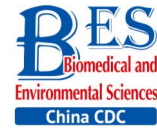


Letter to the Editor



Incidence of Interpersonal Violence among Individuals with Drug Addiction Receiving Compulsory Treatment: A Survey at Two Drug Detention Centers in Hunan, China*

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Drug dependence is a serious global health problem. To assist individuals with drug addiction, China alone has established 678 Compulsory Detoxification Detention Centers (CDDCs) that treat over 300,000 individuals who are required by national law to receive compulsory treatment^[1] because community-based outpatient treatment failed.

Using illicit drugs increases the risk of being involved in interpersonal violence, either as a victim or a perpetrator or both^[2]. Also, research suggests that the dangerousness and frequency of abusive behaviors worsens as the severity of substance dependence increases^[3]. Existing research evidence is fragmented, however, fails to detail the characteristics of exposure to violence experienced among drug users with serious addictive disorders^[4-6].

This study was designed to provide detailed epidemiological evidence on the frequency of interpersonal violence among a sizable sample of individuals with serious addiction disorders that required mandatory detention in China.

Because CDDCs house individuals with serious drug addiction disorders, surveying a nationally or provincially representative sample through probability sampling schemes is challenging. The population of interest is vulnerable and a survey would involve collection of confidential and private information. We therefore used non-probability sampling to conduct a retrospective survey at two CDDCs in Hunan Province, China. One CDDC was for women; it housed about 800 individuals at the time of the survey and is located in Zhuzhou city. The

other CDDC, for men, is located in Changsha city and housed about 1,500 individuals at the time of the survey. Eligible participants were individuals with regular drug use prior to detention, ages 16-65 years, who had literacy and capacity to complete the survey independently. All individuals were informed about the contents of the survey and chose to complete a self-administered paper questionnaire survey freely. No penalty or reward was offered for choosing to complete the survey or not complete the survey. Participants also were free to omit any items they preferred not to answer. Signed informed consent was provided by all participants who agreed to complete the survey and researchers were present to help individuals who were unable to understand or answer the survey questions. The research protocol was approved by the Ethics Committee of Xiangya School of Public Health, Central South University (approval number: No. XYGW-2017-31). Data were collected between July 7, 2017 and July 13, 2017 and were analyzed anonymously.

In the questionnaire, we adopted the World Health Organization (WHO) definition of interpersonal violence^[7]. Four types of interpersonal violence, physical violence, psychological violence, sexual violence, and child maltreatment, were defined and assessed based on the Multiple Indicator Cluster Surveys (MICS) and Demographic and Health Surveys (DHS)^[8]. Information about the individuals' sociodemographic factors was also collected, based on previous publications^[9].

Each participant was invited to complete a self-administered paper questionnaire survey. Information on the type of violence (physical,

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psychological, sexual, child maltreatment), the role of the study participant (victim, perpetrator), the relationship between the victim and perpetrator (spouse, child, other acquaintance, stranger), and the severity of the violence (not requiring professional medical treatment, requiring a visit to a doctor, requiring hospitalization, leading to permanent disability) was also collected.

We investigated the incidence of interpersonal violence among participants as victims and as perpetrators separately over the six months prior to their mandated detention at the CDDC. If a participant had experienced (or perpetrated) twice or more, we collected information only about the most recent violent event.

Incidence of interpersonal violence and 95% confidence intervals (CI) were calculated for participants as victims and perpetrators separately. Chi-square tests examined interpersonal violence incidence differences across location, sex, age group,

level of education, marital status, status of employment, and type of drug used. Multivariate logistic regression examined associations of the outcome variable (inflicting/experiencing violence events or not) and relevant factors (sociodemographic variables and type of drug used). ' $P < 0.05$ ' was regarded as statistically significant. Data analyses were performed using SPSS 19.0 (IBM, the U.S).

