THE ENIGMA OF CRAVING

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ABSTRACT

Craving is considered to play an important role in the persistence of drug use and relapse of drug use. Very few studies have looked into the subjective experience of this phenomena. This study attempts to study craving comprehensively as described by the subjects. In the present study 30 patients of heroin dependence syndrome were assessed (using a semi-structured questionnaire) for the subjective experience of craving and its various dimensions. All subjects reported having experienced craving. Majority of subjects (90%) described craving as a strong desire to use the substance. About 77% reported that intensity of craving could vary while others described it as a strong urge. Majority (83.3%) reported that only heroin or other opiates could satisfy the craving they experienced for heroin. During craving, thoughts of using the drug by all means would preoccupy their mind. Withdrawal symptoms (70.0%), increased respiration (56.7%) and palpitation (53.3%) were the common physical symptoms and anger (83.3%), tension (63.3%), anxiety (50.0%) were the common emotions experienced during craving. Craving was described as difficult to control and resulted in consumption of heroin on an average of 76.7% occasions. All subjects reported multiple cues that induced craving. Frequency of craving decreased with increase in length of period of abstinence. After being abstinent for 3 months, 90% subjects did not experience craving or experienced it once in a day. Socio-cultural factors do not appear to have prominent influence on subjective experience of craving.

Key words: Craving, Heroin, Dependence, Subjective experience

Craving for drugs is considered by many drug addicts and treating clinicians to play an important role in the persistence of drug use and relapse of drug use. However, the term craving has several meanings attached to it and has been used by different researchers in different ways (Kozlowski and Wilkinson, 1987). Many researchers (Mello, 1978; Hughes, 1987; Kassel and Shiffman, 1992) have expressed concern against the use of craving as an explanation of addiction. Even a WHO panel (Jellinek et al., 19955) had concluded that the term craving, with its everyday connotations, should not be used in scientific literature, although they agreed about the existence of craving.

Despite many problems, the term craving continued to find a place in the field of substance abuse (Ludwig and Stark, 1974; Robinson and Berridge, 1993; Halikas, 1997; Lowman et al., 2000). In one of the attempts to operationalise the definition of craving, a group of experts, in a meeting 'Informal Expert Group Meeting on the Craving Mechanism' sponsored by UNDCP & WHO (1992), have defined craving as "the desire for the previously experienced effects of a psychoactive substance". It has also found a
place in ICD-10 (WHO, 1992) as one of the diagnostic criteria for dependence wherein it has been referred as "a strong desire or compulsion" to use the drug.

The understanding of the term craving should include an inquiry into the phenomena as described by substance users. A comprehensive description of the subjective experience of craving would lead to a better understanding of this term. Few researchers have attempted to study this. A recent study (Menkle, 1999) has explored the subjective experience of craving and has also reviewed the earlier studies which attempted this. It was revealed that the subjective experience of craving was heterogeneous. Eight dimensions: specificity, strength, positive outcomes, behavioral intentions, thoughts, physical symptoms, affects and cues, were associated with craving.

The aim of the present study is to collect detailed information of the subjective experience of craving as described by the heroin dependent subjects in our setting.

MATERIAL AND METHODS

This study included 30 male subjects of heroin dependence syndrome diagnosed according to DSM-IV (APA, 1994) and attending the Drug Dependence Treatment Centre, All India Institute of Medical Sciences, New Delhi. All subjects were interviewed with a semi-structured questionnaire. The questions included in the questionnaire pertained to demographic data, history related to heroin use, the subjective experience of craving and dimensions of craving, (specificity in relation to substance used, intensity, expected effects of drug use, intention to use drug, thoughts/cognitions associated with craving, physical symptoms related to craving, affect and cues that trigger craving). Some of the questions were open-ended. Subjects were asked questions on intensity of craving produced by a particular cue and responses were taken on the visual analogue scale. The questionnaire was formulated by a team of three drug dependence treatment specialists. The questionnaire was administered in the local language. The instrument was administered to four subjects and suitable modifications were made based on their feedback.

