

Change in Psychoactive Substance Consumption in Relation to Psychological Distress During the COVID-19 Pandemic in Uruguay

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ABSTRACT: Objectives: This study aimed to analyse how the health crisis associated with the COVID-19 pandemic affected psychoactive substance consumption in Uruguay. **Methods:** An online survey was answered by 1,916 Uruguayan citizens between March and April 2020 regarding psychoactive substance use before and after the instauration of a recommended quarantine, increases in frequency and volume of use (during the quarantine) of the psychoactive substance they reported as having consumed the most in the year prior to the quarantine and psychological distress experienced during the last month. **Results:** The main substances consumed during the quarantine were alcohol, tobacco, marijuana and psychopharmaceuticals. Approximately 28% of respondents increased the volume (and 17.7%, the frequency) of use of the substance they had consumed the most the year before the instauration of the quarantine. Moreover, 5.7% initiated the consumption of a new psychoactive substance during the quarantine, mostly marijuana and psychopharmaceuticals. Psychological distress was significantly higher among women, participants under 30 and among those that increased the volume of their most or second preferred psychoactive substance. The group reporting an increase in the volume of use exhibited greater psychological distress. **Conclusion:** These results indicate an association between the instauration of the recommended quarantine in Uruguay and greater psychoactive substance use during the period as well as an association between increased psychoactive substance use during this period and levels of psychological stress. These results are relevant in terms of public health and policies.

Keywords: COVID-19; Substance Use; Psychological Distress; Alcohol Abuse; Marijuana Use; Quarantine; Uruguay.

ADVANCES IN KNOWLEDGE

- Certain precautionary measures taken for COVID-19 such as quarantine can affect substance use.
- The psychoactive substances that showed a greater increase in consumption during the early phase of the COVID-related quarantine in Uruguay were alcohol, tobacco, marijuana and psychopharmaceuticals.
- An association was found between an increase in substance use and the levels of psychological distress.
- It is likely that the reported increase in the use of these substances indicates self-medicating behaviour, aimed at overcoming symptoms of anxiety and stress experienced during the pandemic.

APPLICATION TO PATIENT CARE

- Psychological discomfort was greater in women and those under 30 years of age.
- Women were more likely to have increased their tobacco and psychopharmaceuticals use.
- Men were more likely to increase their marijuana and cocaine use.

URUGUAY HAS ENDURED SEVERAL EPIDEMICS (the scarlet fever in 1836, yellow fever in 1857 and cholera in 1868) and pandemics (the flu in 1918); yet, research on how those events affected mental health is not available.^{1,2} The first positive cases of COVID-19, the disease induced by a novel coronavirus referred to as severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), were detected in late 2019 in Wuhan, China, although it emerged in Uruguay in March 2020. By mid-March, four cases had been detected in Uruguay and the disease had spread to several Latin-American countries, prompting the Uruguayan government to enforce a country-wide health emergency. The government established health and safety measures such as home quarantine and

recommended non-mandatory closure of educational centres and public events and restriction of social gatherings.

Viral outbreaks, such as the one linked to SARS in China in the early 2000s, exert significant consequences on mental health. Wu *et al.* found that health workers who submitted to mandatory quarantine during the SARS outbreak exhibited significantly more symptoms of alcohol use disorders three years later than those who had not experienced quarantine.³ Bai *et al.* described stress-related symptoms in health workers from Taiwan, who underwent quarantine during the outbreak.⁴ Similarly, Hawryluck *et al.* studied a sample of Canadians exposed to quarantine measures and reported symptoms of posttraumatic stress disorder

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(PTSD) and depression in 28.9% and 31.2% of the sample, respectively.⁵ Interestingly, there was a positive association between the length of the quarantine and the prevalence of PTSD symptoms.

