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CHINESE MALE ADDICTS' DRUG CRAVING AND THEIR GLOBAL AND CONTINGENT SELF-ESTEEM

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In this study we investigated the relationships among Chinese male addicts' drug craving and their global and contingent self-esteem. Drug addicts (N = 195) at a compulsory rehabilitation center in Zhuhai, South China, completed the Rosenberg Self-Esteem Scale, Self-Esteem Contingent Scale, Sensation Seeking Scale V, and a scale of drug craving for addicts who have withdrawn physically from the drug, but who have not received any behavior support or counseling. The results indicated that male drug addicts' global self-esteem correlated negatively with drug craving whereas their contingent self-esteem correlated positively with drug craving. After controlling for other variables, drug craving was still significantly predicted by global self-esteem and contingent self-esteem. Those addicts with low global and high contingent self-esteem recorded the highest scores for level of drug craving, and those with high global but low contingent self-esteem had the lowest scores.

Keywords: drug use, drug addiction, drug craving, global self-esteem, contingent self-esteem, sensation seeking.

In the 19th century, opium use was very widespread across China because of illegal opium trafficking into China from British India. After the establishment of the People's Republic of China, use of this drug was almost entirely eliminated across the nation. However, since the 1980s, there has been a resurgence of problems of drug abuse in China (Lu, Fang, & Wang, 2008). Findings in the most recent Chinese government surveys showed that there were 1,473,000 registered drug users in the People's Republic of China in June 2010 (Ministry of Public

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Security of the People's Republic of China, 2010). Drug abuse and the problems of its low rates of recovery and high rates of relapse appear to be aggravating issues in present-day China (Lu, Fang, & Wang, 2008).

Self-Esteem and Drug Addiction

Researchers (see e.g., Compton, Thomas, Conway, & Colliver, 2005) have found that both social factors and environmental factors, such as child abuse in the family, high availability of drugs in the home neighborhood, and a country's policies and laws play an important role in a person's first experience with drugs, and that individual and biological factors are relevant to disorders arising out of substance abuse (Ayvasik & Sümer, 2010; West, 2001). *Self-esteem*, which may be labeled alternatively as *global self-esteem*, refers to *global judgments of self-worth*, and is the most concerning and most controversial personal trait factor associated with drug abuse. In the 1980s, it was believed that individuals with low levels of self-esteem tended to adopt risky behaviors, such as smoking, drinking alcohol, and drug abuse because they were more susceptible to negative social and environmental influences (Rosenberg, Schooler, & Schoenbach, 1989). But recently, researchers have shown that the relationship between self-esteem and drug use is equivocal. Some researchers have found that self-esteem is unrelated to drug use (Ayvasik & Sümer, 2010; Mullan & NicGabhainn, 2002). In a recent literature review, researchers have also claimed that self-esteem level is not a strong predictor of objective outcomes such as drug abuse (Baumeister, Campbell, Krueger, & Vohs, 2003). Still other researchers have reported a statistically significant relationship between self-esteem and drug or substance use problems (Kavas, 2009; Stein, Leslie, & Nyamathi, 2002). For example, Kavas found that illicit drug usage was more prevalent in low self-esteem Turkish adolescents than high self-esteem adolescents.

In most of the previous research into self-esteem the focus has been on the level of trait self-esteem (Croker & Park, 2004; Croker & Wolfe, 2001). Some researchers have argued that self-esteem level does not provide a complete picture of the role of self-esteem in psychological and interpersonal functions (Croker & Wolfe, 2001; Kernis, 2005). According to Croker and Wolfe, the level of self-esteem is only one aspect of self-esteem, and may be relatively unimportant as a factor in socially desired or problematic behaviors. Recent evidence suggests that, rather than the level of an individual's global self-esteem, contingencies of self-esteem may be more important for understanding the relationships between self-esteem and behavior.

