 in
210 Europe, 218 in Asia, 167 in America, 57 in Africa, four in Oceania and 65 non-specified). In
211 terms of education: 667 (9%) were educated to a level below a bachelor's degree; 907 (13%)
212 had the equivalent of such a degree; 2645 (37%) had a license degree; 1958 (28%) had a
213 master's degree; and 907 (13%) were educated above this level.

215 **Cannabis consumption**

216 Prior to and during the lockdown, 182 (2.5%) and 199 (2.8%) respondents, respectively, were
217 cannabis users. Men comprised 52% of the pre-lockdown consumers of the drug. The mean \pm

218 SD age of the cannabis-using respondents was 35 ± 12.3 years and they had an educational
219 level of 3.9 years (± 1.1). The mean number of joints smoked per week prior to the lockdown
220 was 13 ± 4.1 (median=13) versus 9.75 ± 7.1 (median=13) during it. This difference was
221 significant ($p < 0.001$). The differential between the number of cannabis users before and after
222 the lockdown is due to 49 respondents who ended their cannabis consumption and 66 non-users
223 who started to consume it. The details of the cannabis use of each group, including their levels
224 of consumption of tobacco and alcohol, are set out in Table 1.

225 The mean cannabis consumption before the lockdown was 12.8 joints per week ± 4.0
226 (median=13) for the male respondents and 13.3 ± 4.1 (median=13) for the female ($p = 0.21$).
227 These amounts during the lockdown were 9.5 joints per week ± 7.0 (median=8) for the men
228 and 10 ± 4.1 (median=10) for the women ($p = 0.13$). Figure 2 shows the changes in consumption
229 of each group and the effects these changes had on the male and female participants.

230

231 **Comparison of cannabis users and non-users during the lockdown**

232 The lockdown cannabis users ($n = 199$) were 37.6 years old ± 13.1 versus 42.6 ± 13.3 years for
233 the non-users ($p < 0.001$). The former were: less satisfied with their government's restrictions
234 ($p < 0.05$); less concerned about their health ($p = 0.03$); more concerned about the impact of
235 COVID-19 on the economy ($p < 0.05$) and their career ($p < 0.05$); and more worried about
236 catching the disease in public areas ($p = 0.04$). Pre-lockdown, the cannabis users consumed, on
237 average, more alcohol (9.6 glasses per week ± 5.5) than the non-users (7.5 glasses per week \pm
238 6.2) ($p < 0.001$). This pattern continued during the lockdown, with the cannabis users drinking
239 more than the non-users: 9.7 units per week ± 5.5 versus 7.0 ± 6.2 . This difference is significant
240 ($p < 0.001$). Similarly, in the pre-lockdown period, the cannabis users consumed, on average,
241 more tobacco than the non-users - 6.5 cigarettes per day ± 6.1 versus 2.3 per day ± 5.3
242 ($p < 0.001$), respectively. This continued during the lockdown, with the cannabis users smoking

243 7.2 cigarettes per day \pm 6.9 and the non-users 2.3 per day \pm 5.4. This difference is also
244 significant ($p < 0.001$). Boredom levels were higher in the cannabis-user group both before and
245 during the lockdown: 21.1 ± 22.3 versus 19.1 ± 19.2 ($p < 0.001$), respectively; these figures for
246 the non-users were 51.2 ± 30.7 versus 40.4 ± 30.6 ($p < 0.001$). The study's other parameters did
247 not reveal any further differences between the groups, as reported in Table 1.

248

249 **Multivariate analysis**

250 The factors that had a significant association with cannabis consumption during the lockdown
251 were: age (OR=0.96, 95% CI: 0.95-0.98, $p < 0.001$); concern for physical health (OR=0.98, 95%
252 CI: 0.97-0.99, $p = 0.004$); tobacco consumption during the lockdown (OR=1.10, 95% CI: 1.07-
253 1.20, $p < 0.001$); alcohol consumption in the lockdown (OR=1.06, 95% CI: 1.03-1.09, $p = 0.003$);
254 the level of anger pre-lockdown (OR=1.01, 95% CI: 1.001-1.017, $p = 0.03$); and feeling bored
255 during the lockdown (OR=1.10, 95% CI: 1.06-1.14, $p = 0.02$).

