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Drug use in rural China: a preliminary investigation in Hunan Province

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Abstract

Aims—To compare characteristics and illicit drug abuse patterns among drug abusers in rural and urban areas of Hunan Province, China.

Measurements and design—Data collected by public security bureau on newly registered drug abusers between 2005 and 2008 in five urban and five rural areas ($n = 1639$) were extracted anonymously and analyzed.

Setting and participants—All newly registered drug users in urban ($n = 812$) and rural ($n = 827$) areas of Hunan Province were included.

Findings—Drug users from the rural areas were younger [31 (6.6) versus 34 (8.0) years, $P < 0.001$], with a higher proportion of males (86% versus 82%, $P < 0.05$) or married (34% versus 27%, $P < 0.01$). Rural drug users reported an earlier onset of drug use [27 (5.9) versus 30 (7.9) years old, $P < 0.001$], were more likely to report heroin as their primary drug of abuse (53% versus 47%, $P < 0.001$) and had a lower prevalence of criminal activities (19% versus 31%, $P < 0.001$). Rural drug users were less likely to report needle sharing (1.8% versus 4.3%, $P < 0.01$), less likely to report being human immunodeficiency virus positive (0.8% versus 2.6%, $P < 0.01$) and less likely to report prior drug treatment participation (2.8% versus 6.8%, $P < 0.001$).

Conclusions—Drug abuse is a substantial problem in both urban and rural areas in China. The very low proportion of newly registered drug users reporting any prior drug abuse treatment points to the importance of expanding substance abuse treatments, especially in rural areas where treatment penetration is even lower than in urban areas.

Keywords

China; drug abuse; drug treatments; heroin; injection drug use; rural areas

INTRODUCTION

Coinciding with the government reform and open-door policy of the 1980s, abuse of illicit drugs has gradually re-emerged as a serious problem in China [1,2]. The number of registered drug abusers increased from 70 000 in 1990 to 1.335 million by the end of 2009, with more than 70% of the registered drug users primarily abusing heroin [3]. However, the actual number of drug users in China is estimated to be substantially higher [4].

In China, drug abuse, especially injection of heroin, is one of the most significant factors contributing to the spread of human immunodeficiency virus (HIV)/acquired immune deficiency syndrome (AIDS). Currently, it is estimated that there are about 740 000 HIV-infected individuals in China [5], and drug abusers account for approximately 40% of this population [6]. Many heroin abusers in China are injection drug users (IDU) who also often share needles and/or other injecting equipment. A substantial proportion of female heroin abusers also engage in commercial sex, providing a bridge for HIV transmission to the general population [7-10].

Abuse of illicit drugs has been reported as a significant problem in more than 70% of Chinese counties, cities or districts, and in some areas of China drug-related crime accounts for 70-80% of all crimes [1,11,12]. In the past decade, drug abuse has also become prevalent in rural areas, especially in the northwest and central regions of China [1,13,14]. However, abuse of illicit drugs in the rural areas of China has not been studied extensively, and most of the government-level and academic research, as well as health-care efforts, are focused on substance abuse problems in urban centers rather than in rural areas of China. In addition to the geographical isolation of many rural areas, the social stigma of drug use, limited access to treatments and financial burden of entering available drug treatments may result in very limited treatment participation among drug abusers in rural areas.

While the Chinese government has established more than 680 methadone maintenance clinics covering 27 provinces and serving some 242 000 heroin users by the end of 2009 [15], the majority of these treatment centers are in the urban areas. Because of substantial differences between urban and rural areas of China, including cultural, economic and health-care disparities, the patterns of drug abuse and drug-related problems could also be very different. In order to undertake specific and optimal efforts in rural areas to effectively reduce the rates of drug abuse and HIV infection and to help rehabilitate drug abusers in rural areas of China, we conducted this study to explore the patterns of illicit drug abuse and drug-related problems in several rural areas of Hunan province.

Geographically, Hunan is located in the central south of China, adjacent to Guangdong Province, Guangxi Province and Guizhou Province. This geographical region plays an important role in trafficking illicit drugs to other regions and cities of China [11]. Hunan is a largely agricultural province; about 60% of the total population of approximately 68.45 million are rural residents [16]. By the end of 2010 the total number of registered drug users in Hunan was about 100 000 [Hunan Province Centers for Disease Control and Prevention; 2010. Unpublished internal report.].

METHODS

Data collection

From July to October, 2009, 20 trained investigators, including 10 research assistants and 10 police officers, conducted a review of the drug user registration system and police and public security records between 2005 and 2008. The investigators identified and extracted anonymous data on 1639 newly registered drug abusers in five rural areas (Shaodong, Wugang, Qiyang, Qidong and Shuangfeng, with approximate total population of 3.7 million) and in five urban areas (Tianxin, Yuhu, Zhuhui, Heshan and Hongjiang, with an approximate total population of 2.2 million) of Hunan Province, China. Classification of the areas as rural or urban was based on the Chinese official designation of residences. These designations are based on population density, predominant economy (agricultural or business/industrial economic base, employment opportunities and average income/salary), availability of various forms of public transportation and concentration of public resources (medical, educational or other services). The average population density in the five urban areas (approximately 1667 individuals/km²) was more than three times greater than in the five rural areas (approximately 536 individuals/km²).

Drug user registration system in China consists of a nation-wide computerized registry. A data extraction form was designed to record the current residency code, basic demographic information and available data on current and past illicit drug use, selected risk behaviors and criminal activities or convictions for all newly registered individuals who were residents of five rural and five urban areas selected for our study.

