

ORIGINAL RESEARCH

Craving among Synthetic Cannabinoid Users: A Qualitative Approach

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Main Points

- For synthetic cannabinoid users, craving is an experience that has emotional, behavioral, and cognitive aspects.
- Craving is an unavoidable, uncontrollable desire, and a desire for pleasure in terms of effect. Smoking can continue automatically, one after another throughout the day. It does not matter whether any desire is accompanied or not.
- They make great efforts to supply the substance for example they go to the places where the substance is sold many times or to get the substance first thing in the morning.
- There are repetitive thoughts that always say "go and smoke". Synthetic cannabinoid is constantly in their mind.
- It has positive effects such as relaxation, disconnection from everything, pleasure, happiness, and relieving troubles. These effects can be imagined visually by the users and experienced in this way.

Abstract

Synthetic cannabinoids are accepted as new-design substances with strong addictive properties. The development of addiction in users is linked to craving. Persistent craving, which is defined as a strong subjective urge to use drugs, is a key clinical symptom criterion for addiction-related disorders in the Diagnostic and Statistical Manual of Mental Disorders-5. This study explores the craving experiences of synthetic cannabinoid users. Therefore, elaboration of craving experiences of synthetic cannabinoid users will contribute to a better understanding of it and to the development of new treatment strategies. The research was designed as an interpretive phenomenological analysis to investigate the craving phenomenon in depth. Face-to-face interviews were carried out using semi-structured interview forms developed by the researcher. The data were collected from 11 participants who were users of the synthetic cannabinoids known as Bonsai and Jamaica in Turkey. The findings revealed that craving is an experience that has emotional, behavioral, and cognitive dimensions for synthetic cannabinoid users. The results also showed that craving is expressed as "want." This want is uncontrollable and has the purpose of obtaining pleasure. The act of smoking the substance can continue automatically. Its addictive effects such as relaxation, pleasure, happiness, and relieving troubles can be imagined and experienced visually by the users.

Keywords: Craving, synthetic cannabinoid users, phenomenology, qualitative research, synthetic cannabinoids

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Introduction

Synthetic cannabinoids have an important place among the new psychoactive substances, also known as "legal highs," "designer substances," "herbal highs," and "research chemicals" (Atwood et al., 2010). The use of synthetic cannabinoids is alarming, mainly owing to the significant side effects that

develop after the use of these novel-design substances and the lack of rigorous human studies on this topic. Chronic use of synthetic cannabinoids can cause severe cognitive impairment and development of addiction (Kavanagh et al., 2015). The development of addiction in synthetic cannabinoid users is associated with withdrawal, craving, and the urge to continue using the substance despite their nega-

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tive consequences (Fattore & Fratta, 2011). In terms of substance addiction, craving has been defined as “strong compulsive desire or intention to use the substance” and “strong subjective urge to use substances” (American Psychological Association [APA], 2013; Öztürk & Uluğ, 1992). In Diagnostic and Statistical Manual of Mental Disorders-5 (DSM-5), craving is considered a key clinical symptom criterion for the addictive disorders. It is stated that substance use behavior in addiction turns into a process of compulsive substance consumption, and this transformation is caused by an intense desire that will inevitably lead addicts to develop an obsessive desire for drugs (Robinson & Berridge, 1993). Craving is an activation that leads a person to consume substances in addiction. Studies have shown that craving is a predictor of relapse and causes the substance or behavior to come into play. Craving is important because as one gets addicted, it causes self-injurious behavior (Manejwala, 2013), and the management of craving is the main focus of the current treatment strategies (Tiffany & Wray, 2012; Volkow et al., 2006). According to a research, the factors that can cause craving in synthetic cannabinoid users include obsessive thoughts and dreams about the use and also include imagining the use of synthetic cannabinoids (Khosravani et al., 2017). Phenomenological models of craving involve description of information obtained through interviewing and observing clinically dependent individuals. This phenomenological power comes from its focus on people’s experiences. Phenomenological studies are popular because they can easily reveal addiction-related symptoms such as craving and contribute to diagnostic interviews (Drummond, 2001). As Meyer (2000) noted, there is a need to clarify the phenomenology of craving. Craving is a subjective state, and studies should focus on understanding the phenomenology of the subjective experience of craving. The descriptions of craving by substance users may provide the basis for the formulation and testing of new hypotheses about the nature of craving (Merikle, 1999). When the literature is examined, qualitative studies have been found on the craving experiences of alcohol (Ludwig et al., 1974), methamphetamine (Bruehl et al., 2006), and cocaine (Chaves et al., 2011) users. A phenomenological analysis of synthetic cannabinoid craving has not been undertaken. This research has the potential to provide information on the extent of users’ interpretations of craving (Sayette et al., 2000), which may provide insights on the measurement of craving and perhaps the theoretical underpinnings of craving (Drummond et al., 1995).

