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The Characteristics of Relapsed Drug Users in Contemporary Urban China

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Abstract The present study is aimed at exploring the characteristics of Chinese relapsed drug users associated with their treatment experience in police mandatory treatment centers. The exploration is based on a comparison of Chinese drug users who received the police mandatory treatment for multiple times (the "relapse" group) with those who had the treatment for the first time (the "first-time" group). The comparative analysis is conducted using data collected from a 2009 survey of 177 drug users in several police mandatory treatment centers in a large city of China. The data indicate that both the "relapse" and the "first-time" groups have similar demographic characteristics except age. However, respondents in the "relapse" group were more likely to be heroin users, have a high level of drug dependence, have prior treatment, experience a high level of mental disorder, and have drug-use friends than those in the "first-time" group. The findings imply that relapse among Chinese drug users are likely to have multiple factors which is comparable to that discovered in Western research.

Keywords Chinese drug users · Official mandatory treatment · Relapse

Introduction

Relapse in drug abuse is a serious concern in dealing with drug problems worldwide. As China is experiencing resurgent drug problems during the course of modernization, high relapse rates among Chinese drug users have also become a serious concern. Building upon prior research, the present study explores the characteristics of Chinese relapsed drug users

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associated with their treatment experience in police mandatory treatment centers. Adopting the Western literature, the exploration concentrates on five types of factors, including demographic, drug-related, treatment, psychological, and social, using data collected from a 2009 survey of 177 drug users in several police mandatory treatment centers in a large city of China.

The Chinese Context

As many other countries in the world are experiencing, drug problems have been reemerging in China since the nation implemented economic reform and the "open door" policy in the late 1970s. The 2009 China's Annual Drug Report indicates that the nation had more than 1 million registered drug users, and approximately 60,000 drug-related criminal cases that were recorded by police in 2008. In 2009, the recorded drug-related criminal cases reached 77,000 with about 91,000 arrested suspects (China's Annual Drug Report 2010).

Chinese government has adopted a variety of measures in response to the surging drug problems. Among others, the government has initiated several treatment modalities of drug abuse (see Zhang et al. 2011 for a detailed description and discussion of these treatment modalities). One of them is the mandatory, residential treatment centers administered by police agencies. These centers receive government financial support for their operation and function. Most drug users in the mandatory treatment centers were arrested and placed by police agencies at the county or city administrative level. A mandatory treatment center commonly provides medical treatment, physical excise, moral and legal education, drug and health education, and skills training. A drug user must reside in the center and the term for treatment is about 3–6 months.

Although the Chinese government has made efforts to curb drug abuse problems using serious treatment measures in social and criminal justice settings, the relapse rate of drug abuse is high. The rate varies from about 70 to 80 % according to different sources. For example, the UNODC Regional Centre for East Asia and the Pacific reports a 62 % relapse rate after 3 days and a 20 % relapse rate after 30 days by citing some Chinese official data (Bezziccheri 2009). Zhao et al.'s study (2001a, b) indicates that the relapse rates are as high as about 80 %. Because of the concern with the high relapse rate, a few Chinese studies have reported efforts to investigate the possible influential factors in drug abuse relapse using qualitative data gathered from face-to-face interviews.

For example, Zhu et al. (2009) conducted interviews with 235 male and 125 female drug users in a police mandatory treatment center in a city in Yunnan province. The information gathered from the interviews indicates that many of the drug users had relapse experience and that one influential factor the drug users had identified for their relapse was the need of a new living environment which could allow them to be cut off from the old drug-use network. The drug users also indicated that family support and help were important for them to stay drug-free after release. Another study, by Wang and Wang (2007), analyzed information gathered from drug users placed in a police mandatory treatment center in the city of Wuhan. Their analysis indicates a range of influential factors such as drug-use friends, stress, irritation, family conflict, and unemployment in drug abuse relapse.