Contingent Self-Esteem

Contingent self-esteem refers to *feelings about oneself that result from matching some standard of excellence or living up to some interpersonal expectations* (e.g.,

social approval, performance, or other criteria; Crocker & Wolfe, 2001; Kernis, 2003; Neighbors, Larimer, Geisner, & Knee, 2004). Kernis found that individuals with high contingent self-esteem viewed poor performance as incompetence, shame, and worthlessness, and they would go to great lengths to avoid such painful experiences. Recently, some researchers have argued that drug abuse, aggression, depression, and some other social problems may be associated not only with the level of one's self-esteem but also with the highly contingent nature of self-esteem (Crocker & Wolfe, 2001). Kernis suggested that, for those with high contingent self-esteem, the pursuit and maintenance of positive self-regard often become the prime directives that channel their thoughts, feelings, and behaviors. Thus, if the high contingent self-esteem fails, they may turn to alcohol or substance abuse to escape from painful feelings. Neighbors et al. found that the more contingent was college students' self-esteem, the more they reported drinking alcohol as a means of regulating their mood, gaining social approval, or avoiding social rejection. Croker and Wolfe suggested that contingencies of self-esteem may help to account for instances of socially undesirable and self-destructive behaviors.

Relapse into Drug Abuse and Drug Craving

Most of the current research on self-esteem and drug abuse has been conducted with adolescents or college students. Few researchers have studied those who are already drug addicted. In previous studies researchers have found that the the most important problem for those addicted to illegal drugs and substances was cessation of use. Lu, Gao, and Ni (2010) analyzed instances of relapse among heroin users as reported in Chinese pharmaceutical journals from 1995 until 2008 and found that 93.31% of heroin users reported a relapse within six months of cessation of using the drug. Some researchers have argued that *drug craving*, that is *a desire to use a drug* (Sayette et al., 2002) may be the most important factor in relapse (Childress, McLellan, & O'Brien, 1986; Liu, Hao, & Zhang, 2006). Although research about craving has increased (Lowman, Hunt, Litten, & Drummond, 2000; Sayette et al., 2002), the relationship between self-esteem and drug craving is still unclear because there is a lack of empirical research.

The Present Study

Our purpose in the present study was to examine the relationships among Chinese male drug addicts' global self-esteem, contingent self-esteem, and their drug craving. Sensation seeking is one of the important personality traits associated with vulnerability to drug abuse (García-Montes, Zaldívar-Basurto, López-Ríos, & Molina-Moreno, 2009). Thus, in our study we considered it as a control variable of personality trait. We also considered demographic variables, drug usage, and addiction treatment as other control variables. We assumed that,

after controlling for other variables, both the global self-esteem (negatively) and contingent self-esteem (positively) of the drug addicts in our study would still predict their drug craving. Croker and Wolfe (2001) have argued that the negative emotion associated with threats to contingent self-esteem may lead to self-destructive behavior or social problems. Those with low global self-esteem but high contingent self-esteem may be particularly prone to low state self-esteem and negative affect when experiencing a blow to self-esteem. They may be particularly motivated to escape this negative affect by reducing self-awareness through the use of alcohol or drugs, binge eating, or other self-destructive behaviors (Croker & Wolfe, 2001). In the present study, we expected that, after controlling for other variables, drug addicts with low global but high contingent self-esteem would report the highest level of drug craving because their self-esteem was at the greatest risk, compared with other addicts. Having high global but low contingent self-esteem is viewed by Kernis (2003) as the optimal self-esteem, so we expected that addicts whose self-esteem reflected this pattern would show the lowest level of drug craving, compared with other addicts. Those with either high global and high contingent or low global and low contingent self-esteem would fall between these two extremes in their level of drug craving.