256 The factors significantly associated with ending the consumption of cannabis were: smoking
257 tobacco pre-lockdown (OR=1.1, 95% CI: 1.01-1.14, $p = 0.01$) and concern about the economic
258 impact of the crisis (OR=0.98, 95% CI: 0.96-0.99, $p = 0.01$). The elements linked to new
259 cannabis use were: consuming alcohol before the lockdown (OR=1.05, 95% CI: 1.009-1.09,
260 $p = 0.01$) and feeling bored during it (OR=1.01, 95% CI: 1.003-1.02, $p = 0.006$). Concern for
261 health was negatively associated with starting to consume the drug (OR=0.98, 95% CI: 0.97-
262 0.99, $p = 0.005$).

263

264 **Discussion**

265 Our study aimed to document the impact of the COVID-19 lockdown measures in force from
266 March to October 2020 on cannabis consumption in an international population. The study's
267 results revealed that 2.5 to 2.8% of the respondents were cannabis users, which is consistent

268 with such data globally (34). The factor most associated with cannabis use during the lockdown
269 period was the consumption of other substances (tobacco and/or alcohol). The cannabis users
270 were also younger in age, less concerned about their health, experienced more angry feelings
271 pre-lockdown and were more bored during it.

272 The results also revealed that the cannabis-using group had greater distrust of government-
273 imposed measures. A link between the degree of suspicion of politics and cannabis
274 consumption has already been described in the literature (35). The low level of confidence in
275 this association in our study could be partially explained by the existence of a link between
276 addictive behavior and antisocial-personality traits (36,37), although we did not collect any data
277 that would enable this hypothesis to be accepted or rejected.

278 Our cannabis users reported being more worried about the impact of the pandemic on their
279 career and the economy more generally. The association between such a concern and cannabis
280 consumption reinforces the view that occupational physicians have an important role to play in
281 the prevention and management of addictive behavior; indeed, data is already available on
282 opportunities for motivational management in the workplace (38).

283 The part played by the environment is important in the development of addictive behaviors,
284 which are defined on the basis of a bio-psychosocial approach (39). The data in the literature
285 reveal a link between social isolation and the risk of developing addictions (40–42).
286 Consequently, in the context of social isolation associated with the lockdown, we expected to
287 see an increase in the amounts of cannabis consumed. In fact, there was a significant reduction
288 in the cannabis-using group. We hypothesized that this could partly be due to less access to the
289 drug, but the reduction was not homogenous, being explained by the actions of a sub-group of
290 49 individuals who stopped using cannabis at all; meanwhile, the quantities smoked by those
291 who continued to consume the drug remained stable. These outcomes indicate that levels of
292 vulnerability to the effects of lockdown measures differ, with some cannabis consumers having

293 a positive experience. Moreover, the lockdown measures may have affected the availability of
294 cannabis; indeed, social distancing might reasonably be expected to disrupt established methods
295 for supplying and distributing the drug. Nonetheless, some of our users moved to online
296 purchasing (43), while others may not have respected the restrictions as intended. This is,
297 however, only a hypothesis, and its premises could be differentially explained by underlying
298 factors like a change in income levels and/or the use of other/stronger drugs. Differences in the
299 lockdown legislation in force in the countries where the respondents live may also be a factor.
300 Indeed, the legality of cannabis use in some areas may have limited the effects of the lockdown
301 measures on the availability of the drug.

302 Other studies have demonstrated that bringing an end to cannabis use can have an effect on the
303 consumption of other substances. Consistent with this, our research identified an increase in
304 alcohol use in particular (44,45). However, there were no changes in the amounts of alcohol or
305 tobacco consumed by the group that stopped using the drug at all. Tobacco use pre-lockdown
306 was associated with an end to cannabis consumption during it: 47 of our cannabis users (26%)
307 did not consume tobacco before the lockdown, and it was these individuals who were less likely
308 to stop their use of the drug in the relevant period. Concern about the economic impact of the
309 health crisis was also a risk factor for continued cannabis use.

310 Conversely, a sub-group of 66 respondents started to smoke cannabis during the lockdown,
311 corresponding to 1% of those who did not use the drug before it. Drinking alcohol pre-lockdown
312 and feeling bored during it appeared to be risk factors for this. Boredom certainly seems to be
313 associated with use of the drug, but may not be the only explanation.