Zhang et al.'s (2006) study of 208 opiate users who had received medical treatment in Sichuan province shows that drug dependence and associated withdrawal symptoms were the major reason for relapse as reported by the users. Zhao et al. (2001a, b) conducted a follow-up study of 178 heroin users who had received treatment in a reeducation-through-labor camp. Their analysis indicates that the heroin users who relapsed were likely to have drug-use family members, personality disorders, and made no attempt to be abstinent. Zhao

et al. (2001a, b) conducted another follow-up study of 100 heroin users from a different reeducation-through-labor camp and this study reveals that low self-esteem is an influential factor in drug abuse relapse.

In sum, China provides a strategic setting for researchers to explore drug abuse and relapse given the nation's large population size and its emerging economic power in the world. Although Chinese researchers have shown effort to investigate the factors in drug abuse and relapse, their studies are fairly limited in theory development and data collection. New and more systematic studies are much needed.

Western Research

Due to high rates of post-treatment drug abuse relapse, Western researchers and practitioners have shown increasing attention to developing relapse prevention programs as well as to studying various influential factors (Annis and Davis 1989; Daley and Raskin 1991; Gray 1993; Marlatt and Gordon 1985; Vaillant 1988). Studies have focused on a range of factors, from physiological, psychological, and environmental variables that may account for personal vulnerability to situational factors that may precipitate the relapse episode. Milkman et al. (1984) explained the relapse phenomenon as a complex interaction between biochemical, psychological, and social mechanisms. They noted that studies consistently revealed high relapse rates to be related to various categories of intra-psychic, interpersonal, or environmental factors. These three broad categories are consistent with Marlatt and Gordon's (1985) finding indicating that 76 % of relapses occur in three basic contexts: coping with intrapersonal negative emotional states, coping with interpersonal conflict, and coping with social pressure.

According to Hall et al. (1991) and Havassy et al. (1991), one factor that influences drug abuse relapse is a weak social support network from the surroundings. Havassy et al. (1991) analyzed data collected from 211 alcoholics, cigarette smokers, and opiate users completing treatment for drug use. They found that greater structural support (as measured by an index of social integration and by partner status) predicted a lower risk of relapse. However, if members in the drug users' networks also used their problem drugs, they were likely to have a higher relapse risk. Using the same data, Hall et al. (1990) examined the role of acute stress in drug abuse relapse. The data indicate that "withdrawal symptoms and negative and positive moods predicted first drug use, but only when assessed retrospectively. Prospective analyses failed to reveal a link between these variables and return to use." (p. 175). McMahon (2001) analyzed data collected from 304 cocaine-dependent subjects and found that stress predicted both cocaine relapse and the severity of outcome drug abuse (see Sinha 2001 for a review of the critical role of stress in drug abuse relapse).

Walton et al. (2003) analyzed follow-up data collected from 180 participants in a substance treatment program to assess individual, social, and demographic factors in drug abuse relapse. Their study indicates that greater resource needs and involvement in substance-using leisure activities, being of minority status, and being single directly predicted drug use relapse. Income, gender, problem severity, marital status, and race also indirectly predicted alcohol and drug use relapse.

Lavee and Altus (2001) compared the rates of drug abuse relapse between 25 men who remained drug-free and 25 men suffered drug relapse for 6 months after their participation in a detoxification program. Their discriminant analysis indicates that men who remained drug-free for the entire period maintained closer relationships with healthy families, whereas those who relapsed maintained closer relationships with unhealthy families.

In a meta-analysis of 69 studies on the predictors of continued drug use during and after treatment for opiate addiction, Brewer et al. (1998) found 10 statistically significant variables, including high level of pretreatment opiate/drug use, prior treatment for opiate addiction, no prior abstinence from opiates, abstinence from alcohol use, depression, high stress, unemployment/employment problems, association with substance abusing peers, short length of treatment, and leaving treatment prior to completion. They concluded that "to prevent relapse, treatment interventions should address multiple variables because no single variable strongly predict continued drug use." (p. 73).

In sum, Western studies have investigated a variety of factors in drug abuse relapse. These factors can be categorized into five groups, including demographic factors (e.g., age and gender), drug-related factors (e.g., drug dependence), treatment factors (e.g., prior treatment experience), psychological factors (e.g., stress or mental disorder), and social factors (e.g., drug using friends).