The aim of study to examine the subjective experience of craving in synthetic cannabinoid users using phenomenological analysis.

Methods

It is important to consider craving in a context that allows the preservation of the richness of an individual’s subjective experience (Shadel et al., 2001). Therefore, this study used a phenomenological design. Interpretative phenomenological analysis has been adopted as a methodological approach to explore in depth the craving experiences of synthetic cannabinoid users. Interpretative phenomenological analysis has been defined as a specific research methodology owing to the difficulties of overemphasizing the importance of quantitative approaches in psychological research, and it has been argued that a paradigm shift is necessary to improve research in the field and thereby deepen the psychological knowledge (Smith, 1996). This research focused on understanding the phenomenology of the subjective craving ex-

perience. For the research, approval was obtained from the Ege University Medical Research Ethics Committee on May 15, 2015.

Participants

Patients who applied to the Ege University addiction outpatient clinic because of the use of synthetic cannabinoids, who applied for inpatient treatment at the addiction service, or who previously applied for treatment were contacted. They were individuals who used or continued to use either Jamaica or Bonsai. Particular attention was paid to the fact that the participants were only addicted to synthetic cannabinoids, and it was clarified by examining the patient files, consulting the physician in charge, and also by asking the patient what he thought he was addicted to. Because interview and observation are the most frequently used data collection methods in qualitative research, it was not possible to work with a large sample group in terms of both time and cost. In addition, a large sample size would cause difficulties in analyzing the large-scale data obtained through observation and interview (Karataş, 2016). Nevertheless, some authors have determined the appropriate number of participants required for accurate data. For example, the authors (Auerbach & Silverstein, 2003) have stated that the number of participants between 8-14 was appropriate for sufficient data collection. In qualitative research, the sample is created with the participants who have knowledge and experience in research and want to communicate on this subject. Accordingly, a total of 14 participants were included in this study. However, 3 of these participants were excluded as it was determined during the interview process that they were addicted to not only synthetic substances but also to many other substances. Adequate data for this research were provided by 11 participants. All the participants were male (Table 1) who were aged between 18 and 38 years.

Data Collection Process and Procedure

In this study, a semi-structured interview form was designed for examining participants’ data regarding their experience of using synthetic cannabinoids. Face-to-face interviews were carried out using semi-structured interview forms developed by the researcher. The questions in the form included general questions about craving. Questions such as what craving means for them were asked. Although the researcher basically used a semi-structured form, many additional questions with phenomenological features were directed to obtain detailed data from the participants. All questions were about the same topic. The semi-structured interview form was presented to 3 faculty members, and a few changes were made, such as adding and removing some questions. The interviews were conducted between April and July 2019. Some of the interviews were conducted in the Ege University Addiction Polyclinic and Bozyaka Training and Research Hospital in rooms having conditions suitable for conducting an interview. All the interviews were recorded on a tape recorder. Translating the interviews into written text was done by the researcher herself by listening to the audio recordings. The contents of the recordings were completely transcribed into Word documents on a computer. In total, 146 pages of data were obtained in Times New Roman 12-point font and with 1.5 line spacing, justified on back and front pages. The page range for each interview varied between 6 and 16.

Statistical Analysis

This study adopted the following steps proposed by Smith (2009) during the interpretative phenomenological analysis of the data.