Method

Participants

We recruited 195 male drug addicts who were attending a compulsory rehabilitation center at Zhuhai, South China. All of them had used illegal drugs at least once and were receiving compulsory treatment as addicts and had physically withdrawn from the drug, but had not received any counseling or behavior support (physically dried-out). The age of the group of participants ranged between 20 and 54 years of age (M = 34.55 ± 6.72 years; 33.3% were under the age of 30, 47.7% were between 30 and 40 years of age, and 19% were older than 40). Of the participants 24.1% came from single-parent families and 4.1% were orphans. None of them had received education beyond high school; 26.2% were illiterate or had attended a primary school, 73.8% had attended a middle school or high school/technical school. Unemployed participants comprised 33.8% of the sample, and 44.6% were in temporary or part-time employment. They had abused drugs from between 1 and 26 years (M = 12.14 ± 6.11 years). The frequencies of drug use were between 1 and 10 times per day (M = 3.12 ± 1.55). The drug dosages were between 0.01 and 4 g (M = 0.56 ± 0.54 g). Heroin users comprised 76.9% of the sample, 19.5% used crystal methamphetamine, ecstasy, ketamine, and other drugs we classified as *new drugs*, 1.5% used marijuana, and 2.1% used other drugs. Frequencies of addiction treatment

were between 2.31 ± 2.19 times, and duration of present addiction treatment was between 15.03 ± 8.50 months.

Materials and Measures

Scale of Drug Craving of physically dried-out drug addicts. The Scale of Drug Craving (SDC) was developed and validated by Luo (2009). It consists of 34 items. Participants are asked to rate their agreement on a 7-point Likert scale from 1 = *totally disagree* to 7 = *totally agree* with statements such as "I remember the satisfaction after drug use" and "I can't stop thinking about using drugs". In this study we used the total score from this scale. Higher scores indicate a higher level of drug craving. The internal consistency coefficient alpha was .96.

Self-Esteem Scale (SES; Rosenberg, 1965). The Chinese version of the SES was an adaptation completed by Wang, Wang, and Ma (1999). We used this scale to assess the participants' level of global self-esteem. It consists of 10 items, with sample items being "I feel that I am a person of worth, at least on an equal plane with others" and "I take a positive attitude toward myself". Participants were asked to indicate their agreement with statements on a scale from 1 = *strongly disagree* to 4 = *strongly agree*. The internal consistency coefficient alpha obtained from our sample was .75.

Contingent Self-Esteem Scale (SECS; Paradise & Kernis, 2002). The SECS was adapted for use in the Chinese context by Yang (2011). We used this scale to measure general contingent self-esteem. It consists of 15 items used to measure self-esteem contingencies in domains such as living up to expectations, successful performance, and acceptance from others. Each item is rated on a scale from 1 = *not at all like me* to 5 = *very much like me*. Higher scores indicate that the participants' self-esteem is more contingent. The internal consistency coefficient alpha was .76 in our study.

The Sensation Seeking Scale (SSS-V; Zuckerman, Eysenck, & Eysenck, 1978). The SSS-V was adapted for use in the Chinese context by Zhang (2003). This scale consists of 40 items in a forced-choice format. Sample items are: A. "I like wild uninhibited parties", B. "I prefer quiet parties with good conversation"; A. " I like to try new foods that I have never tasted before", B. "I order the dishes with which I am familiar, so as to avoid disappointment and unpleasantness". The total score of the 40 items indicates the level of sensation seeking. The internal consistency coefficient alpha was .79 in our study.

Procedure

The participants completed all of the above scales in groups of between 15 and 20 people. With the manager of the drug addiction treatment center present, and with his help, we explained the aim of the study, and assured participants that all their responses would be anonymous and confidential. Then the participants

Table 1. *Correlations Among Drug Craving and Other Variables*

	M±*SD*	Age	Family	Work	Ed.	Du-DU	Do-DU	Fr-DU	Fr-AT	Du-AT	DC	SS	GSE
DC	125±41.46	.27***	.08	-.14	-.18*	.29***	-.07	.18*	.25***	.19**	-		
SS	18.48±4.93	-.11	-.00	-.14*	.01	-.17*	.12	.02	.10	-.01	.19**	-	
GSE	27.07±4.10	-.15*	-.04	.22**	.20**	.02	.09	-.05	-.09	-.06	-.28***	.03	-
CSE	43.93±5.77	-.00	-.00	-.06	-.05	-.02	.02	-.07	.02	.06	.29***	.12	-.15*