Current Study

Adopting the five groups of factors in drug abuse relapse that have been studied in Western research, the present study is to explore the characteristics of Chinese relapsed drug users associated with their treatment experience in the police mandatory treatment centers. The exploration is conducted based on a comparison of Chinese drug users who received the police mandatory treatment for multiple times with those who had the treatment for first time. They represent two distinctive groups of drug users that can be conceptualized as the "relapse" group and the "first-time" group. A main research question is: does the "relapse" group have any distinctive characteristics compared to the "first-time" group?

To address the research question, the study includes variables that cluster in the five groups of factors. The demographic variables include gender, age, education, employment status, marital status, and family income. The major type of drugs used and drug dependence are the drug-related variables. Other prior treatment experience represents the treatment factor and mental disorder is the psychological variable. Family members' drug use, friends' drug use, and neighbors' drug use are the social factors.

Data and Methods

Data Collection

The data used in the present study come from a survey of 177 drug users in 8 mandatory treatment centers administered by police in the city of Chongqing, China. The survey was conducted by the Center for Drugs, Crime, and Public Policy, Southwest University of Political Science and Law, in 2009. Chongqing is a newly developed, large municipality that is directly under the leadership of the Chinese central government, after the other three—Beijing, Shanghai, and Tianjin. It is located on the upper reaches of the Yangtze River which connects the middle and western parts of China. Currently, the municipality is populated with 30.9 million residents and is southwest China's biggest industrial and commercial center with inland ports (http://english.cq.gov.cn/). It has 40 administrative districts and counties that cover an area with 82,400 km^2. Given its unique geographic location in connecting with the western part of China adjacent to the "Golden Triangle," the city is facing flourishing drug-related problems.

Chongqing, as a large metropolitan area, has mandatory treatment centers run and managed by the Chongqing police department in each district or county of the city. The number of drug users placed in each center varies across the districts and counties. Given our limited resources, our survey focused on the 10 districts that constitute the old and central urban areas of the city. Each of the 10 districts has one mandatory treatment center administered by the district police department. There were no drug users in two of the centers at the time when the survey was conducted. Because the number of drug users placed in each of the other 8 treatment centers was relatively small, ranging from 6 to 50, all the drug users in these centers were surveyed.

China does not have an IRB system and related legal statues for the protection of human subjects. We made serious efforts to adopt the general IRB principles provided in the U.S., as they were applicable to the Chinese setting. Researchers who want to conduct a drug survey as we did must obtain an approval from the police department that has the jurisdiction over the city. We obtained an approval from the Chongqing Police Department for conducting the survey.

Data were collected through anonymous, self-administered questionnaires at a suitable room in each center (e.g., a conference or a library room). With the help and assistance of the Chongqing police headquarters, the research team contacted the police administrator who was in charge of each treatment center to arrange and schedule the questionnaire administration. The questionnaire was intended to be self-administered, although onsite members of the research team were allowed to clarify questions if requested. Center officers were not allowed to be present or have any involvement when the questionnaire was self-administered. Respondents were assured of the voluntary nature of their participation, their right to refuse to answer any questions, and the confidentiality of their responses. As on-site researchers who administered the questionnaires observed, respondents were willing to participate in the survey and express their opinions. After the questionnaires were completed, they were placed in large envelopes, sealed, and transmitted directly to the drug research center where they were locked in safe cabinet. A total of 177 valid questionnaires were obtained, yielding an extremely high response rate of 98.3 % which is fairly common in surveys conducted in China (Zhang et al. 2007).

Measures

One survey question allows the study to categorize the respondents into the "relapse" group (received police mandatory treatment for multiple times) and the "first-time" group (received police mandatory treatment for first time). The question asks: "Were you admitted to a police mandatory treatment center before?" The response categories for the question are 1 = yes; 0 = no. Analysis of the responses indicates that 107 respondents reported "yes" and 70 indicated "no". These two groups are compared in their characteristics using the five types of variables.