Table 1.
Participants' Sociodemographic Features

Name	Age (years)	Marital status	Education	Profession	Substance type	Using status	Duration of use (years)	Treatment	Interview date and duration	Transcription pages
Ozan	27	Single	Secondary school	Employee	Bonsai	Continuing	7	Inpatient	April 16 24 minutes	10
Cem	18	Single	High school	Tradesman	Bonsai	Not used since 2 months	3	Outpatient	June 19 38 minutes	15
Mehmet	34	Married	Primary school	Employee	Jamaica	Not used since 7-8 months	2	Outpatient	June 24 44 minutes	16
Şevki	38	Married	Unschooling	Unemployed	Jamaica	Not used since 6 months	4-5	Outpatient	June 24 30 minutes	12
Mahir	29	Married	College education	Tradesman	Jamaica	Continuing	4-5	Outpatient	June 25 38 minutes	14
Ferit	22	Single	High school	Employee	Bonsai	Not used since 20 months	8	Treatment finished	June 27 45 minutes	15
Eser	31	Married	Secondary school	Tradesman	Bonsai	Continuing	5	Outpatient	June 28 14 Minutes	6
Gökmen	30	Single	High school	Tradesman	Jamaica	Not used since 8-9 months	4	Outpatient	July 1 29 minutes	10
Kerem	25	Single	High school	Employee	Bonsai	Not used since 12 months	5	Outpatient	July 1 47 minutes	15
Murat	26	Single	Secondary school	Employee	Bonsai	Continuing	5-6	Outpatient	July 1 23 minutes	8
Sinan	32	Married	Primary school	Employee	Jamaica	Not used since 12 months	6-7	Outpatient	July 3 38 minutes	13

In a qualitative research analysis, it was emphasized that the interview transcript should be transcribed verbatim into a hard copy. It should then be analyzed using codes and categorization for analysis (that is, common themes) (Alase, 2017).

The transcript for this research was read several times to familiarize ourselves with the content and to understand it better. Phenomenological coding was then performed with an aim to produce a comprehensive and detailed note and comment set about the data. This stage is the process of defining important objects for the participants, such as relationships, processes, places, events, values, and principles and the meaning of these for the participant. At this stage, the researcher stayed close to the participant's explicit meaning (Smith et al., 2009).

These codes, which were the analysis units, were brought together and associated with each other starting with the first case in this stage. The codes were categorized on the basis of the partnership between them. Some codes were clustered together and others emerged as high-level concepts. The analysis was continued for all other participants. This stage involved searching for links across the cases. The categories acquired when analyzing the first participant (Ozan) could be used to guide the analyses. In case of each new participant, it was discussed whether the codes fit into the categories. The categories were drawn together, and this resulted in several superordinate themes for the group, each with a number of related categories. In the results of the analysis, the categories were presented as sub-themes.

Results

The emotional quality of craving was in the form of an uncontrollable constant desire, a desire for pleasure, and a time-limited desire (Table 2).

For uncontrollable continuous desire, 81.8% ($f=9$) of synthetic cannabinoid users reported an ongoing desire that they had difficulties in preventing and controlling.

Table 2.
Superordinate and Sub-Themes, Phenomenological Codes, and Frequency of Participants