In total, 1,392 (61% of those eligible) individuals agreed to participate in the survey. Sixty-seven responses were excluded due to invalid responding (logic errors between different survey questions and/or missing values for over 2/3 of the questions), leaving 1,325 valid survey responses for analysis. Valid responses were from 1,011 men (76% of sample) and 314 women (24%), and represented 619 urban residents (47%) and 706 rural residents (53%) (Table 1). Participants under 45 years old and reporting less than 10 years of formal education

Table 1. Incidence of Interpersonal Violence among Individuals in Compulsory Drug Detention Centers in Hunan Province, China

| Variable | Number (%) | Incidence of Suffering Violence (% ^a , 95% CI) | Incidence of Perpetrating Violence (% ^a , 95% CI) |
|--------------------------------|---------------|---|--|
| Total | 1,325 (100.0) | 28.6 (26.1, 31.1) | 21.6 (18.3, 22.9) |
| Residence location | | | |
| Urban | 619 (46.7) | 25.9 (22.4, 29.4) [*] | 17.9 (14.8, 21.0) [*] |
| Rural | 706 (53.3) | 31.2 (27.6, 34.6) | 23.0 (19.8, 26.3) |
| Sex | | | |
| Male | 1,011 (76.3) | 31.7 (28.8, 34.7) ^{**} | 23.5 (20.7, 26.2) ^{**} |
| Female | 314 (23.7) | 18.7 (14.3, 23.1) | 11.8 (8.2, 14.5) |
| Age, years | | | |
| ≤ 25 | 158 (11.9) | 36.7 (28.9, 44.3) | 23.3 (18.8, 27.8) [*] |
| 26-35 | 557 (42.0) | 28.2 (24.5, 32.0) | 22.3 (17.6, 27.1) |
| 36-45 | 413 (31.2) | 25.9 (21.6, 30.2) | 18.6 (14.1, 23.1) |
| ≥ 46 | 129 (9.7) | 25.2 (17.4, 33.0) | 15.4 (11.1, 19.7) |
| Level of formal education | | | |
| < 10 years | 839 (63.3) | 29.2 (26.1, 32.4) | 20.3 (17.4, 23.1) |
| ≥ 10 years | 438 (33.1) | 26.4 (22.1, 30.6) | 19.1 (15.4, 22.9) |
| Marital status | | | |
| Unmarried | 517 (39.0) | 29.6 (25.6, 33.6) | 21.6 (18.0, 25.3) |
| Married | 409 (30.8) | 27.8 (23.4, 32.2) | 18.4 (14.6, 22.3) |
| Divorced/widowed | 367 (27.7) | 27.5 (22.8, 32.2) | 21.0 (16.6, 25.4) |
| Employment | | | |
| Employed ^a | 490 (37.9) | 27.6 (23.6, 31.7) | 18.9 (15.3, 22.5) |
| Unemployed or retired | 806 (60.8) | 29.2 (26.0, 32.4) | 21.4 (18.4, 24.3) |
| Type of drug | | | |
| Traditional drugs ^b | 289 (21.8) | 29.3 (22.9, 33.6) | 18.6 (14.0, 23.4) |
| New drugs ^c | 967 (73.0) | 29.5 (26.6, 32.4) | 21.5 (18.8, 24.2) |

Note. Incidence of interpersonal violence refers to violence incidence among individuals with drug addiction in the six months prior to the time they entered the compulsory drug detention centers. ^aFull-time students are included in this category. ^bTraditional drugs include opium, morphine, heroin, and marijuana. ^cNew drugs signify chemical synthesis of artificial hallucinogens or stimulant drugs. CI: confidence interval. ^{*} $P < 0.05$, ^{**} $P < 0.01$.

constituted 85% and 63% of study sample, respectively. Thirty-nine percent participants were unmarried and 61% were either unemployed or retired. A large portion of the sample ($n = 967$; 73%) reported using 'new' drugs such as chemical synthesis of artificial hallucinogens or stimulants.

Overall, 365 participants (27.5%) reported having experienced interpersonal violence as victims in the 6 months prior to their detention for drug addiction, equal to a violence suffering incidence rate of 28.6% (95% *CI*: 26.1%, 31.1%) (Table 2). Significant differences emerged between individuals from urban and rural areas (25.9% vs. 31.2%) and between males and females (31.7% vs. 18.7%) (Table 1). Physical (51.3%) and psychological (40.2%) violence constituted the majority of violent incidents experienced, with sexual violence comprising a smaller portion (8.5%) (Table 2). Violence was perpetrated by a range of individuals, including strangers (42.6%), spouses (30.1%), and other acquaintances (27.0%). Sixty-nine point three percent of violent events caused injuries that were not serious enough to require professional medical attention, but 59 (20.3%) required a doctor visit, 16

(5.5%) required hospitalization, and 14 (4.8%) of incidents were so violent that they resulted in permanent disability.