For demographic variables, gender is a dummy variable coded in the direction of males. Age is measured in four age groups: 17–25; 26–35; 36–45; 46 and over. The measure of education also has five categories: 1 = illiteracy; 2 = elementary school; 3 = middle school; 4 = high school; 5 = college and over. Initially, the survey item of marital status had 5 response categories: 1 = single; 2 = married for first time; 3 = divorced; 4 = widowed; 5 = remarried. Because over 50 % of the respondents were single and no respondents were widowed, we recoded the responses into two categories (1 = married; 0 = single) to create a dummy variable. The variable of family income is measured using respondents' reports of their average family monthly income with five response categories (1 = 499 *yuan* (Chinese dollars) or below; 2 = 500–999 *yuan*; 3 = 1,000–1,999 *yuan*; 4 = 2,000–3,999 *yuan*; 5 = 4,000 *yuan* or above).

Drug-related variables include the major type of drugs used when arrested and drug dependence. The major type of drugs used is measured based on an open-ended question asking "What is the major drug you used this time?" Drug dependence is measured using responses to 20 survey items that asks respondents whether they needed to use more, felt less effect in using the same amount of, want to or try to cut down or stop using, and were able to cut down or stop using marijuana, cocaine, heroin, meth, and *Maguo* (a Chinese local term for a derivative of meth which is a popular illicit drug in China) during the past 12 months. The items are adopted from the U.S. National Survey on Drug Use and Health (USDUH). The response categories for these items are 1 = yes; 2 = no (see Appendix 1 for a complete list of the items). The study counted the responses in the direction of the severity of drug use to create the measure of drug dependence. The reliability coefficient (Alpha) is 0.83 for the index. To facilitate the comparison of the two groups, the study collapsed the index into three levels of drug dependence: 1 = low; 2 = medium; 3 = high.

The measure of the psychological variable—mental disorder—is based on responses to 3 survey items asking respondents whether they had experienced a period of time in their life they felt sad, empty or depressed, were very discouraged about how things were going in their life, and lost interest in most things they usually enjoyed like work, hobbies, and personal relationships. The response categories are 1 = yes; 2 = no. The items are also adopted from the USDUH (see Appendix 1 for a complete list of the items). The study counted the responses to "yes" to create a measure of mental disorder. The reliability coefficient (Alpha) is 0.76 for this index. The index shows four categories ranging from 0 to 3. Accordingly, the study conceptualized four levels of mental disorder: 0 = low; 1 = medium low, 2 = medium; 3 = high.

The social variables include family members' drug use, friends' drug use, and neighbors' drug use. Three survey items ask respondents whether they had family members, friends, and neighbors who also used drugs. The response categories for the survey items are 1 = "yes;" 0 = "no."

The study compares the characteristics of the "relapse" and the "first-time" groups using the five types of variables. The comparison is performed with X^2 tests. It allows the study to examine the distinctive characteristics of relapsed drug users associated with their treatment experience in police mandatory treatment centers.[1]

Results

Table 1 reports the results of the comparison. For the comparison of the demographic variables, only age significantly distinguishes between the two groups. Respondents in the "relapse" group were likely to be older (4.5 % in the age group of 17–25 years old) than those in the "first-time" group (32.9 % in the same age group). However, both groups have similar characteristics in other demographic variables (i.e., gander, education, employment status, marital status, and family income). Respondents in both groups were likely to be male, have a low level of education, have no job, remain single, and come from low-income families.

[1] The study did not conduct multivariate analysis of the relapse status with the five types of independent variables because the sample size may be too small to detect any meaningful difference between the two groups. The sample size may reduce to a total of about 112 respondents in multivariate analysis due to missing values.