Superordinate themes and sub-themes (and the English translation of the statements)	Examples of phenomenological codes	Number of participants (f)	%
Emotional			
Uncontrollable constant desire	Not to be able to stop smoking (Ozan), desire despite being bad (Cem), to smoke as soon as possible (Ferit), desire despite the obstacles (Kerem), it arouses a lot of desire (Sinan), wanting every day (Murat), want to smoke despite the negativity (Mahir), not to be able to prevent desire (Mehmet), constantly wanting smoke (Şevki).	9	81.8
A desire for pleasure	Higher experience desire (Ozan), pass out (Cem), high head (Gökmen), quickly get high (Kerem), need the same pleasure (Mahir), smoke for high (Şevki).	6	54.5
A time-limited desire	Want from time to time (Cem), sudden passion (Ferit.), like a hay flame (Mehmet), craving does not take all day long (Murat), sometimes remembered sometimes not (Şevki).	5	45.4
Behavioral			
Automatic smoking behavior	Continuous smoking after a single smoke (Ozan), smoking even if did not feel like (Cem), smoking 300 caps (Ferit), 30- 40 oak a day (Gökmen), continue after once (Kerem), smoking every 15 minutes (Sinan), smoking for short periods (Mahir), smoking until finish (Mehmet), smoking until morning (Şevki).	9	81.8
Striving to acquire the substance	Visit frequently for obtain substance (Ozan), going to the place where it is sold in the mornings (Cem), try to find money (Ferit), just get it and smoke (Gökmen), give a lot of money (Kerem), seeking money (Sinan), focusing on money to obtain the substance (Mehmet), tendency to violence for substance (Şevki).	8	72.7
Smoking behavior despite the risk	To smoke everywhere (Kerem), to smoke everywhere (Sinan), to smoke everywhere (Mehmet).	3	27.2
Cognitive			
Repetitive thoughts about substance	Smoke smoke smoke (Ozan), trigger thoughts/go and smoke (Eser), inner voice saying smoke (Murat), remember over and over again (Mehmet), constantly says smoke (Şevki).	5	45.4
Substance is the only item to focus on	The meaninglessness of things out of substance (Cem), the substance is everywhere in life (Ferit), constantly thinking about it (Gökmen), be overwhelmed with substance thinking (Kerem), constantly locking in it (Sinan), not think about anything other than smoking (Murat), only desire to attain substance (Mehmet), focusing only on substance smoking (Şevki).	8	72.7
Positive effects of substance and dreams and memories about these effects	Relaxation, dreaming of relaxation (Ozan), disconnection from everything, imagine the head (Cem), pleasure, dreams of relaxation (Eser), relaxation (Ferit), being happy, beautiful funny moments (Gökmen), ignoring things, fictionalizing that desired things will happen (Kerem), unconscious shaky head, imagine the head (Sinan), the inability to forget the pleasure it gives, imagine of being able to overcome the problems (Mahir), calm down (Murat), having a head, not caring about anything, to dream of imagines (Mehmet), relieving troubles (Şevki).	11	100

Although Cem thought that Bonzai was bad, he stated how much he wanted it. *“If you only know how bad it is, but I still wanted so much... I could not cope at all.. I always have cravings no matter how much I smoke, (Cem).”*

“It always aroused such desire... But it arouses a lot of desire (Sinan).”

Mahir explained the difference between the feeling of deprivation and the current craving process. *“I can overcome the feeling of deprivation, now I can deal with it...But as I said...For example, I want to smoke during the day. I want it not in my hand... I want to smoke all the time (Mahir).”*

In terms of pleasure, 54.5% (f=6) of the participants stated that the desire was about pleasure. The participants expressed their desire for pleasure with an increase in the amount of use owing to the fact that the same amount of substance did not give the same pleasure.

“I take one cap. I want to experience a higher level while taking second but second cap doesn’t provide a higher experience. So I take third cap. Forth cap. Each one following the other (Ozan).”

“Nothing can match its pleasure... Very high head, very beautiful head yes (Gökmen).”

45.4% of the participants (f=5) stated that their cravings were short-term, and the urge to consume the substance had a short duration. The participants wanted the substance from time to time. They stated that when the substance was not being consumed, the urge disappeared, it came to mind for a moment, and then was forgotten; the urge was not felt throughout the day.

When asked what the craving meant for him, Ferit described it as an instant wanting. *“Craving, that instant soul desires (Ferit).”*

The behavioral quality of craving was divided into sub-themes, such as automatic smoking behavior, striving to acquire the substance, and smoking behavior despite knowing the risk (Table 2).

Among the participants, 81.8% (f=9) mentioned behavior patterns caused by craving and associated with smoking the substance.

Cem described his automatic smoking behavior as smoking constantly even if he did not feel like doing it. *“I was smoking 24 hours a day, day and night... others were smoking once, I constantly smoke... even if I don't feel like it, until I get high... (Cem).”*

Another participant said, *“I was smoking 30-40 oaks a day... I was just thinking that I was going to get over its crisis, but then never mind go ahead... the thing in Jamaica is something like this: you just take it and smoke... (Gökmen).”*

The participants explained what they did to obtain the substance, how often they went to the places where the substance was sold, and their efforts to obtain the supply of the substance the first thing in the morning.

Gökmen gave an example by telling his memory of what he did to acquire the substance during his craving: *“I went with a motor in that rain and drenched and knocked on people's door at four o'clock at five o'clock in the morning and begged them please give it to me... You don't want it to end (Gökmen).”*

Some of the participants (27.2%, f=3) mentioned what kind of behaviors they engaged in while craving despite knowing the risk. Here it was intended to express how the participants lost control over their behavior and acted despite knowing the risk.