314 Despite these interesting results, our study has some limitations. A major issue relates to our
315 lack of screening for the duration of the lockdown, changes in income (before and after
316 lockdown), and the use of addictive drugs other than tobacco, alcohol and cannabis. These
317 factors may therefore also account for our findings. Specifically, controlling for the lockdown

318 duration (as a covariate of non-interest) is important. In addition, the failure to consider the
319 impact of a reduced income and the use of stronger drugs is an important limitation, as these
320 factors may account for why some in the cannabis-user group stopped using the drug during
321 the lockdown. A further limitation relates to the study's design, namely an online survey, which
322 may induce selection bias. Moreover, the design was used to collect data with which to establish
323 associations, but did not permit the identification of causal links. A "multiple time-point"
324 prospective observational study would be valuable for this purpose. Additionally, the natural
325 turnover between being a cannabis user or not is impossible to assess, and reaching robust
326 conclusions about the effects of the lockdown thus warrants further research. Another limitation
327 concerns the fact that the survey was not validated, although most of the other studies on
328 cannabis use ask a comparable question about consumption (46,47). Similarly, our
329 questionnaire did not produce data about addictive behavior. Indeed, the quantities of cannabis
330 consumed by our respondents did not support such a diagnosis. It would therefore have been
331 interesting to collect data relating to the DSM-5 criteria (48) in order to better characterize our
332 population. Nevertheless, our survey was addressed to the general population and was intended
333 to produce a wide variety of participants. This meant that decisions had to be made about what
334 questions to include in order to limit the amount of time required to answer them. Quality
335 assurance of the COVISTRESS questionnaire was ensured by the fact that only one
336 questionnaire was submitted per IP address. However, it is possible that the same participant
337 submitted several surveys from different IP addresses. Moreover, the study had a greater
338 proportion of females to males, but, unfortunately, it was not possible to control for this gender
339 imbalance. Finally, all of our reported ORs are very close to 1. Even though the analysis did
340 achieve statistical significance, the clinical impact should be confirmed in future research.

341

342 **Conclusion**

343 Our study reveals changes in cannabis consumption during the COVID-19 lockdowns imposed
344 from March to October, 2020. In particular, it highlights the existence of a specific sub-
345 population for whom the lockdown brought about either the end to or the start of cannabis
346 consumption. The results show that cannabis users can be characterized as having features
347 specific to them in terms of their concerns about public policies and work stress.
348 Acknowledging this could lead to a better provision of information and the use of targeted
349 support.

350

351

In review

352 **Table 1**

353 *Table 1. Presentation of the data for the overall group and the subgroups of cannabis users and non-users; n (%): number of*
 354 *individuals (percentage) or mean± standard-deviation.*

	Cannabis users					Non-users before and during lockdown n=6836	Users vs non- users during lockdown P-value
	Before lockdown n=182	Only before lockdown n=49	During lockdown (n= 199)		Total n=199		
			Before & during lockdown n=133	Only during lockdown n=66			
Gender, n male (%)	95 (52%)	25 (52%)	69 (52%)	46 (70%)	115 (61%)	6836 (69%)	0.61
Age in years	35±12.3	33.8±11.5	35.5±12.6	39.7±13.5	37.6±13.1	42.6±13.3	<0.001*
Level of education, year postgraduate?	3.9±1.1	3.8±1.2	4±1.1	4.3±1.2	4.15±1.1	4.2±1.2	0.29
Worries about health, VAS (0 to 100)	48.2±30.7	48.6±29.4	48.1±31.3	44.7±33.6	46.4±32.4	54.1±30.4	0.03*
Stress of covid, VAS (0 to 100)	55.5±31.2	55.4±30.9	55.6±31.4	57.8±30	56.7±30.7	57.7±29.9	0.53
Fatigue, VAS (0 to 100)	53.4±31.4	55.0±31.6	52.8±31.5	55.0±32.2	53.9±31.9	51.0±31.8	0.31
Anxiety - fear, VAS (0 to 100)	53.3±30.9	58±32.4	51.5±30.3	52.4±30.4	51.95±30.4	50.9±30.6	0.79
Good mood, VAS (0 to 100)	48±29.4	44.3±31.7	49.4±28.5	50.7±31.2	50.05±29.9	53.1±27	0.12
Worries about economic impact, VAS (0 to 100)	75.0±26	68.9±33.3	77.2±22.5	78±19.8	77.6±21.2	76.9±22.4	0.71
Worries re impact on healthcare system, VAS (0 to 100)	72.2±27	76.1±25.8	70.7±27.4	66.8±23.4	68.75±25.4	69.2±25	0.87
Satisfaction with government measures, VAS (0 to 100)	35.9±30.4	29.1±29.8	38.3±30.4	47.5±32.3	42.9±31.4	47.8±30.5	0.005*
Satisfaction with measures for businesses, VAS (0 to 100)	65.0±31.1	65.5±27.9	64.9±32.4	66.2±32.9	65.55±32.7	66.2±29	0.13
Smoking, n cigarettes/day							
<i>Before lockdown</i>	9.2±6.4	10.9±6.4	8.6±6.3	4.3±5.8	6.5±6.1	2.3±5.3	<0.001*
<i>During lockdown</i>	9.6±7.1	11.3±7.2	9.0±7.0	5.4±6.8	7.2±6.9	2.3±5.4	<0.001*
Alcohol, n units/week							
<i>Before lockdown</i>	9.3±5.9	8.2±6.4	9.7±5.7	9.4±5.3	9.6±5.5	7.5±6.2	<0.001*
<i>During lockdown</i>	8.9±6.3	7.2±6.6	9.5±6.1	9.9±4.9	9.7±5.5	7.0±6.2	<0.001*
Cannabis, n of joints/week							
<i>Before lockdown</i>	13.0±4.1	13.2±3.9	13.0±4.1	0.0±0.0	13±2.1	0.0±0.0	<0.001*
<i>During lockdown</i>	9.7±7.1	0.0±0.0	13.3±4.7	12±2.2	12.7±3.5	0.0±0.0	<0.001*

