



The Impact of Bam Earthquake on Substance Users in the First 2 Weeks: A Rapid Assessment

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ABSTRACT *In the final days of the year 2003, an earthquake in the city of Bam, Iran, led to the death of some 35,000 of its inhabitants. The rate of opium abuse, which had been high among the male population in this city, caused problems after the earthquake. The aim of the following study was to examine the status of substance abusers during the first 2 weeks after the earthquake. The study was carried out in the city of Bam, one of its nearby villages and eight hospitals admitting earthquake victims. One hundred and sixty-three individuals were interviewed, including substance abusers, their family members, people living in Bam, service providers, and the authorities. During the first 2 weeks after the earthquake, about half of drug-dependent interviewees suffered from withdrawal symptoms. About half reported their problems to health care providers and asked for morphine or other analgesics. Around one third had used opium on the first day and two thirds in the course of the second day to the end of the second week after the earthquake. Although smoking had been the most common means of abuse before the earthquake, oral intake has become the most prevalent route after the disaster. Almost all obtained their opium from inhabitants of other cities as gifts. Members of rescue and health delivery systems had a lot of encounters with opium abusers, especially in the first 3 days after the earthquake, and had prescribed morphine and other analgesics. In societies with a considerable prevalence of substance abuse, this issue becomes a matter of utmost health care and social importance at times of disasters, and the necessary arrangements to deal with it should be present beforehand.*

KEYWORDS *Iran, Narcotic analgesics, Narcotics, Natural disasters, Substance abuse.*

INTRODUCTION

The Bam earthquake in Kerman Province of Iran occurred on December 26, 2003, at 5:26 AM, local time. The epicenter of the 6.5-magnitude earthquake was in the city of Bam. The number of victims is estimated to be around 35,000.

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More than 50,000 people were declared injured, and about 100,000 people became homeless.

The Kerman province is one of the biggest provinces in Iran, and it is located in the southeast of the country. The population of Bam district was about 227,110 in 2003.¹

Drug abuse has a long history in Iran. The poppy plant has grown in the area, and the pharmacological and psychotropic effects of opium have been known for several thousand years. Iran was one of the main opium producers in the 1920s, and Kerman province was one of the main areas of its production. Although royal orders of restriction of drug use are documented as far back as 400 years ago, the first legislation for banning drug abuse dates 90 years ago. Several consecutive legislations up to the present time have tried to restrict the production and use of drugs. Opium production has been eradicated in Iran, but even though opium use is illegal and opium users and addicts are considered criminals, there are still many traditional opium users in the country. Kerman is one of the areas where traditional drug use is most prevalent, but heroin use is less common, and injecting drug use is rare.^{2,3} Almost all the opium used in Kerman comes from Afghanistan, and Kerman is one of the main transit routes of opium to other areas of the country and to the countries in the west and Europe.

Few studies have specifically documented the situation of drug users immediately after a disaster,⁴⁻⁷ and in those study populations, drug abuse was not widespread. In Bam city, opium use among men is quite common, and it created problems after the earthquake. As drug abuse treatment facilities were destroyed and many therapists were killed, there was no specific facility available. Four days after the earthquake, the Ministry of Health asked researchers to rapidly explore the extent of drug use and the problems of drug users; design work for this study commenced the next day, and 10 days later fieldwork was initiated. Our objectives were to rapidly assess the situation of drug consumption among drug users, how the drugs were obtained, the extent of experienced withdrawal symptoms, and health sector response to these symptoms during the first 2 weeks after the earthquake.

METHOD

The study was carried out in the city of Bam, Baghchamak village (an earthquake stricken village 15 km from Bam), and in hospitals admitting earthquake victims in Kerman and Tehran. The study was carried out in residential regions and tent areas allocated for medical and health services in Bam, at five hospitals in Kerman, two hospitals keeping at least 50 earthquake victims, one convalescent home, and headquarters of offices responsible for drug abuse treatment in the Ministry of Health and the Welfare Organization all in Tehran.

The study sample was consisted of 163 people including 61 drug dependents (85.3% male; 14 in Bam city, 6 in Baghchamak, and 41 residents of Bam who were hospitalized in Kerman and Tehran), 30 nondrug users or family members of drug dependents residing in Bam, (66.7% male), 29 medical doctors, 33 nurses, and 6 relief and rescue workers (51.5% male; 31 in Bam and Baghchamak, and 37 in hospitals of other cities), and 4 people in charge of drug abuse treatment (two at headquarter level and two at provincial level). Some medical and relief personnel in Bam were freelance doctors and others came from different institutions and organizations including the Red Crescent, medical universities, the health care system in Kerman, the revolutionary guard, and the air force; most came from outside the province. The doctors included

general practitioners, general surgeons, internists, emergency specialists, orthopedic surgeons, and other specialists.