“We were smoking in the car. It doesn't matter that I even drank in Izban (public transport-metro). I even drank in Eshot (public transport-bus) so... I knew I would be caught by the police and I was trying to smoke near them (Kerem).”

Under the theme called the cognitive nature of craving, the cognitive characteristics of craving in synthetic cannabinoid users were included. The participants' repetitive thoughts about the substance, the substance being the only item they focused on, and positive effects of the substance and memories and dreams about these effects emerged as sub-themes (Table 2).

Nearly 45.4% (f=5) of the users expressed their thoughts about the substance that were constantly repeating in their minds. It has been reported that thoughts saying “go and smoke” triggers substance smoking. The participants also expressed that their repetitive thoughts about the substance act as a continuous inner voice.

“It seems as if this substance is constantly talking in my head... It speaks constantly. Smoke, smoke, smoke... I smoke like that too... Smoke says yes. Triggers (Ozan).”

Another participant talked about his repetitive thoughts saying “go, get it.”

“It was triggering, it was triggering, it was saying go and get it. Go and smoke... (Eser).”

At the same time participants said that the only thing they focused on was the substance. They stated that things other than synthetic cannabinoids were meaningless. They stated that the substance was everywhere in their lives; they did not think about anything other than smoking, and they only desired to attain the substance.

One of the participants explained in the following sentences that the only thing he focused on was the substance: *“You don't understand anything about what is said. The things you see don't make sense to you. You are looking at everything as a drug as money. So yes, there are many blessings in life, but you are going after one thing (Cem).”*

All the participants (f=11) talked about the desired positive effects of synthetic cannabinoids and their dreams, plans, and expectations. To identify what they desired in the substance and what were their expectations, questions such as “I will smoke and....” were posed. The participants talked about the positive effects such as relaxation, disconnection from everything, pleasure, being happy, not caring about anything, and having relief from troubles. They also talked about their dreams of relaxation, pleasure, and overcoming problems. They talked about the memories, the desired effects of the substance, the beautiful and funny moments experienced while smoking, the inability to forget the pleasure it gives, and the memory of pleasant things.

One of the participants stated how he got rid of the stress of the day by smoking synthetic cannabis and relaxed, and he mentioned his thoughts related to this filling the blank in the statement “if I smoke...” with *“Let me smoke and my head relaxes... I am happily happy, my face is smiling. My face is always smiling because I know I will smoke in the evening... I have the stress of the day, for example, I am working, the stress of the day is in me, and my head relaxes when I smoke this wave. I feel like I'm in a vacuum.”*

Researcher asked the following question: What do you imagine about it?

The answer to this was *“If I smoke it, my head should be relieved, even if I smoke a little bit of smoke, I should relax (Ozan).”*

One of the participants mentioned that the substance made him happy and to the question, “I will smoke and....,” he explained the fun experiences he had with his friends earlier. When he recalled the funny memories that he experienced during substance use, he said that he wanted the substance: *“... But it makes you happy, otherwise, you do not be happy... you come to a problematic world again... It starts like this. Your friend is starting to tell you good memories, that is, funny memories. Oh, we laughed like that, we were stupid like that, you were doing it like that. At that moment you feel like... (Gökmen).”*

Discussion

The concept of craving is defined as a strong desire that produces strong physical and mental suffering if not satisfied. This desire is at the center of all addictive behaviors. Researchers have emphasized that craving is important because it is powerful, unexpected, and apparently out of our control (Manejwala, 2013). At the same time, craving has been defined in DSM-5 with the criterion “a strong desire or urge to use” (APA, 2013). In this study, the participants stated that they could not bear their cravings for synthetic cannabinoids; they wanted the substance despite the adverse effects, negativities, and obstacles; they felt impatient to smoke substances; they could not prevent this desire; and they wanted the substances continuously. Therefore, it can be stated that the participants had a strong and out of control desire as the previous researchers have stated. It was found that the participants mostly described craving as a “want.” Like methamphetamine users, this request can be in the form of an “irresistible request” (Bruehl et al., 2006). In our study, synthetic cannabinoid users described their desire for pleasure, as having a high head, fainting owing to the use of the substance, and the substance having a good head. They stated that there was no other substance that gave as much pleasure as this substance. Similarly, in a study conducted with synthetic cannabinoid users, the participants described their first experience as very pleasurable despite experiencing nausea and stated that they had an intense desire to repeat (Van Hout & Hearne, 2017). Some of the participants stated that they tried to obtain pleasure by increasing the amount of substance used. It seemed that the participants were constantly seeking the pleasure they got from using the synthetic cannabinoids. To obtain the same pleasure, they were increasing the amount of substance used.