Statistical analyses

All statistical analyses were conducted in SPSS version 18.0 software package. In addition to general descriptive statistics, we also performed *t*-tests (for continuous variables) and χ^2 tests (for categorical variables) to compare drug abusers residing in rural versus urban areas of Hunan Province on available demographic characteristics, drug use patterns and criminal activities.

RESULTS

Of 1639 drug abusers included in the study, 827 were from rural and 812 from urban areas; 84% of the total sample were male; 98% were aged between 19 and 47 years, age range 14-60 years; 82% had 9 or fewer years of education; 30% were married. Study participants reported using illicit drugs for the mean [standard deviation (SD)] of 4.0 (3.7) years. Heroin was the predominant primary drug of abuse (1280 of 1639, 78%), followed by ketamine (224 of 1639, 14%), amphetamine-type stimulants (ATS) (109 of 1639, 7%), buprenorphine (20 of 1639, 1%; with all 20 buprenorphine abusers from the urban areas), opium (five individuals), poppy shell (four individuals in rural areas only) and marijuana (one individual in an urban area); 633 of 1639 (39%) had records indicating life-time injection drug use; 50 of 1639 (3%) reported sharing needles and 28 of 1639 (2%) reported being HIV-positive. Only 78 of 1639 (4.8%) reported ever being in substance abuse treatment, with 74 of 78 reporting past methadone treatment.

Comparing drug abusers in urban and rural areas, we found that drug abusers from the rural areas were younger [mean (SD) years: 31 (6.6) versus 34 (8.0), $P < 0.001$], with younger age of drug abuse onset [mean (SD) years: 27 (5.9) versus 30 (7.9), $P < 0.001$]; the proportion of male drug abusers in the rural areas was higher (86% versus 82%, $P < 0.05$); a higher proportion of them was married (34% versus 27%, $P < 0.01$) and a lower proportion was divorced (3% versus 6%, $P < 0.01$).

Heroin abuse was reported as the primary drug of abuse by 677 of 827 (53%) drug users from the rural areas, and by 603 of 812 (47%) drug users from the urban areas ($P < 0.001$). Life-time ketamine abuse was reported by a lower proportion in the rural (100 of 827, 12%) than in the urban areas (124 of 812, 15%), but this difference did not reach the level of statistical significance ($P = 0.061$). Life-time ATS abuse was comparably infrequent in the rural (51 of 827, 6%) and urban (58 of 812, 7%) areas ($P = 0.428$). All 20 individuals who reported life-time buprenorphine abuse came from the urban areas. There were no statistical differences between the rural and urban groups in the duration of drug use [mean (SD): 4.1(3.6) versus 3.9 (3.9) respectively, $P = 0.193$].

While reports of life-time IDU in urban and rural areas were comparable (311 of 812, 38% versus 322 of 827, 39%, respectively, $P = 0.79$), a higher proportion of individuals who reported life-time needle sharing came from the urban than from the rural areas (35 of 812, 4.3% versus 15 of 827, 1.8%, $P < 0.01$), and the urban drug abusers also had a higher proportion of individuals reporting being HIV positive (21 of 812, 2.6%) compared to the rural drug abusers (seven of 827, 0.8%, $P < 0.01$). Only 78 of 1639 (4.8%) of individuals in the sample reported ever being in substance abuse treatments, and 55 of 812 (6.8%) came from the urban areas, compared to 23 of 827 (2.8%) from the rural areas ($P < 0.001$). Drug users in rural areas also reported less crime or criminal records (154 of 827, 19% versus 248 of 812, 31%, $P < 0.001$).

DISCUSSION

The findings of this study document that rural areas account for a substantial number of newly registered drug abusers in Hunan, China, and that rural drugs users are generally younger, initiated drug use at an earlier age, report a higher prevalence of heroin as their primary drug of abuse and are less likely to report criminal activity or arrests than urban drug users. Although life-time prevalence of injection drug use was comparable between urban and rural drug users, urban drug users had a higher prevalence of life-time needle-sharing and HIV infection. Consistent with reports that ketamine has become an important drug of abuse in many Asian countries [17], ketamine was reported as the predominant drug of abuse by 14% of the overall sample, and urban drug abusers were significantly more likely than rural drug abusers to report ketamine as their primary drug of abuse. Differences in types of drugs used and needle-sharing practices may reflect differences in social or group factors affecting these behaviors.

Of particular note, fewer than 5% of the overall sample of drug abusers reported any prior drug abuse treatment and, despite a comparable duration of drug use between rural and urban drug abusers, a significantly lower proportion of rural drug abusers had any prior drug

abuse treatment. These findings point to the importance of continued rapid scale-up of methadone maintenance and other drug abuse treatments and of developing drug abuse treatment services in rural as well as urban areas, which have been the focus of most of the recent scale-up efforts [14].

Our preliminary investigation is based on self-report data collected originally by public security or police officials. It is likely that these newly registered drug-abusing individuals under-reported some drug use or drug-related behaviors (e.g. past IDU or needle sharing, types of illicit substances ever used). None the less, it is unlikely that this under-reporting is differentially biased among individuals from rural or urban areas. Although the numbers of newly registered drug users from urban and rural areas were comparable, the rural areas in our investigation included a substantially larger population base. Data from the study cannot be used to compare drug abuse prevalence between rural and urban areas because of probable systemic differences in detection and reporting, but the study data do indicate that drug abuse affects a substantial number of individuals in rural areas. More detailed studies are needed to investigate further potential differences between drug use prevalence, patterns and trends in rural and urban areas of China and to evaluate optimal strategies for disseminating treatment to rural as well as urban populations.

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Declarations of interest

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