

Review Article

Emerging Risks of New Types of Drug Addiction in Japan

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ABSTRACT

In Japan, illegal stimulant drugs are a major category of drugs currently being abused, and are the leading type of drugs for the number of individuals arrested for law violations and those admitted to psychiatric hospitals. Three major changes of Japan in drug abuse can be noted. First, addiction or abuse of organic solvents has been decreasing, while Cannabis abuse, as marijuana use, has been gradually increasing. Second, designer drugs, called “dangerous drugs”, have been prevailing rapidly since around 2011, posing a social issue. Third, addiction or abuse of anti-anxiety drugs and hypnotics has been increasing.

A total of 2,436 cases were investigated and sent to the public prosecutor’s office in Osaka Prefecture because of these stimulants; this number is far higher than the national average with the prefecture ranking first nationally. The project is primarily comprised of two programs: a drug-related crime control program and a healthy minor growth/school attendance route safety improvement program. Currently, the 4th Osaka

Drug Abuse “No! Never” Campaign, which started in 2014, is underway to resolve residual issues through three strategies: prevention of drug abuse through active social education, prevention of re-abuse of drugs, and intensification of control.

Furthermore, the Addiction Countermeasure Promotion Council was established, which involved members from the Mental Health and Welfare Center, probation offices/corrective facilities, self-help groups, medical facilities (hospitals, general practitioners), and family members of addicts. Therefore, this council’s members have initiated the “Osaka Addiction Center” in Osaka Prefecture to establish a sustainable network of support for addicts and to promote the addiction countermeasure network. This center will serve as a drug addiction treatment model and play a significant role in the care of drug abusers.

MeSh Headings/ Keywords: Dangerous drugs; Synthetic cannabinoids; Benzodiazepines; Methamphetamine; Marijuana; MDMA

Drug Abuse Trends in Japan

In Japan, the lifetime usage rate of illegal drugs is very low worldwide compared to other countries. In particular, the lifetime usage rate of cannabis is 1.2% in Japan, 42.1% in America, 30.2% in England, 25.6% in Germany. This rate of

stimulant drugs such as methamphetamine and amphetamine is 0.4% in Japan, 6.3% in America, 11.9% in England, 3.7% in Germany [1-3] (Table 1). The total number of cases arrested for law violations is 19453 in total. Breakdown is 15219 cases of stimulants, 3439 cases of cannabis, 86 cases including MDMA, 364 cases of cocaine, and 3 cases of heroin [1-8] (Table 2).

Table 1: Lifetime usage rate of illegal drugs Regarding stimulants, in the case of Japan and America, it showed the rate of stimulants. On the other hand, in the case of England and Germany, it showed the rate of amphetamine.

	Year of research	Survey Age	Stimulants (methamphetamine and amphetamine)	Cannabis	MDMA	Cocaine	Heroin
Japan	2011	15-64	0.4	1.2	0.1	0	0
America	2010	12-	7.8	42.1	6.3	14.9	1.6
England	2006	16-59	11.9	30.2	7.5	7.7	-
Germany	2009	18-64	3.7	25.6	2.4	3.3	-

Table 2: The total number of cases and people arrested for law violations in Japan.

		2012	2013	2014	2015	2016
Stimulants (methamphetamine)	cases	16.362	15.232	15.355	15.98	15.219
	person	11.577	10.909	10.958	11.022	10.457
Cannabis	cases	2.22	2.086	2.362	2.771	3.439
	person	1.603	1.555	1.761	2.101	2.536
MDMA	cases	1.62	216	129	109	86
	person	81	105	62	45	38
Cocaine	cases	148	97	144	230	364
	person	61	46	61	86	142
Heroin	cases	51	33	11	8	3
	person	30	20	5	3	0
Total	cases	19.116	18.191	18.378	19.463	19.453
	person	13.466	12.951	13.121	13.524	13.411

Illegal stimulant drugs are a major category of drugs currently being abused, and are the leading type of drugs for the number of individuals arrested for law violations and those admitted to psychiatry hospitals. Regarding the issue of drug addiction, we might say that Japan is now in its third period of stimulant abuse. Most of the components of stimulants, which are arrested with in Japan, are methamphetamine. However, youth preferences have varied over time, accompanied by gradual changes in the types of drugs being abused. Three major changes in drug abuse can be noted, as outlined below [9].

First, addiction or abuse of organic solvents (i.e., thinners) has been decreasing, while Cannabis abuse, as marijuana use, has been gradually increasing. Reasons for such a trend are (1) youth are now much less interested in thinners than before as they have experienced a “loss of popularity” due to the widespread view that the appearance of individuals affected by thinners is “unattractive” or “not smart” with knowledge about their adverse influence on the body, such as the teeth; and (2) marijuana use has become fashionable with less awareness of its risks as per the various influences of Western culture (e.g., movies and club drugs).

