

Alcohol, Tobacco, and Sedative Drug Consumption in North Cyprus; Before and During the Early COVID-19 Pandemic

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Abstract

BACKGROUND/AIMS: The coronavirus disease-2019 (COVID-19) pandemic resulted in the implementation of restrictions and caused lifestyles to change; the economy to decline; and psychiatric problems to arise. These factors might have influenced the consumption of alcohol, tobacco, and sedative drugs. This study aims to investigate the consumption trends of alcohol, tobacco, and sedative drugs before and during the early period of the COVID-19 pandemic in North Cyprus.

MATERIAL AND METHODS: A cross-sectional study was conducted using an online questionnaire targeting residents of North Cyprus aged 18 years and above. A sample of 270 people was selected using the snowball sampling method to represent the population with 90% confidence. The alcohol, smoking, and substance involvement screening test (ASSIST) scale was employed to evaluate alcohol, tobacco, and sedative drug use before and during the first three months of the COVID-19 pandemic.

RESULTS: A total of 280 residents participated in this study. 50.7% of the participants reported the use of tobacco before the pandemic. 86.8% had moderate risk before COVID-19, while 65% had low-risk usage in the pandemic's first three months. 62.9% of the participants indicated no tobacco use during the first three months of the pandemic. Tobacco consumption severity significantly decreased with the COVID-19 pandemic ($p < 0.001$), which was observed in both sexes and all age groups. However, no significant changes were found in alcohol and sedative drug consumption.

CONCLUSION: The findings indicate a substantial reduction in tobacco use during the early phase of the pandemic in North Cyprus. No significant changes were observed in alcohol or sedative drug consumption during the early pandemic period, and both substances showed consistently low-risk levels based on ASSIST classifications.

Keywords: COVID-19, alcohol, tobacco, sedative drugs, ASSIST scale, Cyprus

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INTRODUCTION

In late 2019, a pandemic of cases with severe acute respiratory syndrome coronavirus 2 spread from Wuhan, China, to the rest of the world, resulting in a global coronavirus disease-2019 (COVID-19) pandemic. COVID-19 is known to be a severe acute respiratory syndrome, showcasing symptoms such as fever, cough, sore throat, breathlessness, fatigue, and malaise. The disease, however, can be mild in most people; it can be fatal in others, particularly the elderly and immunocompromised.¹ The high transmission rate of COVID-19 led countries to implement a serious set of rules for all citizens. Social distancing, wearing masks, restrictions on going out, and the closure of all restaurants, entertainment places, and schools were just a few of the measures implemented during the COVID-19 pandemic. These restrictions led to rapid changes in people's lifestyles and quality of life. Combined with unemployment, the effects of certain factors they also negatively affected the economy. This, in turn, had further adverse effects on health and social life. Cumulative factors of the COVID-19 outbreak create anxiety and fear for people's health and jobs, and force them to live an unfamiliar lifestyle, and be deprived of relationships. These emotions affected every individual; however, conditions among people with pre-existing psychological issues may have worsened during the pandemic. Additionally, the problem of the recent era, infodemic on social media, also induces psychiatric problems. Anxiety, depression, sleep problems, obsessive behaviors, and post-traumatic stress disorder are mainly reported psychiatric problems during COVID-19.²⁻⁶ All these mental health problems and a stressful lifestyle are known to be risk factors for increased use of alcohol, tobacco, and sedative drugs. Sedative drugs are also commonly used for the treatment of anxiety and insomnia.⁷ It is reasonable to expect COVID-19 to affect the use of these substances. Starting from the first months of the pandemic, research articles on the changing usage patterns of these substances began to appear in the literature. COVID-19 has affected addictions in different ways due to the stressful times during the pandemic and lockdown, impacting consumption patterns. Restrictions might have also limited product availability and healthcare access for patients undergoing treatment for addictions, increased the withdrawal syndromes during the pandemic.^{8,9}

With the first imported case in North Cyprus at the beginning of March 2020, strict restrictions were suddenly implemented, including the closure of all areas except the sectors that provide health, safety, and basic life needs.¹⁰

This study aimed to determine the effect of the early COVID-19 pandemic and lockdown period on alcohol, tobacco, and sedative drug consumption among North Cyprus residents, to identify the risk factors for high-risk usage.