Table 1 Comparison of the characteristics of relapse and first-time groups

	Relapse group		First-time group			
Variable	*n*	%	*n*	%	*n*	X^2
Demographic factors						
Gender					176	0.174
Male	82	77.4	56	80.0		
Female	24	22.6	14	20.0		
Age (years)					175	25.710*
17–25	5	4.8	23	32.9		
26–35	53	50.5	23	32.9		
36–45	38	36.2	17	24.3		
46 or over	9	8.6	7	10.0		
Education					175	4.245
Illiteracy	2	1.9	1	1.4		
Elementary school	14	13.2	7	10.1		
Middle school	53	50.0	38	55.1		
High school	35	33.0	18	26.1		
College or above	2	1.9	5	7.2		
Employment status					174	3.138
Employed	25	23.8	25	36.2		
Not employed	80	76.2	44	63.8		
Marital status					175	0.681
Single	83	77.6	49	72.1		
Married	24	22.2	19	27.9		
Family income (in Chinese dollars)					161	9.040
499 or below	41	41.8	15	23.8		
500–999	14	14.3	8	12.7		
1,000–1,999	20	20.4	21	33.3		
2,000–3,999	16	16.3	9	14.3		
4,000 or above	7	7.1	10	15.9		
Drug-related factors						
Type of drugs used					161	46.834*
Heroin	70	70.7	12	19.4		
Meth (*Bigdu*)	17	17.2	39	62.9		
Meth derivative (*Maguo*)	7	7.1	10	16.1		
Other	5	5.1	1	1.6		
Drug dependence					177	15.326*
Low	29	27.1	39	55.7		
Medium	28	26.2	14	20.0		
High	50	46.7	17	24.3		
Treatment factor						
Other prior treatment					170	10.088*
Yes	47	44.3	13	20.3		
No	59	55.7	51	79.7		
Psychological factor						

Table 1 (continued)

Variable	Relapse group		First-time group			
	n	%	*n*	%	*n*	X^2
Mental disorder					177	14.488*
Low	30	28.0	35	50.0		
Medium low	16	15.0	15	21.4		
Medium	24	22.4	6	8.6		
High	37	34.6	14	20.0		
Social factors						
Family members' drug use					169	0.002
Yes	8	7.6	5	7.8		
No	97	92.4	59	92.2		
Friends' drug use					169	9.818*
Yes	67	63.8	25	39.1		
No	38	36.2	39	60.9		
Neighbors' drug use					112	1.433
Yes	45	56.2	14	43.8		
No	35	43.8	18	56.2		

*$p<.01$

As the results show, the two drug-related variables significantly differentiate the "relapse" group from the "first-time" group. Respondents in the "relapse" group were more likely to be heroin users (70.7 %) than those in the "first-time" group (19.4 %). Use of those new types such as meth (*Bingdu*) and its derivative (*Maguo*) was more common among the respondents in the "first-time" group than it was among those in the "relapse" group. Also, about half the respondents (46.7 %) in the "relapse" group reported a high level of drug dependence compared to about a quarter of respondents (24.3 %) in the "first-time" group who had such an experience.

The treatment factor also significantly distinguishes the "relapse" group from the first-time group. Over 40 % of the respondents in the "relapse" group received treatment in places such as a hospital or a doctor's office during last 12 months. In comparison, only 20.3 % of respondents in the "first-time" group had such a prior treatment experience.

The results further indicate that respondents in the "relapse" group were likely to have a high level of mental disorder (34.6 %) than those in the "first-time" group (20.0 %). It implies that the "relapse" group may have some distinctive psychological characteristics that deserve special attention.

Finally, friends' drug use is a significant social factor that also distinguishes the "relapse" group from the "first-time" group as the results show. Respondents in the "relapse" group were more likely to have friends who were also drug users (63.8 %) than those in the "first-time" group (39.1 %). However, the two groups have no significant difference in the measures of family members' and neighbors' drug use.

Discussion and Conclusion

Using data collected from a survey of drug users in police mandatory treatment centers in a large city of China, the present study explores the characteristics of Chinese relapsed drug

users associated with their treatment experience in the police mandatory treatment centers. The exploration is based on a comparison of two groups of the respondents surveyed. One group had prior treatment experience in the police mandatory treatment centers (the "relapse" group) and the other was for the first time receiving such mandatory treatment (the "first-time" group). The comparative analysis was conducted by adopting five types of factors that are associated with drug relapse and have been studied in the Western literature. The five types of factors include the demographic, drug-related, treatment, psychological, and social variables. The data reveal several interesting findings.

First, it seems that the "relapse" group does not differ significantly from the "first-time" group in several important demographic variables (i.e., gender, age, education, employment status, marital status, and family income). Respondents in both groups were likely to be male, have a low level of education, have no job, remain single, and come from low-income families. Only age is a significant factor that distinguishes the "relapse" group from the "first-time" group. Respondents in the "first-time" group were likely to be younger than those in the "relapse" group. These findings may imply that drug users in urban China, no matter their statuses of usage and treatment, are likely to have similar demographic characteristics.

