The American Journal on Addictions, 29: 268–270, 2020

ISSN: 1055-0496 print / 1521-0391 online
DOI: 10.1111/ajad.13066

Brief Report: Increased Addictive Internet and Substance Use Behavior During the COVID-19 Pandemic in China

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Background and Objectives: The COVID-19 pandemic and control measures may have increased the risk of abusing addictive substances as well as addictive behaviors.
Methods: We present an initial online survey in 6416 Chinese about the relation between the COVID-19 pandemic and addictive behavior in China.
Results: During the COVID-19 pandemic, 46.8% of the subjects reported increased dependence on internet use, and 16.6% had longer hours of internet use. The prevalence (4.3%) of severe internet dependence rose up to 23% than that (3.5%) before the COVID-19 pandemic occurred, and their dependence degree rose 20 times more often than being declined (60% vs 3%). Relapses to abuse from alcohol and smoking abstinence were relatively common at 19% and 25%, respectively. Similarly, 32% of regular alcohol drinkers and 20% of regular smokers increased their usage amount during the pandemic.
Conclusion and Scientific Significance: These three coping behaviors (internet, alcohol, and smoking) during this COVID-19-related crisis appear to have increased the risk for substance use disorders and internet addiction. (Am J Addict 2020;29:268–270)

INTRODUCTION

The COVID-19 pandemic and its social and economic impact have induced widespread anxiety, depression, and other adverse psychological reactions,[1] which are likely to increase addictive behavior, including substance abuse and behavioral addictions.[2] Previous studies on the impacts of disasters such as terrorist incidents, natural disasters, and the severe acute respiratory syndrome epidemic have reported increased rates of addictive behaviors, including alcohol drinking, smoking, and problematic internet use.[3,4] Alcohol, tobacco, and internet addictions are among the world's most common addictions, which could weaken immune responses and decision-making abilities, thereby increasing the vulnerability for COVID-19 infection.[5] Overall, the COVID-19 pandemic may have increased the risk of abusing addictive substances as well as addictive behaviors, as some scientists and institutions have warned.[6,7] At the same time, the COVID-19 pandemic has increased the difficulties in providing adequate rehabilitation and treatment to patients with addictive disorders, further exacerbating the burden on the population.[8] Here, we present an initial investigation on the relation between the COVID-19 pandemic and addictive behaviors in China.

METHODS

We designed a self-report questionnaire to survey the impact of COVID-19 on addictive behavior of the general population. We presented a questionnaire online; openly accessible to the general public nationwide on the website of Joybuy.com, which is one of the most popular e-commerce websites in China, and had also spread the survey via Wechat and Weibo. We collected the survey responses

Received May 5, 2020; revised May 10, 2020; accepted May 17, 2020.
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during 24-31 March 2020. We assessed the self-reported behavioral changes and usage characteristics of internet use, alcohol drinking, and smoking before and during the pandemic. The degree of internet addiction was assessed by the internet Addiction Test (IAT),[9] on which the severe addiction score range from 80 to 100. The study was approved by the Institutional Review Board of Peking University Health Science Center. Participants received monetary compensation.

RESULTS

General Information

A total of 6416 valid questionnaires were collected (male/female: 47%/53%, age [mean ± SD]: 28.23 ± 9.23). The respondents included 47% males and 53% females, and the respondents' reported mean age was 28 years (SD = 9.2). A minority of responses were from Hubei ($n = 330$), but these responses showed no demographic differences from the overall sample and also were too few to be allowed for separate analyses.

Internet Use

Among the 6416 participants 46.8% (47.6% for males, 46.1% for females, $\chi^2 = 1.8$, $P = .41$) reported increased dependence on internet use (IAT score) and 16.6% (18.8% for males and 14.5% for females, $\chi^2 = 28.84$, $P < .001$) reported longer internet use time during the pandemic. 4.3% ($n = 274$) (4.6% for male, 3.9% for female, $\chi^2 = 1.96$, $P = .16$) of the participants reported severe internet addiction, which was 23% higher than the prevalence rate of severe internet addiction (3.5%) found before the COVID-19 pandemic (October 2019) among the 340 subjects (male/females 37.8%/62.2%, age 21.77 ± 4.52 years). Among those who were severely addicted to internet use, their dependence degree (IAT score) rose 20 times more often than it declined (58.7% [$n = 214$] vs 3.3% [$n = 7$]).