The samples were selected through peer referral and opportunistic methods. Because the purpose of this study was to rapidly assess the situation and the needs of drug dependents, random selection of samples was not considered; care was taken, however, so that different groups of addicts and care taker personnel could be used as representatives of each group. The study started 15 days after the earthquake, and the fieldwork continued for 2 weeks. Five medical doctors and psychologists who were experienced in the treatment of drug dependents and were from Kerman City and Tehran identified and questioned the subjects. Eight semistructured and open-ended questionnaires, one for each sample group, were designed by the research group. Questions included extent and pattern of drug use, change in the use pattern in the first day and the first 2 weeks after the earthquake and the factors that influenced it, source and availability of drugs, experience of withdrawal symptoms and the way drug users managed them, and medical prescription or self-prescription of analgesics and narcotics. There were also specific questions for drug users on their socio-demographic characteristics and losses and injuries because of the earthquake. The interviews were about 15–30 minutes on average.

The names of the addicts were not registered in the questionnaires for ethical reasons, and the subjects were interviewed after informed consent had been obtained. Considering the psychological state of the subjects, the number of questions was limited, and interviewers were forbidden from conducting long interviews.

The information obtained from the semistructured and open-ended questionnaires was extracted and analyzed manually by the authors. Key words and important concepts were identified through the review of completed questionnaires, and the report was categorized on the basis of these words and concepts. Next, the questionnaires were analyzed, and the results were interpreted quantitatively. Data related to participant characteristics and to the main study questions have been analyzed using the software SPSS-11.5.

RESULTS

Characteristics of Interviewed Drug Dependents

The 61 drug dependents interviewed in this study included 52 men and 9 women. Most were middle-aged; the youngest and the oldest drug dependents were 22 and 74 years old, respectively. Most held junior high school degrees and were employed and married. All interviewed drug dependents gave a history of drug abuse in the month before the earthquake. Almost all had been using opium one to several times per day. During a month previous to the earthquake, almost all of the interviewees had abused opium through smoking, one fourth had used it through the oral route, and some had been using both routes of administration. The use of alcohol, hashish, and codeine in the previous month were rare. None of the 61 drug dependents interviewed gave a history of intravenous abuse of drugs during the month before the earthquake.

All the interviewed drug dependents had sustained significant loss or injuries because of the earthquake. From among the 61 drug dependents, most had lost at least one family member (49), had been trapped beneath the rubble (51), and had sustained physical injury due to the earthquake (52). The homes of most (40) of the 61 interviewees were completely devastated, and some (19) mentioned relative damages to their places of residence.

Extent of Drug Use in Bam

All of the interviewed inhabitants of Bam and Baghchamak village stated that drug abuse had been very prevalent in Bam before the earthquake. Most (23) stated that between 25% and 50% of male adults in Bam use opium. Also, most believed that the rate of drug abuse in men was much higher than that of women and in people above 50. All believed that the main substance of abuse had been opium. Some also mentioned shireh* and heroin. The main route of opium use was stated to be through smoking, followed by oral consumption. Some mentioned the oral consumption of shireh and the intranasal and intravenous route of heroin use.

In response to questions asked from medical doctors, nurses, and care providers in the city of Bam and Baghchamak village, most (26) stated that they have had numerous encounters with drug dependents during care provision. Also, in response to questions asked from medical doctors and nurses who had taken care of the victims of Bam earthquake in hospitals cities Tehran and Kerman, some (10) mentioned a prevalence of 50 percent or more drug dependence in the patients, some (15) mentioned a prevalence of 25–49 percent, and some (12) a prevalence of less than 24 percent.

Situation of drug abuse one day after the earthquake

Opium Use From among the 61 drug dependents interviewed, about one third (18) had used drugs on the day after the earthquake, and the others denied using any drugs on that day. In all the cases the drug of abuse was said to be opium (or its shireh). In the interview with 21 people from the families of the interviewed drug dependents, all confirmed the pattern of abuse on the first day, mentioned by the patient. A 40-year-old drug-dependent man who was pulled out from under the rubble about an hour after the earthquake and was interviewed in a hospital in Tehran said, “During the first day after the earthquake, when I was in Bam, people were helping each other and were giving opium for free.”