Peaceful/angry, VAS from peaceful (0) to angry (100)								
<i>Before lockdown</i>	42.6±25	41.1±24.1	43.1±25.4	43.1±23.7	43.1±24.5	37.9±22.7	0.02*	
<i>During lockdown</i>	60.2±27.1	64.8±24.6	58.5±27.9	58.4±25.0	58.5±26.4	54.5±25.5	0.09	
Sad – happy, VAS from sad (0) to happy (100)								
<i>Before lockdown</i>	65.7±23.4	63.3±24.9	66.5±22.9	64.8±19.8	65.7±21.35	68.6±21.0	0.03*	
<i>During lockdown</i>	42.3±26.2	35.8±26.8	44.6±25.6	47.1±24.1	45.9±24.9	47.1±24.8	0.41	
Calm - excited, VAS from calm (0) to excited (100)								
<i>Before lockdown</i>	48.0±27.8	51.5±26.1	46.7±28.3	55.6±22	51.2±25.2	43.5±25.0	0.03*	
<i>During lockdown</i>	49.3±27.4	52.1±28.1	48.4±27.2	51.1±26.3	49.8±26.8	46.7±24.8	0.24	
Busy - bored, VAS from busy (0) to bored (100)								
<i>Before lockdown</i>	22.3±22.5	24.9±24.1	21.3±21.9	20.8±22.6	21.1±22.3	19.1±19.2	<0.001*	
<i>During lockdown</i>	51.3±31.2	55.7±28	49.6±30.9	52.9±30.4	51.2±30.7	40.4±30.6	<0.001*	

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359 **Figure legends**

360 **Figure 1.** Flow chart on the recruitment of participants.

361 **Figure 2.** A: Comparison of the consumption of cannabis before and during the lockdown
362 period in the overall group of cannabis users and the three subgroups; B: Comparison of the
363 consumption of cannabis before and during the lockdown in men and women. The ordinate
364 represents the number of joints consumed per week *: $p < 0.05$; **: $p < 0.01$; ***: $p < 0.001$ before
365 vs during.

366 **Figure 3.** Results of the regression analysis of the use of cannabis during the lockdown. VAS
367 = visual analogue scale.