Of all participants, 254 (19.2%) person reported perpetrating interpersonal violence against others in the 6 months prior to entering the CDDC. Similar to victimization rates, incidence rates of violence perpetration were somewhat higher among rural residents (23.0%) and men (23.5%) compared to urban residents (17.9%) and women (11.8%). The youngest participants (≤ 25 years old) had the highest incidence rate of perpetrating violence against others (Table 1). Physical violence was most common (56.4%), followed by psychological violence (30.5%), sexual violence (11.5%), and child maltreatment (1.6%) (Table 2). Spouses comprised 40.9% of the victims and strangers 40.5% of the victims, followed by other acquaintances (12.1%) and the participants' children (6.5%). Most (70.0%) violent events did not require professional medical attention, although 16.7% required a doctor visit, 9.9% required hospitalization, and 3.4% were severe enough to cause permanent disability.

Table 2. Characteristics of Interpersonal Violence among Individuals Residing in Compulsory Treatment Centers in Hunan Province, China

| Variable | Suffering Violence, <i>n</i> (%) | Perpetrating Violence, <i>n</i> (%) |
|---|----------------------------------|-------------------------------------|
| Total | 365 (100) | 254 (100) |
| Type of violence | | |
| Physical violence | 176 (51.3) | 137 (56.4) |
| Psychological violence | 138 (40.2) | 74 (30.5) |
| Sexual violence | 29 (8.5) | 28 (11.5) |
| Child maltreatment | - | 4 (1.6) |
| Relationship between perpetrators and victims | | |
| Spouse | 89 (30.1) | 88 (40.9) |
| Children | - | 14 (6.5) |
| Other acquaintances | 80 (27.0) | 26 (12.1) |
| Strangers | 126 (42.6) | 87 (40.5) |
| Severity of injury | | |
| Minor – doctor treatment not required | 201 (69.3) | 142 (70.0) |
| Moderate – doctor treatment required | 59 (20.3) | 34 (16.7) |
| Major – hospitalization required | 16 (5.5) | 20 (9.9) |
| Severe – causing permanent disability | 14 (4.8) | 7 (3.4) |

Note. Interpersonal violence refers to interpersonal violence among individuals with drug addiction in the six months prior to the time they entered the compulsory drug detention centers. 22, 70, and 75 of 365 individuals who reported being inflicted did not answer the survey questions concerning type of violence, relationship between perpetrators and victims severity of injury, respectively; and 11, 39, and 51 of 365 individuals who reported perpetrating violence did not answer the survey questions concerning type of violence, relationship between perpetrators and victims severity of injury, respectively. -: Not applicable.

Multivariate logistic regression showed that, after adjusting for other independent variables, women were at lower risk for suffering violence as victims than males (adjusted odds ratio: 0.47, 95% CI: 0.33-0.67), and the youngest participants (≤ 25 years old) had higher incidence than the oldest ones (≥ 46 years old) (adjusted odds ratio: 2.76, 95% CI: 1.41-5.39). For violence perpetrated against others, females and younger age groups also demonstrated lower and higher incidence rates compared to males (adjusted odds ratio: 0.43, 95% CI: 0.28-0.66) and the oldest age group (≥ 46 years old) (adjusted odds ratio: 3.09, 95% CI: 1.38-6.93 for age group of ≤ 25 years old, and 2.05, 95% CI: 1.07-3.93 for age group of 26-35 years old) (Table 3). The fact that men have higher risk may be due to the circumstances under which they take drugs, which could include secretive settings with other men where they attempt to skirt economic restrictions to purchase illegal drugs. Innate evolution-driven genetic or hormonal characteristics may also partially explain high risks among male drug addicts compared to women. Biological explanations could also explain elevated risk among younger drug addicts.