The assessment of the effects of COVID-19 on mental health is still ongoing, although preliminary data indicate an increase in stress, anxiety, insomnia, depression and fear across the globe.^{6,7} A study conducted in Russia reported an increase in somatisation, phobias and sleep disorder symptoms since the beginning of the COVID-19 pandemic.⁸ Moreover, a survey conducted in Italy on 2,291 participants showed an increase in anxiety disorders (32.1%) and PTSD (7.6%) compared to the period before the COVID-19 outbreak.⁹ Similarly, a survey on 7,236 Chinese people revealed a high prevalence of symptoms of generalised anxiety (35.1%), depression (20.1%) and sleep disorders (18.2%), which mainly affected those ≤ 35 years old.¹⁰

Information focused on the use of substances during the pandemic is still scarce; however, research conducted in India shows that 25% of the sampled participants exhibited symptoms of severe depression, anxiety (28.0%) or stress (11.6%) and these scores were associated with problematic alcohol drinking.¹¹ Australia reported an increase in the frequency of alcohol consumption during the COVID-19 pandemic, which was in-turn associated with high levels of psychological distress.¹² In some cases, the abrupt disruption of access to the substances was associated with severe complications. For instance, India reported a significant increase in hospital emergencies for treating alcohol abstinence, which was associated with a peak in suicide reports.^{13,14} In the USA, Friedman *et al.* documented an increment of overdose-related cardiac arrests during the COVID-19 pandemic, as registered by emergency medical services.¹⁵ Reinstadler *et al.* showed that during the initial lockdown in response to the onset of the pandemic in Austria, caffeine and cannabis use increased, amphetamine and methamphetamine use decreased and methylenedioxymethamphetamine use showed no significant changes.¹⁶ Moreover, the Global Drug Survey reported that cannabis and alcohol were the most consumed psychoactive substances during the COVID-19 pandemic.¹⁷

In South America, a recent study has shown that the quarantine imposed in Argentina to mitigate the spread of COVID-19 was associated with temporal displacement of alcohol consumption (i.e. consumption during the weekend shifted to weekdays) as well as an increase in marijuana use among those who already consumed it before the pandemic.¹⁸ Overall, these results are consistent with

McKay's hypothesis, which postulates an increase in psychoactive substance use during the COVID-19 pandemic due to overstimulation of interoceptive awareness and arousal as well as an increase in anxiety.¹⁹ These changes promote the consumption and potential abuse of psychoactive substances in general; however a specific increase in alcohol and marijuana use has been reported due to their rewarding and anti-anxiety effects.

Notably, the market for addictive substances has been impacted during the pandemic as well.^{20,21} In Uruguay, where the current research took place, press releases have suggested a significant (~30%) increase in the sale of wines; however, there is a dearth of scientific data on these issues. Nonetheless, it is known that marijuana and alcohol rank among the most consumed psychoactive substances in Uruguay. Specifically, a recent nation-wide study revealed that among Uruguayans aged 15–65 years, alcohol (52%) and tobacco (33%) were the substances with the highest level of habitual consumption (i.e. in the last 30 days), although lifetime prevalence of psychopharmaceuticals (27.2%), marijuana (23.3%) and cocaine (6.8%) use was also elevated.²² The general aim of the present study was to assess the potential impact of the COVID-19 pandemic on the use of psychoactive substances in Uruguay. Specifically, the study investigated changes in frequency and quantity of such use over the period before and during the recommended quarantine and assessed factors (e.g. psychological stress) associated with heightened psychoactive substance use during and prior to the recommended quarantine. The differences in the occurrence of psychological stress as a function of age and gender were also analysed. These are factors that, in prior research, proved relevant in modulating psychological stress or to be involved in psychoactive substance self-administration.^{18,23}

Methods

This cross-sectional study included Uruguayan citizens aged at least 18 years. An online survey was conducted from 26 March (13 days after the recommended quarantine commenced) to 5 April 2020. The instruments used were compiled in an online questionnaire created using Google Forms. The link to the survey was distributed through email listings and academic and social networks such as Facebook (Facebook Inc., Menlo Park, California, USA), Instagram (Instagram Inc. Menlo Park, California, USA), Twitter (Twitter Inc., San Francisco, California, USA) and WhatsApp (WhatsApp Inc., Menlo Park, California, USA), among others. Thus, the sample was collected using convenience sampling. The invitation

emphasised the anonymity and academic nature of the study and contained a link. Clicking the link redirected prospective participants to an active consent form, which led to the survey upon completion. There was no compensation for participating in the study. The inclusion criteria were being 18 years old or older, residing in Uruguay and having consumed a psychoactive substance during the year before the recommended quarantine.