Alcohol Drinking and Cigarette Smoking

The overall rate of alcohol drinking and smoking among the 6416 participants increased only marginally during the COVID-19 pandemic from 31.3% ($n = 2006$) to 32.7% ($n = 2098$) for drinking and from 12.8% ($n = 822$) to 13.6% ($n = 873$) for smoking. However, addictive behaviors increased substantially in two areas: (a) 18.7% of 331 ex-drinkers and 25.3% of 190 ex-smokers had relapsed; (b) 32.1% of 137 regular drinkers and 19.7% of 412 regular smokers reported an increased amount of alcohol drinking or cigarette smoking. Furthermore, only a small proportion of participants initiated the use of alcohol (1.7% of 4079 nondrinkers) or cigarette smoking (1.6% of 5404 nonsmokers). A fraction of individuals (1.6% of 1861 once occasional drinkers and 6.7% of 417 once occasional smokers) transited from occasional use to regular use, currently. A very small group had quit drinking or smoking, perhaps by avoiding social cues during the pandemic[5]: 3.4% ($n = 5$) of 145 regular drinkers and 8.4% ($n = 34$) of 405 regular smokers.

DISCUSSION

Our results indicated greater internet use among study participants and an increase in severe internet addiction. During the COVID-19 pandemic, face-to-face activities have been greatly reduced and online services have been rapidly promoted, which inevitably increased internet use. The World Health Organization (WHO) launched the "Play apart Together" campaign on 28 March 2020, suggesting video games as a safe social activity for supporting a stay-at-home strategy.[10] A significant upswing in internet usage due to COVID-19 measures has already been reported by some media.[11] One consequence of this policy might be an increase in internet gaming addiction, especially among adolescents. Although internet use is playing a positive role in this pandemic's prevention and control, it is important to adopt public health strategies that emphasize the need to incorporate internet activities as part of a daily routine, including physical exercise, to decrease dependence on the internet and thus help prevent the increase in internet addiction.

COVID-19 may not directly lead to changes in drinking and smoking behaviors, but the stress of potential infection or actual infection will increase negative emotions such as anxiety and depression.[12,13] These changes in many individuals will lead to them increasing their use and relapsing from abstinence, and very few individuals will reduce their use. Thus, we need good data on the incidence of these relapses to increased substance abuse to guide decision-making at the public health and public policy levels. An intervention producing benefit to one group within society may increase harmful behavior for a different group. The objective must be to achieve maximum benefit by minimizing collateral damage.

The possible adverse effects of the COVID-19 pandemic on addictive behavior and disorders need careful consideration. The WHO has released a guidance for preventing abuse of addictive substances,[5] and China has published the treatment measures for drug abuse and addictive behaviors.[14-16] The general population is encouraged to exercise regularly and to maintain their normal routines of activity and wakefulness as ways to cope with this stress. Family members, social workers, teachers, and treatment institutions should strengthen communication and pay more attention to the groups that are at high-risk for addictive disorders. Staying connected to support and services during the COVID-19 pandemic is critical for millions of people who are struggling with substance use disorders and addiction behaviors.

Some limitations should be noticed. Our online survey was released by e-commence website, Wechat and Weibo, which inevitably has response bias due to nonsampling, especially for internet use. As this report is a preliminary investigation further stratification (such as gender and regions) and follow-up to better identify individual

vulnerabilities and long-term effects of this pandemic on addictive behaviors are in urgent need. Those inquiries will be undertaken in future planned studies, along with a more targeted investigation of effective prevention and intervention strategies.

This work was supported by grants from the National Natural Science Foundation of China (U180220091), Beijing Municipal Science & Technology Commission (Z181100001518005), Special Research Fund of PKUHSC for Prevention and Control of COVID-19 (no. BMU2020HKYZX008) and Youth Elite Scientists Sponsorship Program by CASR (CSTQT2017002).

Declaration of Interest

We declare no competing interests.

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