Note. DC = drug craving; SS = sensation seeking; GSE = global self-esteem; CSE = contingent self-esteem; Family = family structure (1 = two parents family, 2 = single parent family, 3 = orphans); Work (1 = unemployed, 2 = no fixed jobs, 3 = fixed jobs); Ed. = educational level (1 = primary school or illiteracy, 2 = middle school or high school, 3 = undergraduate, 4 = master or above); Du-DU = duration of drug use; Do-DU = dosage of drug use; Fr-DU = frequency of drug use; Fr-AT = frequency of addiction treatment; Du-AT = duration of addiction treatment.* $p < .05$, ** $p < .01$, *** $p < .001$.

received the survey forms and we gave instructions on how to respond to the various items. We gave the participants the opportunity to ask any questions about our instructions, and then we read out each of the statements in each of the scales one at a time for the benefit of the illiterate participants.

Results

Correlations Among Drug Craving and the Other Variables

Correlation analysis revealed that global self-esteem correlated negatively and contingent self-esteem correlated positively with drug craving (r = -.28, $p < .001$; r = .29, $p < .001$, respectively), but neither correlated with actual drug usage. Sensation seeking also correlated with drug craving (r = .19, $p < .01$). Furthermore, drug craving correlated with age (r = .27, $p < .001$), educational level (r = -.18, $p < .05$), duration of drug use (r = .29, $p < .001$), frequency of drug use (r = .18, $p < .05$), and frequency and duration of addiction treatment (r = .25, $p < .001$; r = .19, $p < .01$, respectively). Finally, global self-esteem was related negatively with contingent self-esteem (r = -.15, $p < .05$).

Multiple Regression Analysis on Drug Craving

A hierarchical multiple regression analysis revealed, after controlling for all the other variables, that contingent self-esteem and global self-esteem still predicted drug craving (β = .23, $p < .001$; β = -.20, $p < .01$). Additionally, age, frequency of addiction treatment, and sensation seeking also significantly predicted drug craving (β = .22, $p < .001$; β = .18, $p < .01$; β =.15, $p < .05$).

Table 2. *Multiple Regression Analysis on Drug Craving*

Step	Predictors variables	R^2	ΔR^2	F	β	t
1	Age	.07	.07	14.64^{***}	.22	3.34^{***}
	SS	.12	.05	10.45^{***}	.18	2.72^{**}
	Fr-AT	.14	.03	5.47^{*}	.15	2.30^{*}
2	CSE	.21	.07	16.58^{***}	.23	3.62^{***}
	GSE	.25	.04	9.70^{*}	-.20	-3.12^{**}

Note. SS = sensation seeking, GSE = global self-esteem, CSE = contingent self-esteem, Fr-AT = frequency of addiction treatment. * $p < .05$, ** $p < .01$, *** $p < .001$.

Analysis of Covariance of Drug Craving

Participants with scores for global self-esteem and contingent self-esteem that were both below the mean were classified as having low global and low contingent self-esteem (LGLC, n = 51). Participants with scores for global and contingent self-esteem that were both above the mean were classified as having high global and high contingent self-esteem (HGHC, n = 36). Participants

with scores for global self-esteem that were above the mean but with scores for contingent self-esteem that were below the mean were classified as having high global and low contingent self-esteem (HGLC, $n = 53$), and those whose self-esteem pattern was the reverse of this were classified as having low global self-esteem and high contingent self-esteem (LGHC, $n = 55$).