MATERIALS AND METHODS

This study was conducted between November 2019 and June 2020, covering the first three months of the COVID-19 pandemic (March-June 2020) and the preceding three-month period (December 2019-February 2020). The study was approved by the Eastern Mediterranean University Research and Publication Ethics Committee Health Subcommittee before data collection (approval number: ETK00-2021-0083/ETK00-2021-009, date: 07.04.2021).

The target population consisted of adults aged 18 years and above residing in North Cyprus. The sample size was calculated as 270 participants based on the adult population of Region¹¹ and a confidence level of 90%, using Cochran's formula for sample size estimation. A total of 280 participants were ultimately included. Recruitment was carried out via Facebook groups with large local memberships, using a snowball sampling method. An anonymous online questionnaire, hosted on a secure platform, was distributed via private messages. Participants were encouraged to share the link with other eligible individuals. Informed consent was obtained electronically before survey participation.

The survey included demographic questions (age, gender, marital status, living location, education, employment, household type, income change during the pandemic, and psychiatric diagnosis history) and the validated Turkish version of the alcohol, smoking, and substance involvement screening test (ASSIST) that was developed by the World Health Organization (WHO).¹² The ASSIST questionnaire evaluates substance involvement risk levels for tobacco, alcohol, and sedative/hypnotic drugs. In this questionnaire, the risk level is based on the frequency of use of the relevant substance and its effects on daily life. Scores are assigned for each frequency. Frequencies are grouped as "Never, once or twice in 3 months, monthly, weekly, and daily/almost daily", and the score increases with increasing frequency of occurrences. The total score for each substance is calculated by adding all scores, and varies between 0 and 39. According to the ASSIST scoring guidelines, for tobacco and sedative drugs, scores of 0-3 indicate low risk, 4-26 indicate moderate risk, and 27 or above indicate high-risk. For alcohol, scores of 0-10 indicate low risk, 11-26 indicate moderate risk, and 27 or above indicate high-risk. Participants were asked to complete the ASSIST questionnaire for two distinct time points: the three months before the pandemic and the first three months during the pandemic, including the initial lockdown period.

Statistical Analysis

All data were analyzed using IBM SPSS Statistics version 22.0. To compare the differences in substance use before and during the pandemic, McNemar's chi-square test was applied for paired categorical data. Comparative analyses of ASSIST scores before and during the pandemic were conducted using Paired Samples t-tests. A p-value of <0.05 was considered statistically significant.

RESULTS

A total of 280 individuals took part in the study. The majority were female (61.8%), and the mean age was 46.5 years. Most participants were between 18 and 45 years old (85%), single (50%), university graduates (69.6%), and employed (61.1%). A large proportion lived in urban areas (71.8%) and in nuclear family settings (87.1%). Nearly half reported a decrease in household income during the pandemic. Additionally, 8.6% had a previously diagnosed psychiatric condition. Descriptive statistics for the study sample are presented in (Table 1).

According to responses to the first item of the ASSIST questionnaire, whether the participant had ever used the listed substances, self-reported use decreased across all substance categories during the early COVID-19 period. For alcohol, 236 participants (84%) reported lifetime use before the pandemic, which dropped to 206 participants (74%) during the first three months of the pandemic (McNemar $p < 0.001$). Tobacco use similarly decreased from 142 participants (51%)

before the pandemic to 117 participants (42%) during the same period (McNemar $p < 0.001$). For sedative drugs, reported use declined from 37 participants (13%) to 16 participants (6%) (McNemar $p < 0.001$). These results demonstrate statistically significant reductions in substance use during the early phase of the pandemic (Table 2).

As indicated by the ASSIST questionnaire responses, the tobacco involvement risk score significantly decreased during the COVID-19 period, as the mean risk score for tobacco involvement was 9.90 ± 7.549 before the pandemic and 5.81 ± 8.723 during the pandemic ($p < 0.001$). In contrast, there was no significant change in alcohol, (5.81 ± 5.653 vs. 5.75 ± 6.404), or sedative drug involvement risk scores, (1.09 ± 0.316 vs. 1.07 ± 0.309), before and during the pandemic (Table 3).