Several questions were asked about biological gender, age, place of residence (Uruguay is divided into 19 departments), type of isolation during the recommended quarantine (total: leaving the household only for essentials; partial: leaving the household less frequently than usual), number of days spent in quarantine at the time of assessment, usual number of hours spent isolated/quarantined at home each day, employment status and, among those who reported working, weekly working hours.

Based on the study by Pilatti *et al.*, participants were asked about their use of psychoactive drugs during the 12-month period prior to the beginning of the recommended quarantine.¹⁸ Participants chose among nine pre-set options—alcohol, marijuana, tobacco, cocaine, hallucinogens, ectasis, stimulants, ‘pasta’ (an intermediate substance that is obtained during the manufacturing of cocaine hydrochloride and is somewhat popular in Uruguay) or psychopharmaceutical substances without medical prescription such as benzodiazepines and an ‘other’ option. Participants could answer ‘yes’ to several of those options. They were then asked which of those substances they had used the most during the last year. With respect to that psychoactive substance (i.e. their individually preferred or ‘first-choice’ drug), they were asked about the frequency of use in the 12 months before the recommended quarantine (providing 10 options, ranging from daily to just once in the year) and during the recommended quarantine. Following this, respondents were asked about their perception (yes/no) of heightened quantity of consumption (i.e. during the quarantine with respect to the year prior to the quarantine) of the psychoactive substance they had reported to use the most during the last year. In more detail, the specific question was ‘With regard to the drug that you used the most during the last year, did you notice that the volume of consumption increased during the recommended quarantine compared to the previous year (i.e. if it was alcohol, did you drink more glasses or litres; if it was tobacco, did you smoke more cigarettes; if it was marijuana, did you use more joints, etc.)?’. The answers to the question on individually preferred or first-choice psychoactive substance (during the last year) given by the different participants were obviously

dissimilar. Questions assessing the initiation of use of psychoactive substances during the quarantine (indicating that it had never been tried before) were also included.

Psychological distress was assessed via the Kessler scale. This scale has 10 items in a five point Likert-scale-type format. Scores ranged from 10 to 50 (where higher values indicate higher levels of psychological distress) and provided information on unspecific psychological distress (anxiety or depression symptoms) suffered during the last month.²⁴ A score under 20 indicates a normal level of psychological distress and those scoring 20–24, 25–29 and 30 or more exhibit mild, moderate or severe levels of psychological distress, respectively.²⁵ In this study, the reliability (calculated via Cronbach’s alpha) of the scores of the scale was adequate ($\alpha = 0.88$) and similar to that reported in another study, in which the scale was applied to a different Uruguayan sample.²³

All the data were analysed using Statistica 8.0 (StatSoft Inc., Tulsa, USA). Descriptive analyses of variables measuring psychoactive substance use (i.e. type of drug), time spent in quarantine and psychological distress were conducted separately based on gender (male, female), area of residence (the capital Montevideo, rest of the country) and age (under or over 30 years). An analysis of variance (ANOVA) using age and gender as between-groups factors was conducted on Kessler scores. A one-way ANOVA analysed whether the levels of psychological distress differed as a function of frequency of drug use (daily drug use, weekly drug use, some days of the week or no drug use) during the quarantine. Separate ANOVAs analysed whether those who reported to begin the use of new drugs or increased the volume of their main or second drug of choice during the quarantine manifested significantly higher levels of psychological distress than those who did not report those behaviours. A type I error was set at 0.05.