We conducted an analysis of covariance (ANCOVA) to establish whether or not level of drug craving differed significantly among the four self-esteem classification groups when adjusted for age, sensation seeking, and frequency of addiction treatment. The preliminary analysis showed that the assumption of homogeneity of regression coefficient was satisfied in that none of the interactions between the variable of self-esteem group and the other three variables was significant. The analysis revealed a main effect of drug craving on self-esteem group, $F(3, 194) = 7.72$, $p < .001$, partial $\eta^2 = .11$. Post hoc tests for least significant difference (LSD) indicated that participants in the LGHC group had significantly higher levels of drug craving ($M \pm SD = 140.98 \pm 41.96$) than those in the HGLC group ($M \pm SD = 106.57 \pm 44.49$; $p < .001$), and marginally significantly higher than those in the groups classified as HGHC ($M \pm SD = 124.28 \pm 37.30$) and LGLC ($M \pm SD = 127.42 \pm 32.96$; $p = .071$ and $p = .089$, respectively). On the contrary, the HGLC group had the lowest level of drug craving, which was also significantly lower than the level of drug craving of each of the other three groups ($p < .05$). The HGHC groups and LGLC groups fell between the LGHC and HGLC groups and did not differ from each other (see Figure 1).

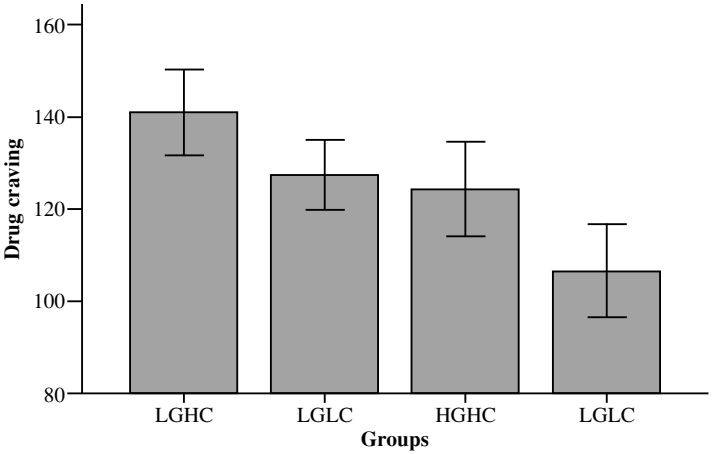

Figure 1. *Drug craving across self-esteem groups.*

Age, sensation seeking, and frequency of addiction treatment were significantly associated with the drug craving level, age: $F(1, 194) = 11.54$, $p < .001$, partial $\eta^2 = .06$; sensation seeking: $F(1, 194) = 9.50$, $p < .01$, partial $\eta^2 = .05$; and frequency of addiction treatment: $F(1, 194) = 6.81$, $p < .01$, partial $\eta^2 = .04$.

Discussion

When Lu, Gao, and Ni (2010) synthesized the demographic characteristics of instances of relapse of heroin abusers reported in Chinese pharmaceutical journals between 1995 and 2008 they found that nearly three-quarters of them were aged between 21 and 40 years, that just over three-quarters of them were illiterate or had only had a primary/middle school education, and that just over 40% of them were unemployed. The composition of the group that we surveyed was similar: 80% were aged between 20 and 40, 28.2% came from single parent families or were orphans, none had received an education beyond senior high school, and a third of the group was unemployed. Researchers have argued that gender and age are critical demographic variables for predicting drug use (Ayvasik & Sümer, 2010). Our finding that age was the only robust demographic variable predicting drug craving provides support for this argument.

We found it surprising that the duration and frequency of treatment correlated positively with drug craving. But the drug addicts in the present study were recruited from a compulsory rehabilitation center so that they had been forced to submit to the physical withdrawal of the drug and had not received any psychological support to help them resist their desire for the drug. The longer they stay at, or the more frequently they are admitted to, the treatment center, the greater becomes their desire for drugs. We suggest that the effectiveness and validity of this physical withdrawal method needs further examination.