Based on the ASSIST substance involvement risk classification, alcohol involvement risk remained predominantly low both before (89.6%) and during (88.6%) the pandemic (Table 4). Tobacco involvement risk was categorized as moderate for 86.8% of participants before the pandemic, whereas 65% were classified as low risk during the pandemic (Table 4). Sedative drug involvement risk levels before the pandemic were high in 1%, moderate in 6%, and low in 93% of participants, while during the COVID-19 period, these levels were high in 1%, moderate in 4%, and low in 95% (Table 4).

Comparative analyses revealed that substance involvement risk levels for alcohol and tobacco did not significantly differ across any demographic categories, either before or during the pandemic. In contrast, the risk of sedative drug involvement was significantly higher among participants with lower education levels and those with a psychiatric diagnosis in both periods (Table 5).

Table 6 presents tobacco use frequency before and during the COVID-19 period, by gender and age groups. In the pre-pandemic period, the majority of both females and males across all age groups reported using tobacco 5-7 days a week (approximately 85%). In contrast, during the first three months of the pandemic, around 60% of both females and males across all age groups reported not smoking at all. This difference was most pronounced among males and participants aged 25-45.

DISCUSSION

In this study, which examines the early effects of the pandemic, a significant decrease was observed in cigarette use within North Cyprus. There was no significant change in the frequency of alcohol and sedative use. Different results on smoking have been reported in publications from all over the world, and even among participants included in the same study. Alongside those reporting an increase in use, an increase in attempts to cut has also been reported. In the study conducted by Klemperer et al.¹³ from the United States, it was determined that

there was an increase in the number and frequency of use among those who use cigarettes and electronic cigarettes with a degree of addiction. Conversely, 1/3 of the participants turned this period into an opportunity to quit.¹³ A study examining the early stages of the pandemic in the United States found that many people attempted to cut down on smoking due to concern that they would be more affected by COVID-19; however, more people reported an increase in smoking.¹⁴

Table 1. Sociodemographic characteristics of the participants

Variable	Categories	Frequency percentage
Gender	Male	107 (38.2%)
	Female	173 (61.8%)
Age	18-25	111 (39.6%)
	26-45	127 (45.4%)
	46-65	39 (13.9%)
	66-75	3 (1.1%)
Marital status	Single	140 (50%)
	Married	123 (43.9%)
	Divorced	16 (5.7%)
	Widow	1 (0.4%)
Birth place	Cyprus	228 (81.4%)
	Turkey	35 (12.5%)
	Other	17 (5.4)
Living region	City	201 (71.8%)
	Village	79 (28.2%)
Working status	Yes	171 (61.1%)
	No	109 (38.9%)
Educational status	No education	1 (0.4%)
	Primary school	2 (0.7%)
	Secondary school	7 (2.5%)
	High school	75 (26.8%)
	University	195 (69.6%)
Household type	Alone	22 (7.9%)
	Nuclear family	244 (87.1%)
	Extended family	14 (5%)
Salary change with COVID	Decreased	136 (48.6%)
	Increased	9 (3.2%)
	Not changed	135 (48.2%)
Pre-COVID psychiatric diagnosis	Yes	24 (8.6%)
	No	256 (91.4%)

COVID: Coronavirus disease.

Table 2. Alcohol, tobacco and sedative drug use before and during COVID-19

	At least one time usage, before COVID-19		At least one time usage, during COVID-19		p-value [†]
Alcohol	Yes	236 (84%)	Yes	206 (74%)	<0.001
	No	44 (16%)	No	74 (26%)	
Tobacco	Yes	142 (51%)	Yes	117 (42%)	<0.001
	No	138 (49%)	No	163 (58%)	
Sedative drugs	Yes	37 (13%)	Yes	16 (6%)	<0.001
	No	243 (87%)	No	264 (94%)	

[†]p-value from Mc Nemar chi-square test. COVID-19: Coronavirus disease-2019.

Table 3. Alcohol, tobacco and sedative drug involvement risk scores in the pre-COVID-19 and COVID-19 period

	Pre-COVID-19 period mean score $\pm$ std. dev.	Early COVID-19 period mean score $\pm$ std. dev.	p-value [‡]
Alcohol involvement risk level	5.81 $\pm$ 5.653	5.73 $\pm$ 6.404	0.851
Tobacco involvement risk level	9.90 $\pm$ 7.549	5.81 $\pm$ 8.723	<0.001
Sedative drug involvement risk level	1.090.316	1.070.309	0.372

[‡]p-value from paired sample t-test. COVID-19: Coronavirus disease-2019, std. dev.: Standard deviation.