In contrast, the two groups are significantly different from each other in the drug-related factors. Respondents in the "relapse" group were more likely to be the users of heroin which is a hard drug and has a high potential to be addictive if it is used. The "first-time" group is characterized by using some new types of drugs such as meth (*Bingdo*) and its derivative (*Maguo*). Also, a significantly larger proportion of respondents in the "relapse" group experienced a high level of drug dependence than that of respondents in the "first-time" group. These findings indicate that drug relapse is likely to be contingent on the types of drugs used and the level of drug dependence in urban China.

The two groups also significantly differ in the treatment factor. Respondents in the "relapse" group were more likely to receive other prior treatment than those in the "first-time" group. Such prior treatment experience may be an indicator of their serious involvement in drug abuse that deserves more attention.

The psychological factor—mental disorder—is another significant variable that distinguishes between the two groups. Respondents in the "relapse" group showed a higher level of mental disorder than those in the "first-time" group. This implies that psychological treatment may also be important in preventing drug users from relapse.

Finally, the social factor—friends' drug use—is significant in differentiating the two groups. Respondents in the "relapse" group were more likely to have friends who were also drug users than those in the "first-time" group. The finding implies that drug abuse relapse may be a behavioral phenomenon that is likely to take place in a drug-related network or circle.

In sum, the present study has identified several distinctive characteristics of Chinese relapsed drug users. The findings imply that relapse among Chinese drug users may also have multiple factors as demonstrated in Western research. Consequently, preventing drug relapse may need multiple approaches and efforts which are medical, psychological, and social. An effective integration and coordination of the different approaches and efforts may be a prerequisite in preventing drug relapse. We call for further research to explore the influential factors on drug abuse relapse using larger samples. Data collected from a larger sample may allow researchers to conduct multivariate analysis to explore causal relationships.

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Appendix A

Survey items of drug dependence and mental disorders

1. Drug dependence

During the past 12 months, did you need to use more marijuana than you used to in order to get the effect you wanted?

During the past 12 months, did you notice that using the same amount of marijuana had less effect on you than it used to?

During the past 12 months, did you want to or try to cut down or stop using marijuana?

During the past 12 months, were you able to cut down or stop using marijuana or every time you wanted to or tried to?

During the past 12 months, did you need to use more cocaine than you used to in order to get the effect you wanted?

During the past 12 months, did you notice that using the same amount of cocaine had less effect on you than it used to?

During the past 12 months, did you want to or try to cut down or stop using cocaine?

During the past 12 months, were you able to cut down or stop using cocaine every time you wanted to or tried to?

During the past 12 months, did you need to use more heroin than you used to in order to get the effect you wanted?

During the past 12 months, did you notice that using the same amount of heroin had less effect on you than it used to?

During the past 12 months, did you want to or try to cut down or stop using heroin?

During the past 12 months, were you able to cut down or stop using heroin every time you wanted to or tried to?

During the past 12 months, did you need to use more ice than you used to in order to get the effect you wanted?

During the past 12 months, did you notice that using the same amount of ice had less effect on you than it used to?

During the past 12 months, did you want to or try to cut down or stop using ice?

During the past 12 months, were you able to cut down or stop using ice every time you wanted to or tried to?

During the past 12 months, did you need to use more *Maguo* than you used to in order to get the effect you wanted?

During the past 12 months, did you notice that using the same amount of *Maguo* had less effect on you than it used to?

During the past 12 months, did you want to or try to cut down or stop using *Maguo*?

During the past 12 months, were you able to cut down or stop using *Maguo* every time you wanted to or tried to?

2. Mental disorder

Have you ever in your life had a period of time lasting several days or longer when most of the day you felt sad, empty, or depressed?

Have you ever had a period of time lasting several days or longer when most of the day you were very discouraged about how things were going in your life?

Have you ever had a period of time lasting several days or longer when you lost interest in most things you usually enjoy like work, hobbies, and personal relationships?

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