According to the users, the desire to use synthetic cannabinoids was short-term and the substance was remembered for a short time. The substance “wants” were felt occasionally, the want ended when the substance did not burn; it came to mind for a moment and then was forgotten: the want was not felt throughout the day. It was observed that the participants who made these statements were mostly in remission.

Synthetic cannabinoid users have reported that the substance controlled them because all they thought about was the substance, and they used the substance compulsively (Kassai et al., 2017) and continued to use despite realizing their fear of side effects, loss of control, and compulsive use (Van Hout & Hearne, 2017). In our study, some participants stated that they smoked 24 hours a day, at short intervals such as 4 minutes, 15 minutes, and 30 minutes. Some of them smoked although they did not feel any desire. The expressions of the participants such as “you take it, smoke it,” “smoke it until evening,” “smoke as you smoke,” “not being able to stop yourself” were accepted as expressions showing that no judgment was made or that the current behavior was carried out without thinking. Researches contribute to the persistence of addictive behaviors by emerging negative meta-cognitive beliefs about the uncontrollability of addictive behaviors (Spada et al., 2015). However, periods of withdrawal also cause problems in terms of attention and clear thinking, and people feel depressed and helpless (Zimmermann et al., 2009). The automatic smoking behavior of the participants could be because they

thought this behavior was uncontrollable or because they could not think clearly. Along with not thinking clearly, other interests and responsibilities might also be neglected or impaired, (Zimmermann et al., 2009) such as continuing with smoking behaviors despite risky situations.

User behaviors such as automatic smoking, smoking even in risky situations, and constantly striving for substance may occur with uncontrollable, continuous, or short-term desire for pleasure. However, in addition to these results, they had repetitive thoughts about the substance; their only focus was on the substance; and they had dreams, memories, and expectations about the positive effects of the substance. When the expressions of the participants were examined, it was observed that they imagined the positive effects of the substance. According to the elaborated intrusion theory of desire (Kavanagh et al., 2005), imagery plays an important role in motivation because it conveys the emotional qualities of the desired event. Imageries are mimicking anticipated pleasure or relief. Elaborating on the images ensures that the target stays in mind (Andrade et al., 2012). The theorists of the elaborated intrusion theory argue that imagery is a key element of craving, providing subjective experience (May et al., 2004). There are 2 distinct stages: at first, seemingly spontaneous craving-related thought is sufficiently intrusive and pleasant for it to be then elaborated with vivid mental imagery; therefore, craving is a conscious situation (Kavanagh et al., 2005). According to the results of this research, synthetic cannabinoids have addictive, desirable, and positive effects, such as relaxation, disconnection, pleasure, happiness, and relief from troubles. These effects can be imagined visually by the users and experienced in this way. The participants’ elaborated images of pleasure and relief may have a positive effect on the craving.

Limitations and Suggestions for Future Research

According to the interpretative phenomenological analysis methodology, this study was conducted with a small homogeneous group, thus posing a constraint on the generalizability of this research. In addition, our results may not apply to females as only male participants were included. Because interpretative phenomenological analysis is idiographic, that is, in the form of detailed questioning of each individual, it does not reveal results related to frequency and causality (Smith et al., 2009). It is suggested that further studies be carried out with different sample groups so that the dimensions of craving can be identified and the necessary interventions can be planned accordingly. Furthermore, prognosis and risk of relapse can be estimated with a scale that is valid enough for predicting. In future studies, functional craving scales can be developed on the basis of qualitative data.

Ethics Committee Approval: Ethics committee approval was received for this study from the Medical Research Ethics Committee of the Ege University (May 15, 2015).

Informed Consent: Informed consent was given to all participants that must confirm their voluntary participation to continue with the research.

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