Table 4. Alcohol, tobacco and sedative drug involvement risk classification in the pre-COVID-19 and COVID-19 periods

	Pre-COVID-19 period n (%)			COVID-19 period n (%)		
	Low	Moderate	High	Low	Moderate	High
Alcohol involvement risk category	25 (89.6%)	24 (8.6%)	5 (1.8%)	248 (88.6%)	25 (8.9%)	7 (2.5%)
Tobacco involvement risk category	21 (7.5%)	243 (86.8%)	16 (5.7%)	182 (65%)	84 (30%)	14 (5%)
Alcohol involvement risk category	260 (92.9%)	18 (6.4%)	2 (0.7%)	265 (94.7%)	13 (4.6%)	2 (0.7%)

COVID-19: Coronavirus disease-2019.

Table 5. Pre-COVID-19 and COVID-19 period sedative involvement risk scores according to demographics

Variable	Categories	Pre-COVID-19 period sedative involvement risk scores		COVID-19 period sedative involvement risk scores	
		Mean $\pm$ SD	p-value	Mean $\pm$ SD	p-value
Gender	Male	1.09 $\pm$ 5.09	0.763 [§]	1.07 $\pm$ 5.41	0.976 [§]
	Female	1.27 $\pm$ 4.06		1.09 $\pm$ 4.46	
Age	18-25	1.39 $\pm$ 5.40	0.222 [‡]	1.56 $\pm$ 6.14	0.095 [‡]
	26-45	1.39 $\pm$ 4.96		0.97 $\pm$ 4.23	
	46-65	0.28 $\pm$ 0.57		0.12 $\pm$ 0.57	
	66-75	0.00 $\pm$ 0		0 $\pm$ 0	
Marital status	Single	1.15 $\pm$ 4.63	0.198 [§]	1.26 $\pm$ 5.33	0.517 [‡]
	Married	0.79 $\pm$ 3.40		0.40 $\pm$ 2.20	
	Divorced	4.87 $\pm$ 10.86		4.81 $\pm$ 10.62	
	Widow	0.00 $\pm$ 0.00		0 $\pm$ 0	
Household type	Alone	2.13 $\pm$ 6.17	0.34 [‡]	2.13 $\pm$ 6.99	0.186 [‡]
	Nuclear family	1.14 $\pm$ 4.75		1.05 $\pm$ 4.74	
	Extended family	0.71 $\pm$ 2.67		0 $\pm$ 0	
Educational status	Less than 9 year education	5.80 $\pm$ 11.06	0.018 [§]	6.00 $\pm$ 12.72	0.006 [§]
	More than 9 year education	1.03 $\pm$ 4.34		0.90 $\pm$ 4.23	
Pre-Covid psychiatric diagnosis	Yes	7.12 $\pm$ 0.94	<0.001 [§]	7.62 $\pm$ 11.55	<0.001 [§]
	No	0.64 $\pm$ 3.54		0.47 $\pm$ 3.02	

[§]p-value from Independent Samples t-test. [‡] p-value from One-Way ANOVA test. COVID-19: Coronavirus disease-2019, SD: Standard deviation.

Studies from the Netherlands and Poland reported an increase in cigarette use at similar rates and a decrease in some participants.^{15,16} A study from Belgium reported an increase in smoking and alcohol use during the pandemic period.¹⁷

Much of the evidence on this issue has come from developed countries. The limited articles from developing countries show that although it is thought, that the degree of development of the countries may affect the attitude towards smoking, the results are similar to those of developed countries. In a study from Pakistan, which reported different results in the same study group, Siddiqi et al.¹⁸ mentioned that 14% of the

participants quit smoking, while 68% of those who continued showed a decreasing trend in smoking, and an increase of 18% was observed. However, it is unclear what the increase referred to.