Sensation seeking was another significant predictor of drug craving. This result was consistent with that of Ball, Carroll, and Rounsaville (1994) who found that, compared with nonusers, cocaine abusers and high-sensation seekers exhibited more severe symptoms of substance abuse, more severe psychosocial impairment, were more likely to be polysubstance abusers, and had an earlier onset age for substance use and abuse.

We found that the self-esteem of our participants was associated with drug craving instead of drug usage. One explanation is that all of the participants in the present study were already drug addicts. There were no participants who were not addicts and the frequency and duration of the drug usage of our participant group was quite high. Possibly self-esteem did not influence their actual drug use but still had an influence on their craving for drugs. We also argue that the actual drug usage was not dependent on self-esteem only, but was also influenced by

other variables, such as the availability and accessibility of drugs, depression and anxiety, peer use, peer delinquency, a lack of purpose in life, and alcohol abuse or dependence (see e.g., Aneshensel & Huba, 1983; Brook, Brook, Rubenstone, Zhang, & Saar, 2011; Burns & Teesson, 2002; Green, Zebrak, Fothergill, Robertson, & Ensminger, 2012; Kandel, Simcha-Fagan, & Davies, 1986; Jacobson, Ritter, & Mueller, 1977; Volkow, 2004). For the group of addicts who were our participants the relationship between self-esteem and drug usage may have been indirect and moderated by these variables. This may explain why the relationship between these two variables was so unstable in the previous studies.

The relationship between self-esteem and psychosocial well-being or dysfunction is a much-studied and contentious issue in the psychology field. According to recent theories, self-esteem is both a trait and a state. It has been argued that other qualities of self-esteem, such as stability, contingency, fragility, or defensiveness (see Kernis, 2003, for the detailed discussion on the association and differences among these qualities) also play an important role in the association between self-esteem and psychosocial well-being or dysfunction (Croker, 2002; Croker, Brook, Niiya, & Villacorta, 2006; Croker & Wolfe, 2001; Kernis, 2003). The mixed relationship between self-esteem and psychosocial well-being or problems may have been because these properties were being neglected. Findings in research on those aspects of self-esteem and psychological adjustment and well-being (Paradise & Kernis, 2002), academic achievement (Croker, Sommers, & Luhtanen, 2002), anger and hostility (Kernis, Grannemann, & Barclay, 1989), and alcohol use (Neighbors et al., 2004) have provided supporting evidence for this argument.

In our study we extended this theoretical proposition to Chinese male drug addicts and examined the relationships between their self-esteem and drug craving. We found it enlightening that, after controlling other variables, both the level and the contingency of self-esteem of our participant drug addicts predicted their level of drug craving. Those drug addicts who had a low level of self-esteem but high contingent self-esteem had the highest level of drug craving, whereas those with a high level of self-esteem and low-contingent self-esteem had the lowest score for level of drug craving. For our participants it was not the low level of self-esteem that was risky but the combination of a low level of global self-esteem and high contingency. Croker and Park (2004) argued that people with low global self-esteem but high contingent self-esteem may be particularly prone to low state self-esteem and negative affect. They may be particularly motivated to escape this negative affect by reducing self-awareness through the use of alcohol or drugs, binge eating, or other self-destructive behaviors. Our findings about the self-esteem and drug craving of Chinese male drug addicts provide extra supporting evidence for this suggestion.

There are a few limitations in the present study. Our study may be the first in which the variables of drug addicts' global self-esteem, contingent self-esteem, and drug craving were included. However, the participants in our study were all male adult drug addicts. Further researchers should investigate these variables within a more diverse sample. Also, we focused solely on the relationships between self-esteem and drug craving. We did not investigate the relationships between drug addicts' self-esteem and other psychological dysfunctions, such as depression or antisocial behaviors. Further study into such variables will help us to understand the relationship between drug addicts' self-esteem, drug craving, and their other psychological dysfunctions.

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