Only three among the subjects had used opium by smoking; others had taken opium through the oral route. A 56-year-old drug-dependent male who had pulled out the dead bodies of his daughter, son-in-law, and grandson from under the rubble said, “I had some opium in my pocket; I was eating pieces of the opium as I was walking and removing the rubble.” A 31-year-old drug-dependent male, said, “I had started to abstain from opium some weeks before the earthquake, and had managed to decrease the quantity of the opium I smoked in the evenings from three pieces to one. When I was pulled out from under the rubble, people dissolved a piece of opium in water and gave it to me to drink.” A 37-year-old male who was admitted to a hospital in Kerman said, “I used to smoke opium, but I started eating it the day after the earthquake, since there was no time and the situation was critical.” From 18 people using drugs, 8 mentioned a decrease in the use of opium on the first day after the earthquake, and two mentioned an increase. A 57-year-old male who was interviewed in a hospital in Kerman said, “I got opium from a person who was from Balouchestan province (neighbor to Pakistan) and not from Bam. Even though he gave a large amount, I tried to use it no more than the amount I used before, or maybe I used it a little more.”

*The remnant of smoked opium that is dissolved in water and boiled is called shireh.

Use of Analgesic and Narcotic Drugs Some drug dependents (13) reported receiving analgesics or narcotics on the first day after the earthquake; almost all had been transferred to hospital due to physical injury.

Withdrawal Symptoms About half of the drug dependents (30) did not use either opium or any analgesics or narcotics on the first day. None experienced withdrawal symptoms save two who had mild symptoms. The reasons described for not experiencing symptoms were severity of physical pain—because of the injuries—and extreme psychological distress.

Situation of Drug Abuse During the Period Between the Second Day to the End of the Second Week After the Earthquake

Opium Use From 61 drug dependents that were interviewed, about two thirds (42) had used drugs during the period between the second day to the end of the second week after the earthquake. Except for one, all the 21 interviewees who were family members of the drug dependents confirmed the patterns of abuse described by the drug dependents. Opium and (rarely) its shireh were the drugs of use in all cases. Those who used shireh before the earthquake stated that the conditions were not suitable to obtaining shireh after the event. Whereas the predominant route of opium use before the earthquake had been through smoking, this pattern of use changed. A majority (40) cited the oral route, and one person both smoked and used the oral route. The reasons given for switching to the oral route were the lack of proper physical conditions and the unavailability of instruments used for smoking.

Among 42 who used drugs, most (28) mentioned a decrease in use during the first 2 weeks after the earthquake. The reason for not using, or a decrease in use, was mostly mentioned to be caused by the lack of access or decreased availability. Other reasons stated include not having the temptation, being preoccupied with the problems related to the earthquake, being busy providing help, and being unconscious. Two described an increase in the amount of drug abuse due to psychological distress and the sudden availability of large amounts of opium.

According to the person in charge of the Therapeutic Community in Kerman province, among the four persons who had been managed at that center and who had abstained from drugs for some months, one was killed, one had a relapse but managed to abstain again, and two were unharmed and did not use drugs during the 2 weeks after the earthquake. Those two also played an important role in providing help and rescuing victims, which they attributed to the major changes in their behavior resulted from receiving the trainings in the center.

All the 14 drug dependents who were interviewed in the city of Bam had continued using opium, which they had obtained either from beneath the rubble of their or their relatives' houses or as gifts, throughout the 2 weeks after the earthquake. From the 6 subjects interviewed in Baghchamak village, three had not been able to obtain opium in the first 2 weeks after the earthquake, and two had to purchase opium. From the medical doctors and nurses interviewed in the city of Bam, most mentioned drug dependents continuing drug use after the earthquake. A nurse said, "I was told that drug dependents were searching for drugs in the ruins." From 41 injured drug dependents who were interviewed in hospitals in Tehran and Kerman, during the 2 weeks after the earthquake, more than half (25) had used opium that had usually been provided freely by visitors. A 30-year-old male who

had been admitted to a hospital in Tehran said, "On the visiting days, people who were originally from Kerman came to me and asked if I wanted opium. Whenever I asked for opium, they would give me a piece." A 37-year-old male who was admitted to a hospital in Kerman stated the reason for the change in his amount of drug abuse: "I used smaller amounts in the hospital compared to the first day since the number of drug dependents had increased in the hospital, and the visitors could not manage to distribute enough." Most drug users and their families said that in the situation, opium distribution is the best intervention for drug dependents. Some others recommended methadone or replacement treatment.

Withdrawal Symptoms From 61 drug dependents that were interviewed, during this time period, about half (29) suffered from withdrawal symptoms from hours to days. About half of these reported their problems to health care providers and asked for morphine and other analgesics.