Studies rapidly added to the literature during the pandemic, along with systematic reviews and meta-analyses that compiled these studies indicated that the disease was more severe in smokers and had a less serious course in non-smokers.¹⁹⁻²⁴ With the arrival of information about the negative effects of smoking, on COVID-19 spread and course, some countries have introduced very strict bans to prevent the spread among the public throughout the country. For example, during the pandemic, sales of tobacco products were banned in India and South Africa.²⁵

Table 6. Tobacco usage frequency in the pre-COVID-19 and COVID-19 period

How often did you use tobacco products?	Gender n (%)		Age n (%)				Total
	Female	Male	18-25	26-45	46-65	66-75	
In the last three months before the COVID pandemic,							
None	6 (3.5)	5 (4.7)	9 (8.1)	1 (0.8)	1 (2.6)	0	11 (3.9)
Once or twice	1 (0.6)	2 (1.9)	0 (0.0)	2 (1.6)	1 (2.6)	0	3 (1.1)
1-3 times a month	17 (9.8)	8 (7.5)	7 (6.3)	15 (11.8)	3 (7.7)	0	25 (8.9)
1-4 days a week	2 (1.2)	2 (1.9)	1 (0.9)	2 (1.6)	1 (2.6)	0	4 (1.4)
5-7 days a week	147 (85.0)	90 (84.1)	94 (84.7)	107 (84.3)	33 (84.6)	3 (100)	237 (84.6)
In the first three months after the lockdown of the COVID pandemic,							
None	103 (59.5)	73 (68.2)	63 (56.8)	87 (68.5)	24 (61.5)	2 (66.7)	176 (62.9)
Once or twice	13 (7.5)	14 (13.1)	10 (9.0)	14 (11.0)	3 (7.7)	0	27 (9.6)
1-3 times a month	13 (7.5)	6 (5.6)	9 (8.1)	8 (6.3)	2 (5.1)	0	19 (6.8)
1-4 days a week	10 (5.8)	4 (3.7)	7 (6.3)	3 (2.4)	4 (10.3)	0	14 (5.0)
5-7 days a week	34 (19.7)	10 (9.3)	22 (19.8)	15 (1.8)	6 (15.4)	1 (33.3)	44 (15.7)

COVID-19: Coronavirus disease-2019.

The result of our study in our developing country reflects a significant decrease in smoking. Studies reporting an increase, primarily blamed stress triggered by the pandemic. Our study evaluated the first 3 months of the COVID-19 pandemic and the early phase of the shutdown. In our study examining the early period, concerns about COVID-19 disease may be more prominent than the stressors that accumulate over time. For this reason, in the early period of the pandemic, a decrease may have been observed in the study. Although there are no special restrictions on cigarette products due to the pandemic in our country, economic difficulties and the lockdown may also have affected the purchase of these products. In addition, it has been observed that even in those with high-risk use, the intense usage did not prevent attempts to quit or reduce smoking. With the findings of studies containing similar observations, researchers emphasized that these findings should be reflected in public health practices and smoking cessation. The WHO also stated this in its public announcements.^{22,23,26}

Studies on alcohol came mostly from Europe. This study is one of the few studies on this subject in our region. In our study, no significant change in alcohol use was found during the pandemic. Information from countries, on alcohol use, is similar to that on smoking. In the study conducted on the Polish population, it was stated that while there was an increase in certain characteristics among some participants, there was a decreasing trend in the use were observed at a similar rate.¹⁶ Studies from Norway and Belgium examining the early period of the pandemic have found increased alcohol consumption. In these studies, increased use was associated with economic concerns related to lockdowns.^{17,27}

The socioeconomic challenges brought by the COVID-19 pandemic have triggered many mental health problems. This may lead patients to be more prone to taking benzodiazepine medication in a manner similar to alcohol consumption. Additionally, it could in many cases result in addiction or misuse. According to a study conducted in the United States, there has been, during the COVID-19 pandemic, an increase of about thirty-four percent in the prescription of anxiolytics and other sedative drugs.⁷ On the contrary, another study from the United States of America showed that there has been a significant decrease in

sedative drug usage, that has been later correlated with the fact that this decrease was due to a decrease in prescription fillings by patients due to the lockdown during the pandemic.²⁸

However, in our study, the ASSIST score of sedative usage before and during the COVID-19 pandemic has not indicated a significant difference; only a very slight decrease was observed in the first three months of the pandemic, possibly due to restrictions. Since the evaluation is made over a short period, it can be expected that there will be no change. In the long term, the effect of COVID-19 on psychiatric diseases and sedative use may be more variable.