One of the purposes of the study was to find factors associated with heightened psychoactive substance use during and prior to the recommended quarantine. As indicated, each participant identified the substance they had used the most during the year before the quarantine (i.e. the ‘preferred’ psychoactive substance) and then answered if they had increased the volume of use of that substance during the recommended quarantine. A binary logistic regression model on this dichotomous outcome (yes/no, as asked concerning increased volume of use of the ‘preferred’ psychoactive substance during the quarantine) was conducted. Biological gender, age in years, type of quarantine (partial or total), region of residence (Montevideo or other departments), psychoactive substance of choice

(i.e. most used substance) during the year before the quarantine and absolute Kessler scores were variables used altogether to differentiate participants who had increased the volume of use from those who had not.

A separate binary regression forecasted membership in the group that had showed a self-reported increase in the frequency of use of the preferred psychoactive substance using the predictor variables described above. For both logistic regressions and due to the low number of subjects exhibiting certain categories of response, the first-choice psychoactive substances were re-categorised as follows: tobacco (0, i.e. reference category against which odds ratios [ORs] for the other substance were computed), alcohol (1), marijuana (2) and others (3).

This study was designed and conducted in adherence to the indications of the Declaration of Helsinki. Privacy and data confidentiality were maintained throughout the process. A specific ethical agreement is not needed in Uruguay for the type of survey employed.

Results

The survey was completed by 1,916 participants. A total of 53 cases were dismissed due to response inconsistencies; thus, the final sample was 1,863. Uruguay's population (~3.5 million) has slightly more women (51.6%) than men, and close to 40% of the population lives in Montevideo. The country's median age is 32.8 years.²⁶ The sample consisted of approximately 66% women (mean age = 31.3 ± 0.3 years; 72.7% resided in Montevideo) [Table 1].

Nearly 40% of the sample was in partial isolation (i.e. leaving the household less frequently than usual) at the time of the survey, whereas the remaining 61.4% was in total isolation (i.e. leaving the household only for buying essential goods or emergency essentials). At the time of the survey, participants had spent a mean of 13 ± 3.9 days in isolation. Slightly less than half of the sample (44%) exhibited normal distress scores, whereas 19.3%, 17.9% and 18.7% exhibited mild, moderate and high levels of distress, respectively [Tables 2 and 3].

Approximately, one third of the participants (30.3%) reported daily use of the psychoactive substance of choice during the quarantine, whereas 23.9% reported using psychoactive substances several days a week and 9.1% once a week. A portion (28%) of the sample reported having increased the volume of the psychoactive substance of choice during isolation and 17.7% reported an increase in the frequency of use. A minority (5.7%) reported having initiated the use of new psychoactive substances, mainly marijuana or psychopharma-

ceuticals, during the quarantine [Table 3].

Prevalence of psychoactive substance use during the year before the quarantine was 89.7% (alcohol), 55.8% (marijuana), 40.9% (tobacco), 20.8% (psychopharmaceuticals), 17.4% (hallucinogens), 14.1% (ecstasy), 10.8% (cocaine), 4.7% (stimulants), 1.3% (ketamine) and 0.4% (pasta). When asked about the most consumed psychoactive substance (i.e. the psychoactive substance of choice) during the past year, the majority indicated alcohol (54.7%), followed by tobacco and marijuana (19.2% and 16.7%, respectively), psychopharmaceuticals (6.9%) and cocaine (0.9%) [Table 4].