RESULTS

Subjects had a mean age of 35.5±5.8 years (range 27-54 years) and a mean duration of heroin use of 13.9±5.4 years (range 3-22 years).

Definition: All subjects reported having experienced craving at sometime in their drug use history. Twentyseven subjects (90%) described craving as a strong desire to use the substance. Some subjects reported tension in mind (6.7%), restlessness (6.7%) and inability to remain without drug (6.7%) as components of craving. Almost all the subjects perceived that craving was uncontrollable. Majority of subjects (66.7%) reported that craving and withdrawal symptoms were different while 33.3% considered the two to be same. Fifty percent of subjects clearly described craving as a desire for the drug and withdrawal symptoms as a physical experience.

Specificity: Eight subjects (26.7%) reported that only heroin would satisfy the craving while another 17 subjects (56.7%) stated that besides heroin, other opiates (opium, buprenorphine or dextropropoxyphene) could also relieve craving. Other substances like benzodiazepine (23.3%), alcohol (13.3%) and cannabis (10%) would also satisfy craving to some extent. Activities like taking a bath (10%) and talking (3.3%) had also been found helpful in reducing craving.

Intensity: Majority of subjects (76.7%) reported that the intensity of craving could vary whereas remaining 33.3% experienced the intensity of craving to be the same every time i.e., always strong. Strong craving was described as uncontrollable and always leading to use of the substance. Overall 76.7% of subjects tried to control craving at some point of time. However, they were able to do so only on a few occasions. Subjects reported that frequency of craving decreased as the length of abstinence increased.

Majority of subjects (76.7%) were experiencing craving 2-3 times or more a day while they were...
on regular heroin use. During abstinence, initially the frequency of craving increased and subsequently the frequency decreased. By the end of one week of abstinence, 86.7% of the subjects had experienced craving 2-3 times or more in a day and 50% of the subjects reported the same frequency at the end of one month of abstinence. After remaining abstinent for 3 months or more, 90% of subjects did not experience craving or experienced it once in a day.

**Positive Outcome Expectancies:** Majority of subjects (86.7%) would expect the positive outcome in the form of a 'high' after consuming the substance. Seventeen subjects (56.7%) indicated that relief of withdrawal symptoms was also an expected outcome. For nine subjects (30%), main expected outcome associated with heroin use has been relief of withdrawal symptoms while getting high had been only of secondary importance. However, majority of subjects (83.3%) reported that the quality of high has changed over the course of their drug use (the type of high they used to get earlier, they do not get now).

**Thoughts/Cognitions:** All the subjects reported that during craving they would think about procurement of drug by all means. They would think about how to arrange money and how to go and buy the drug. To meet this end, they would think about borrowing from friends/colleagues (56.7%), demanding money from family members (53.3%) and stealing (10%). Other means to arrange money about which the subjects may think includes selling of household articles (6.7%), doing some work (6.6%), robbing (3.3%), gambling (3.3%), using fraudulent methods to make money (3.3%). Thoughts of using the drug would preoccupy their mind during craving. The subjects would try to control these thoughts but would not be able to do so.

**Physical Symptoms:** All the subjects experienced one or more physical symptoms during craving. These symptoms include withdrawal symptoms (70.0%), increased respiration (56.7%), palpitation (53.3%), sweating of hand (46.7%), watering of mouth (33.3%) and taste of heroin (23.3%). Seventy percent of subjects considered the withdrawal symptoms to be a part of craving.

**Affect:** Emotional experiences expressed during craving are anger (83.3%), tension (63.3%), anxiety (50.0%), sadness (46.7%), irritability (20.0%) and restlessness (20.0%). Subjects experienced more than one type of emotion during craving. One subject reported that he would become angry during craving to the extent that he even felt like killing someone.

**Behavioral Intention:** The subjects found craving especially strong as difficult to control. This invariably resulted in procurement and ultimately use of the drug. Some subjects reported that occurrence of craving almost every time led to drug use and this took precedence over other activities however important. On experiencing craving, subjects gave in and used heroin on an average of 76.7% occasions.