In addition, the study revealed that smoking in Cyprus was quite prevalent before the pandemic. The study was conducted with 280 North Cyprus residents and revealed that in the pre-COVID-19 period, the prevalence of tobacco usage was 96.1% and alcohol usage was 84.3% in North Cyprus. According to the first study conducted on this topic in North Cyprus among the age group of 18-65, the prevalence of consumption from 2003 to 2015 ranged from 62.1-66% for tobacco and 68.5-82.3% for alcohol.²⁹ Our study results show that the measurements were higher for alcohol consumption and especially for tobacco usage. In a recent study conducted in Northern Cyprus with a large number of participants, the smoking rate was reported as 40.7%, above the world average.³⁰ Studies conducted at medical faculties in the same region also revealed similar results for smoking.^{31,32} The first study also revealed that the lifetime prevalence of sedative/hypnotic drug use was about 5.7% between the years 2003 and 2015.³¹ Similarly, we have recorded about 6.4% misuse of sedative drugs and about 0.7% addiction among the population of the study. The results prove that sedative drug misuse is still a problem in North Cyprus. Relatively, in our study, we recorded that people older than twenty-five had more frequent use of these drugs before the pandemic, but this trend reversed, showing that younger people had the highest frequency of using these drugs after the pandemic. Our study also revealed that individuals with psychiatric problems, lower levels of education, as well as divorced or lonely individuals, had higher scores for sedative usage in the ASSIST score system.

Study Limitations

The study includes certain limitations. The researcher has little control over the sampling method. The snowball sampling technique may cause some sampling bias. Additionally, this study was performed using an online questionnaire during the pandemic. Researchers cannot be sure, that the subject and questions are fully understood in online research on such survey topics. In addition, the participants may not have felt very confident because of questions about psychiatric conditions and substance use.

CONCLUSION

To conclude, the decrease in tobacco usage is significant in our study, and this decrease is obviously due to the COVID-19 pandemic. The decrease was not limited to any of the genders or the age groups; other life circumstances might have had an effect as well. Our results may also support that it is the best time for North Cyprus to initiate efforts for quitting smoking. This pandemic-induced action may protect the population from common smoking-related health problems. Lastly, although there was no change in the use of alcohol and sedatives in the early period of the pandemic, it was noted that alcohol use was common among the participants, and the prevalence of sedatives at high-risk levels could not be underestimated.

MAIN POINTS

- Tobacco consumption significantly decreased with the coronavirus disease-2019 pandemic.
- No significant changes were observed in alcohol and sedative drug use.
- According to the alcohol, smoking, and substance involvement screening test scale, tobacco use was classified as moderate risk among a large proportion of participants in North Cyprus before the pandemic.

ETHICS

Ethics Committee Approval: The study was approved by the Eastern Mediterranean University Research and Publication Ethics Committee Health Subcommittee (approval number: ETK00-2021-0083/ETK00-2021-009, date: 07.04.2021).

Informed Consent: Informed consent was obtained from each participant.

Footnotes

Authorship Contributions

Concept: A.E., N.İ.A., A.M.F.S., A.B.İ., D.A., L.Ç., M.H., M.M.A.A., M.O.H.A., R.T., S.F., Design: A.E., N.İ.A., A.M.F.S., A.B.İ., D.A., L.Ç., M.H., M.M.A.A., M.O.H.A., R.T., S.F., Data Collection and/or Processing: A.E., N.İ.A., A.M.F.S., A.B.İ., D.A., L.Ç., M.H., M.M.A.A., M.O.H.A., R.T., S.F., Analysis and/or Interpretation: A.E., N.İ.A., A.M.F.S., A.B.İ., D.A., L.Ç., M.H., M.M.A.A., M.O.H.A., R.T., S.F., Literature Search: A.E., A.M.F.S., A.B.İ., D.A., L.Ç., M.H., M.M.A.A., M.O.H.A., R.T., S.F., Writing: A.E., N.İ.A., A.M.F.S., A.B.İ., D.A., L.Ç., M.H., M.M.A.A., M.O.H.A., R.T., S.F.

DISCLOSURES

Conflict of Interest: The authors declare that they have no conflicts of interests.

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