The ANOVA on Kessler total scores indicated significantly higher levels of psychological distress in those aged ≤ 30 ($F_{1,1859} = 52.1$; $P < 0.001$) and in women ($F_{1,1861} = 104.1$; $P < 0.001$). The interaction between age and gender was not significant. The levels of psychological distress were affected by the frequency of psychoactive substance use during the quarantine ($F_{5,1397} = 5.2$; $P < 0.001$). Least significant difference *post-hoc* tests indicated that participants reporting daily psychoactive substance use during the quarantine exhibited significantly higher levels of psychological distress (22.89 ± 0.33) than those who reported using psychoactive substances on a weekly basis (21.02 ± 0.51) or only during some days of the week (21.4 ± 0.34 ; $P < 0.05$). Similarly, those who used new psychoactive substances ($F_{1,1850} = 38.5$; $P < 0.001$) or increased the volume of their preferred psychoactive substance (i.e. that substance used the most during the year

Table 1: Gender-wise distribution of socio-demographic data of Uruguayan citizens including information regarding age, geographical area and type of isolation during the COVID-19 pandemic (N = 1,863)

Characteristic	n (%)	
	Male (n = 636)	Female (n = 1,227)
Age* in years		
Mean	32.7 \pm 0.4	31.3 \pm 0.3
<30	290 (45.6)	697 (56.8)
>30	345 (54.3)	529 (43.1)
Geographic area		
Montevideo	472 (74.2)	892 (72.7)
Rest of the country	164 (25.8)	335 (27.3)
Type of isolation		
Total [†]	349 (54.9)	795 (64.8)
Partial [‡]	287 (45.1)	432 (35.2)

*Two participants did not provide their age in the survey.

[†]Total: leaving the household only for essentials.

[‡]Partial: leaving the household less frequently than usual.

Table 2: Socio-demographic data of Uruguayan citizens including information regarding participants' employment hours and isolation during COVID-19 (N = 1,863)

Characteristic	Mean ± SD		
	Number of days in isolation	Number of hours a day in isolation	Number of working hours per week
Gender			
Male	12.9 ± 0.2	19 ± 0.2	25.9 ± 0.8
Female	13 ± 0.1	19 ± 0.2	21 ± 0.5
Geographic area			
Montevideo	12.9 ± 0.1	19.1 ± 0.2	24.3 ± 0.5
Rest of the country	13.2 ± 0.2	18.7 ± 0.2	18.3 ± 0.8
Age group in years			
<30	12.9 ± 0.1	19.2 ± 0.2	17.9 ± 0.6
>30	13.1 ± 0.1	18.7 ± 0.2	28.1 ± 0.6
Type of isolation			
Total*	13.2 ± 0.1	20.4 ± 0.2	20.7 ± 0.6
Partial†	12.7 ± 0.1	16.8 ± 0.2	25.8 ± 0.7

SD = standard deviation.

*Total: leaving the household only for essentials.

†Partial: leaving the household less frequently than usual.

Table 3: Self-reported initiation of a new drug use during the recommended quarantine and psychological distress scores (based on the Kessler psychological distress scale) as a function of gender, geographic area, age group and type of isolation during COVID-19 among Uruguayan citizens (N = 1,863)

Characteristic	Total	Initiation of a new drug	Psychological distress
		n (%)	Mean ± SD
Gender			
Male	636	33 (5.2)	19.4 ± 0.2
Female	1,227	73 (6.0)	23 ± 0.2
Geographic Area			
Montevideo	1,364	84 (6.2)	21.9 ± 0.2
Rest of the country	499	22 (4.4)	21.5 ± 0.3
Age group* in years			
<30	987	62 (6.3)	22.9 ± 0.2
>30	874	44 (5.0)	20.5 ± 0.2
Type of isolation			
Total†	1,144	55 (4.8)	21.8 ± 0.2
Partial‡	719	51 (7.1)	21.7 ± 0.2

SD = standard deviation.

*Two participants did not provide their age in the survey; †Total: leaving the household only for essentials; ‡Partial: leaving the household less frequently than usual.