**Cues/Triggers:** Subjects were inquired about the intensity of craving produced by 20 potential cues. Responses were rated based on the scores on the Visual Analogue scale. Score of 5 or more on the scale was considered as positive i.e. that a particular cue did elicit craving. All subjects reported multiple cues for craving. All subjects (100%) reported that presence of withdrawal symptoms always produced craving. The percentage of subjects reporting elicitation of craving by certain cues was recorded. Among the commonest situational cues eliciting craving were: place of use (83.3%), substance being easily available (80.0%), family tension (73.3%), seeing people using drug (63.3%), contact with drug using peers (63.3%), substance being offered by friends (60.0%) and particular time of day (53.3%). Emotional feeling associated with craving were: sadness (73.3%), tension (73.3%), anger (70.0%), anxiety (50.0%), boredom (53.3%), happiness (50.0%) and loneliness (50.0%).

**DISCUSSION**

Craving is one of the important factors for relapse of substance abuse (De Jong, 1994; Daley & Marlatt, 1997). Studies carried out in India on opiate dependents (Raj et al., 2000; Pallab et al., 2000) also support this fact. The fact that the term...
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is so often used among drug users and clinicians suggests its importance in drug use and addiction. This is a cross sectional study where subjects are retrospectively reporting about the experience of craving. Craving could also be studied using experimental designs. In the present study, the subjects (heroin dependents) were assessed with regard to subjective experience of craving and its associated dimensions based on recall. It was revealed that craving was described as a strong desire to use heroin. All subjects had experienced craving at some time during their course of drug use and had in general perceived craving as uncontrollable. The subjects had attributed giving in to craving as a reason for regular use or relapse. The perception that craving is uncontrollable suggests its importance as a significant aspect of relapse and continuous drug use. We inquired about the dimensions that may be related to the subjective experience of craving. Although the subjects were quite consistent in defining craving, the subjective experience in regard to various dimensions of craving differed across the subjects. Majority of subjects reported that only the drug of choice (heroin) could satisfy the craving, while is others, reported that other drugs (other opiates or benzodiazepine) could also satisfy craving. Some subjects reported the intensity of craving to be the same every time i.e. always strong, where others reported that the intensity might vary on different occasions. Similarly, certain cues elicited strong craving in some subjects and the same cues produced weak craving or did not produce craving at all in others. Since subjective experience of craving with regard to various dimensions is variable, during the assessment of craving all these aspects should be included.

A previous study (Merikle, 1999) carried out in U.S.A. found almost similar results. The findings were very similar from the two studies in spite of the wide difference in the setting probably because the experience of craving is more related to biochemical factors than socio-cultural beliefs. This further emphasizes the role of biological research in understanding this phenomena.

Craving has been broadly described based on three different theoretical models (Picken and Johanson, 1992; Singleton and Gorelick, 1998; Lowman et al., 2000; Drummond, 2001). Firstly, phenomenological models: these models of craving are essentially descriptive rather than explanatory and are based solely on clinical descriptions and observations. Craving is taken as symptom of an underlying addictive disease. Secondly, conditioning models: these models are based on conditioning theory. This model presumes that cues can produce a conditioned response in the form of withdrawal symptoms including craving. Thirdly, cognitive theories: these are based on cognitive social learning theory, which was developed by Marlott and Gordon (1985). It is predominantly a theory of relapse. In this craving is viewed as a desire to consume a drug which is motivated by the anticipation of the positive outcome from the drug. The results of this study- the description of craving as desire to use drug, different cues eliciting craving and association of craving with positive outcome expectancies (to get a high and for relief of withdrawal symptoms) support the above mentioned three major theoretical models of craving respectively. It is apparent that an existing theoretical model can not explain all the aspects of craving. So there is need for a comprehensive model which could explain the various dimensions of craving.

This study is a retrospective cross-sectional study and has the inherent limitations of such a design including recall bias. Limitation of the study: Relatively small sample size limits the generalizability of the results. In spite of all its limitations, this study is a step in the direction of understanding the subjective experience of the craving in Indian subjects. An additional important limitation is that the description (and associated attributes) of craving have been elicited using a questionnaire which is not validated due to which response has may have crept in.

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