Use of Analgesic and Narcotic Drugs Nearly all (36) doctors and nurses at the two hospitals in Tehran and Kerman stated that the patients were soothed in the first few days of admission by morphine injection and to a lesser extent by the administration of methadone, pethidine, tramadol, and other analgesics for pain management. All respondents had come across some (between one and eight) drug dependents who had gained access to opium inside the hospital and had continued using it. The prescribed narcotics were usually discontinued in these circumstances. An orthopedic surgeon in a hospital in Tehran said, "Morphine was administered to them in the first two to three days. After their visitors started coming, suddenly most of them did not need morphine any more because opium was brought to them by their visitors; we would not mention anything as well."

From the 14 drug dependents who were interviewed in the city of Bam a few (4) had used analgesics and narcotics in addition to opium. A nurse in the city of Bam stated: "A drug dependent with a broken leg was begging for a morphine injection in a clinic." One other person said, "Two drug dependents were making trouble and demanding drugs." Some drug dependents asked for substitute drugs, and the elderly drug dependents were concerned that they might suffer a myocardial infarction. In Baghchamak village, among the three persons who had not been able to obtain opium, two used analgesics and narcotic drugs.

Approach of Medical Personnel No guideline or program was available for prevention and management of drug dependence in disasters. In the hospitals, about half of the medical personnel declared that they knew the patients were using opium, but they ignored it. One third reported that they advised the patients to avoid using opium. Most of the medical staff had negative attitudes toward involvement in treatment of opioid dependence. A doctor in Tehran stated: "Addicts are all liars. I'm not responsible for them. I allow them to continue whatever they did before." In Bam city, almost all medical and rescue personnel stated that they advised drug dependents to continue their use. A few advised them to abstain from drugs. Two nurses reported that they got opium from some drug users and distributed to others.

DISCUSSION AND CONCLUSION

Despite the legal prohibition of the sales, purchase, and use of opium in Iran, opium use is traditionally and culturally prevalent in some parts of the country. The drug

dependents in Bam, who are among the traditional users of opium, are usually married, middle-aged, and employed men. Many also sustained much damage because of the earthquake, like the other members of the society. Most have lost members of their family, had property destroyed, were buried under the rubble, or were injured.

The distribution of opium was impaired during the first days after the earthquake, but the demand for opium was present. Two thirds of the drug dependents gained access to opium and used it in the first 2 weeks. Helping the earthquake stricken was Iran's primary concern during the first weeks after the earthquake. People from every group and association sympathized with the earthquake victims. In cities where earthquake victims had been admitted to hospitals, people who were either opium users or knew about the frequency of opium use in Bam would come to hospitals and bring opium for the patients along with food, clothes, and money.

The medical personnel and care providers were apparently confused as to how to behave toward the drug dependents. On the one hand, the sale, purchase, use, and any kind of urging people to abuse drugs are considered to be a crime in Iran. On the other hand, the pitiful situation of the people of Bam, who had drug dependents among them, had stirred great sympathy. There was no particular guideline or manual available to the relief or health professions for such a situation, and most acted according to his or her own preference. Some thought of the connections between the care providers and the drug dependents as a favorable opportunity for persuading them to abstain from drugs. However, the drug dependents or their families showed no readiness to do so.

To date, there has been little research examining substance use after a disaster.⁴ The few studies that are available focus on general change of substance use after months following a disaster. Most findings suggest increased use, and some have found limited overall change.^{4-6,8} Deren et al.⁷ conducted a study immediately and within 2-3 months after September 11, 2001. They reported concerns of service providers and drug users about the impact of the disaster on drug availability and drug purity, increased demand for and use of drugs, as well as an apparent increase in requests for drug treatment. Our study showed a decrease in drug use, mostly due to decrease in availability during the first 2 weeks after the earthquake. Our study was unique in that it was conducted in a context of existing widespread drug use and because most drug users were directly affected by the earthquake. In this study, some instances were reported in which the subject had abstained or was abstaining from drugs but resumed using drugs after the earthquake. Similar findings have been reported in other studies as well.^{4,8} In societies where drug abuse is prevalent, this problem is among the most important social and health issues in disasters, and necessary arrangements should be present in advance.

The overall situation and living conditions of people are improving only slowly in the city of Bam. Six months after the earthquake, people were still living in the temporary camps and were extremely concerned about their future. These resource-poor conditions severely affect the accessibility of drugs and their price. Furthermore, psychological problems such as posttraumatic stress disorder (PTSD) are among the main risk factors that may lead to drug abuse. A change in the prevalence of drug abuse, especially in particular groups such as women and adolescents, is expected. Also, a shift to more dangerous drugs and routes of administration—to save the amount of abused drugs—is anticipated. Therefore, more medium-term and long-term studies are necessary to monitor the situation of drug use in these conditions.

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