Table 4: Frequency distribution of participants that selected a given psychoactive substance as their individually preferred or 'first-choice' drug during the year prior to the current survey among Uruguayan citizens (N = 1,863)

Characteristic	Total	n (%)					
		Alcohol	Tobacco	Marijuana	Psychopharmaceuticals	Cocaine	*Other drugs
Gender							
Male	636	345 (54.2)	102 (16.0)	146 (23.0)	23 (3.6)	10 (1.6)	10 (1.6)
Female	1,227	674 (54.9)	255 (20.8)	165 (13.4)	106 (8.6)	7 (0.6)	20 (1.6)
Geographic area							
Montevideo	1,364	753 (55.2)	254 (18.6)	230 (16.9)	93 (6.8)	11 (0.8)	23 (1.7)
Rest of the country	499	266 (53.3)	103 (20.6)	81 (16.2)	36 (7.2)	6 (1.2)	7 (1.4)
Age group† in years							
<30	987	547 (55.4)	158 (16.0)	207 (21.0)	53 (5.4)	6 (0.6)	16 (1.6)
>30	874	470 (53.8)	199 (22.8)	104 (11.9)	76 (8.7)	11 (1.3)	14 (1.6)
Type of isolation							
Total‡	1,144	630 (55.1)	217 (19.0)	187 (16.3)	85 (7.4)	7 (0.6)	18 (1.6)
Partial§	719	389 (54.1)	140 (19.5)	124 (17.2)	44 (6.1)	10 (1.4)	12 (1.7)

*Drugs such as lysergic acid diethylamide, ecstasy, ketamine and others.

†Two participants did not provide their age in the survey.

‡Total: leaving the household only for essentials.

§Partial: leaving the household less frequently than usual.

before the quarantine; $F_{1,1872} = 44.2$; $P < 0.001$) or the volume but not the frequency of their second most preferred psychoactive substance ($F_{1,1247} = 9.5$; $P < 0.01$), manifested significantly higher levels of psychological distress than those who did not report those behaviours.

The logistic regression model was statistically significant ($\chi^2 = 162.05$; $P < 0.001$). The model (Nagelkerke's R^2) explained 12% of the variance and the Hosmer–Lemeshow test was not significant ($\chi^2 = 4.25$; $P > 0.80$), corroborating the good fit. Overall, the correct classification of cases was 72.4%, although the sensitivity of the model was low. Specifically, sensitivity and specificity were 16.1% and 94.7%, respectively. In other words, the model's ability to correctly forecast membership in the group that reported increased volume of the preferred psychoactive substance (i.e. that which was used the most during the year before the quarantine) was rather low. Only two factors achieved statistical significance: psychological distress and the preferred psychoactive substance. Higher distress scores were associated with a significantly higher probability of membership in the group that increased the volume of use of the substance of first choice (OR = 1.05; 95% confidence interval [CI]: 1.03–1.06; $P < 0.001$). Moreover, those who reported using alcohol (OR = 3.28, 95% CI: 2.15–5.00; $P < 0.001$) or the 'other' category item (which included cocaine and psychopharmaceuticals [OR = 2.97, 95% CI: 1.92–4.60; $P < 0.001$]) as their drug of first choice were significantly more likely to be included in the group of increased volume of use than those using the reference category item (tobacco).

The model was statistically significant ($\chi^2 = 63.56$; $P < 0.001$), but the amount of variance explained was very low (Nagelkerke's $R^2 = 0.06$) and the Hosmer–Lemeshow test was also significant ($\chi^2 = 37.06$; $P < 0.001$). Altogether, it can be said that the model did not exhibit a good fit. This result was further corroborated by the positive and negative prediction values, which revealed the lack of proper classification (i.e. sensitivity and specificity were 0.0% and 100.0%, respectively).

Discussion

This study presents relevant information on how the measures instituted to prevent the dissemination of the COVID-19 pandemic affected psychoactive substance use in Uruguay. The objective was to analyse differences in the occurrence of psychological stress in terms of factors such as age and gender that, in prior research, proved to be relevant in modulating psychological stress or involved in psychoactive substance self-

administration. Traditionally, men exhibit greater psychoactive substance use than women, although the latter progress more rapidly to problematic alcohol consumption than the former and psychological distress tends to be greater in women than in men.^{18,24,26} Involvement in psychoactive substance use during the recommended home quarantine was also analysed and found to be associated with levels of psychological stress, among other variables. Previously, it was reported that psychological distress was associated with negative, alcohol-related consequences in Uruguayans aged 18–60 years.²³