This study highlights the importance and urgency of taking action to prevent interpersonal violence among individuals who have drug addictions in China. Further studies are needed to explore the unknown but modifiable factors that may lead to high interpersonal violence incidence rate among

individuals who abuse drugs, and especially among the high-risk younger and male drug addicts, and to determine and then implement evidence-based, economically and technically feasible solutions. Recommendations outlined in the World Health Organization's Global Status Report on Violence Prevention 2014 offer a set of programs that could be tailored to reduce interpersonal violence among individuals with drug addiction. They include: (1) scale up prevention programs that are based on empirical research evidence; (2) develop relevant laws to prevent violence to internationally recognized standards, and strictly enforce the laws; (3) ensure services to identify, refer, and protect victims are comprehensive and sensitive, informed by evidence, and widely available and accessible; and (4) ensure a high-quality data collection system exists to regularly monitor progress in preventing interpersonal violence among individuals who have drug addiction disorders^[10].

This study has two major limitations. First, the study surveyed individuals at just 2 of the 678 CDDCs in Hunan province, China and only 61% of participants agreed to participate since we strictly implemented informed consent processes to protect the vulnerable individuals we were surveying and to abide by international research ethics standards. Because non-participants were not willing to share why they chose not to participate in this study, we are unable to verify the sample we studied was entirely

Table 3. Associations between Interpersonal Violence Incidence and Socio-demographic Variables among Individuals in Compulsory Treatment Centers from Multivariate Logistic Regression

| Socio-demographic Variable | Suffering Violence (AOR, 95% CI) | Perpetrating Violence (AOR, 95% CI) |
|---|-------------------------------------|--|
| Urban (Ref. = rural) | 0.90 (0.68, 1.19) | 0.87 (0.63, 1.20) |
| Female (Ref. = male) | 0.47 (0.33, 0.67)** | 0.43 (0.28, 0.66)** |
| Age, years (Ref. ≥ 46) | | |
| ≤ 25 | 2.76 (1.41, 5.39)* | 3.09 (1.38, 6.93)* |
| 26-35 | 1.47 (0.87, 2.50) | 2.05 (1.07, 3.93)* |
| 36-45 | 1.23 (0.74, 2.05) | 1.34 (0.70, 2.55) |
| Education < 10 years (Ref. ≥ 10 years) | 1.14 (0.85, 1.53) | 0.96 (0.69, 1.33) |
| Marital status (Ref. = unmarried) | | |
| Married | 1.20 (0.85, 1.70) | 1.13 (0.77, 1.74) |
| Divorced or widowed | 0.20 (0.83, 1.75) | 1.38 (0.90, 2.11) |
| Employment (Ref. = unemployed or retired) | 0.91 (0.68, 1.21) | 0.84 (0.60, 1.16) |
| New drugs (Ref. = traditional drugs) | 0.95 (0.67, 1.35) | 1.10 (0.73, 1.67) |

Note. Interpersonal violence refers to interpersonal violence among individuals with drug addiction in the six months prior to the time they entered the compulsory drug detention centers. CI = confidence interval, AOR = adjusted odds ratio. * $P < 0.05$, ** $P < 0.01$.

representative of the population at the two CDDCs. It is also unclear the extent to which the findings might generalize to broader populations in other CDDCs in China. However, it seems likely that the actual incidence rate in our study underestimates rather than overestimates exposure to violence because anecdotal evidence suggests many individuals who declined to participate had a history of significant interpersonal violence. Second, we relied only on self-report to gather our data. This methodology was optimal for our study goals to collect sensitive data from a vulnerable population, but may also have resulted in underestimation of the severity of violence among the population.

No conflict of interest to declare.

HU Guo Qing conceptualized the paper and supervised this study. WU Xiao Lin, XIE Yi Yun, and NING Pei Shan contributed to the literature review, data collection, and drafted the manuscript. NING Pei Shan and DI Xiao Kang substantially contributed to data collection, statistical analysis, and critical review of paper. HU Guo Qing and David C. SCHWEBEL finalized the manuscript. All six authors contributed to and approved the final manuscript.

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