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Figure 1.JPEG

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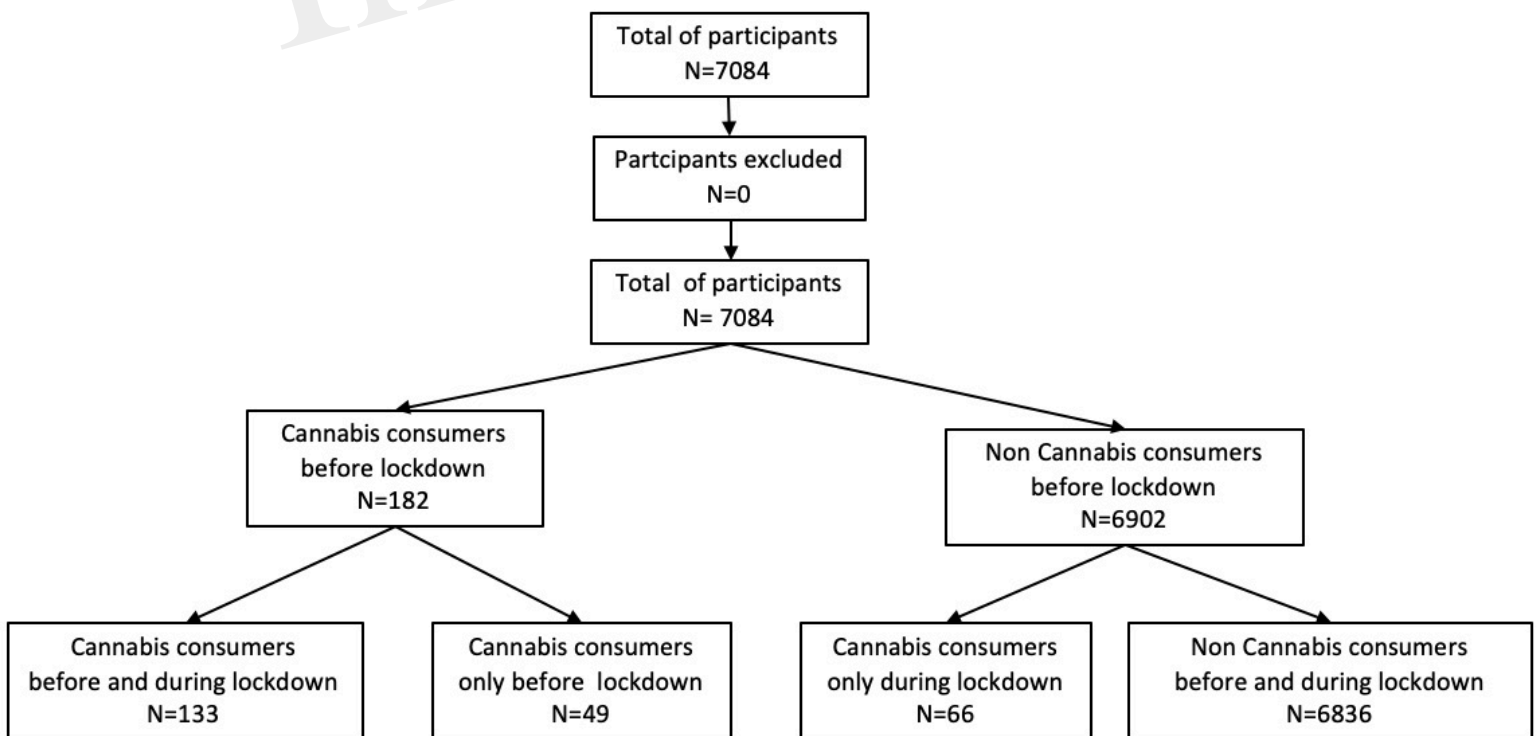


Figure 2.JPEG

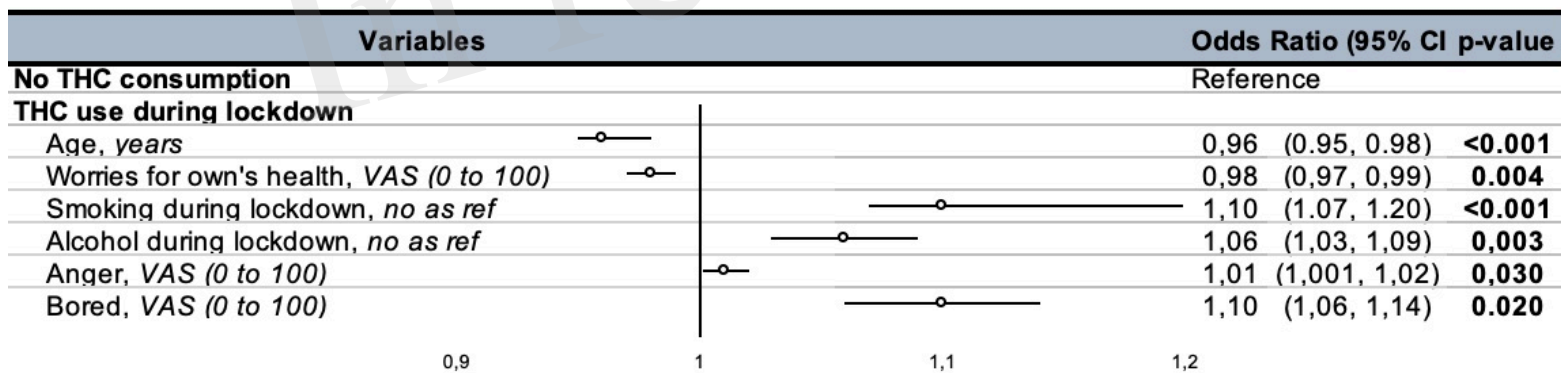


Figure 3.JPEG