A sizable portion of the sample (18.7%) exhibited a high level of distress during the recommended quarantine. This report is troublesome, as prolonged exposure to psychological distress increases the likelihood of suffering from anxiety and depression. This finding implies that the health system in Uruguay, and likely across the region, will probably have to face the challenge of a second wave of COVID-19-related disabilities, involving alterations in mental health. Moreover, it was found that psychological distress was associated with an increase in the volume of use of the individual's psychoactive substance of choice and that those who reported daily use of this psychoactive substance or began to use a new psychoactive substance during the quarantine, exhibited higher levels of psychological distress than those who did not. These findings are consistent with previous reports from Brazil and Uruguay, indicating an association between psychological distress and psychoactive substance consumption.^{27,28}

A previous study from the same authors as the current study, conducted years before the COVID-19 outbreak, also linked the level of psychological distress to alcohol-related consequences in Uruguayan youth.²³ In the current study, the authors also found that levels of psychological stress were significantly higher in women than in men.

Close to a quarter of the sample reported an increase in the quantity of their preferred psychoactive substance use during the recommended quarantine. Almost 20% of the sample showed an increase in the frequency of use of their preferred drug of choice and a sizable 30% exhibited daily psychoactive substance use. As was found in other countries, alcohol was the substance most used during the quarantine.^{29,30} Alcohol and marijuana use are strongly driven by the need to reduce ongoing or anticipated negative effects related to psychological distress.^{31,32} Thus, it is likely that the reported increase in the use of these substances indicates self-medicating behaviour, aimed at overcoming symptoms of anxiety and stress. Consistent with this hypothesis, it was found that

Kessler scores in those reporting daily psychoactive substance use during the quarantine were significantly higher than those observed in participants that consumed psychoactive substances either weekly or during some days of the week or that did not use psychoactive substances during the period.

The results of the binary regression analyses were also consistent with the hypothesis that the increase in substance use during the recommended quarantine was driven by the need to reduce negative effects. Specifically, membership in the target group (i.e. participants who reported an increase in the volume of use of the preferred psychoactive substance) was associated with greater psychological distress scores. Notably, the likelihood of exhibiting such increase in volume was approximately three times higher in participants whose drug of first choice (during the year before the quarantine) was alcohol or drugs such as cocaine, psychopharmaceuticals or analgesics than in participants whose preferred drug was tobacco. The separate binary regression analysing factors associated with an increase in the frequency of use of the preferred psychoactive substance did not provide meaningful information.

It should be noted, however, that the psychological distress scale used in the current study lacks validation in Uruguay, which detracts from the validity of these findings. Another limitation is that only two types of self-isolation (partial and total) were inquired about. Future studies should further dissect the type of experiences that define isolation in the context of COVID-19-related or other quarantines.

Conclusion

This study presented the novel finding that during the first stage of the COVID-19 pandemic, psychological distress levels were relatively high in the Uruguayan population, particularly among women and those under 30 years of age. Moreover, 28.3% of the participants increased the volume of use of the psychoactive substance they had reported using the most in the year before the quarantine and 17.7% increased the frequency of such use. Those who reported such an increase in volume also reported higher levels of psychological distress than those who did not. These results indicate an association between the instauration of the recommended quarantine in Uruguay and greater psychoactive substance use during the period. The findings from this study are relevant in context of its implications in the creation of more robust public health policies that can cater to the well-being of this psychologically vulnerable population.

CONFLICT OF INTEREST

The authors declare no conflicts of interest.

FUNDING

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AUTHORS' CONTRIBUTION

PR and FS conceptualised the study. All authors were involved in project administration. PR and RMP contributed to the visualisation, while FS and RMP performed the investigation. All authors collected the data and RMP analysed the data. All authors were involved in drafting the manuscript. All authors approved the final version of the manuscript.

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