Second, designer drugs, called “dangerous drugs”, have been prevailing rapidly since around 2011, posing a social issue. “Dangerous drugs” is a collective term for synthetic drug abuse, a term that began to be used in July 2014 by the National Police Agency and Ministry of Health, Labor and Welfare in Japan. Abuse of dangerous drugs began to spread rapidly during the latter half of 2011, giving rise to serious social issues, such as (1) an increase in the number of urgent admissions to psychiatric hospitals (including admissions as legal measures) for abuse-related hallucinations/delusions, (2) an increase in the

number of patients carried by ambulance to critical care units for reasons such as consciousness disturbance and dyspnea, and (3) a sharp increase of traffic accidents. Many dangerous drugs are supplied as plant pieces, synthetic chemicals, chemical solutions, or crystals. They are sold in packs with colorful illustrations (about 10 cm in size) or plastic containers (filled with fluid or crystals). Initially, they were distributed at retail shops under names such as “lawful drugs,” “lawful herbs,” “aroma,” and “bath salts.” Because these drugs were beyond the control of the Narcotics Control Act and other laws, their users had no risk for immediate arrest by police. Because of this and the fashionable attractiveness of dangerous drugs stimulated their use spread rapidly, primarily among youth. Regarding the chemicals components of the dangerous drugs, it is known that the plant pieces contain substances resembling marijuana (synthetic cannabinoids), and the fluid and crystals are comprised of substances akin to stimulants (compounds of the cathinone family). Recently distributed dangerous drugs contain multiple substances primarily from these two families, which involve higher risks because of the unpredictable effects of abuse, increased marked neurotoxicity, and so on that cause diverse symptoms. In 2014, the number of deaths from “dangerous drugs” reported across Japan exceeded 100 cases, and the government introduced a package definition for the comprehensive control of multiple drugs, accompanied by an amendment to the Pharmaceutical Affairs Law. In October 2013, the narcotics control officers and some other officers were given the authority to make on-site inspections for designated drugs. In December 2013, the regulations banning the use and possession of specific drugs with penalties were made public (enforced on April 1, 2014), thus developing a system involving

more intense regulations. Statistically, dangerous drug abusers, compared to stimulant addicts, are younger in age and are more likely to be male. It is also estimated that dangerous drug users often use plant pieces with a similar shape (e.g., marijuana) concomitantly. Another striking characteristic is that the abuse of dangerous drugs was promoted by the ability to buy drugs via the Internet for those who experience difficulty with face-to-face personal communication (e.g., individuals who tend to reclusively stay at home).

Third, addiction or abuse of anti-anxiety drugs and hypnotics has been increasing. This is a problem that also requires psychiatrists to address seriously, including via self-reflection. Drugs that are usually abused are benzodiazepines, which were developed around 1950, and which have been used with the pharmacological expectation of hypnotic and anti-anxiety actions. This class of drug is safer than barbiturates. The profile of benzodiazepines resembles that of alcohol, as it is known to have cross-tolerance. Individuals taking benzodiazepines with alcohol can feel comfortably drunk in proportion to the volume of alcohol, although this sensation varies among individuals. Thus, drinkers can feel the effects of benzodiazepines. If they are taken orally, the blood drug level rises, and pharmacological activity is manifested almost surely, thus allowing abusers to feel its effects. This feeling is the cause of addiction and drugs that allow users to feel such effects are likely to be highly addictive. Because of this problem, and the additional problems related to possible addiction at the ordinary dose level and resistance, care is needed for the clinical use of this type of drug [10-14].

Risks of drug addiction

Drug addiction is widely known to cause various health injuries and social problems. In particular, People in Japan can take methamphetamine by inhaling or injecting the powder that has been dissolved in water. Short-Term Physical Effects of methamphetamine include increased wakefulness, faster breathing, rapid and/or irregular heartbeat, increased blood pressure and decreased appetite. Short-Term Physical Effects of methamphetamine include extreme happiness, mental alertness, hypersensitivity, paranoia and acute psychosis. Taking too much amount of methamphetamine causes stroke, heart attack, lethal arrhythmia and death. Long-term methamphetamine abuse has many other negative effect, including anxiety, paranoia, hallucinations and —sensations and chronic psychosis. People who use methamphetamine by injecting are at increased risk of being infected with the diseases such as HIV and hepatitis B and C.

Marijuana causes the altered senses of time, color, taste and cognitive function of memory, thinking by acting on many brain receptors. Dangerous drug induces a wide range of health damage such as paranoia, aggressive behavior to seizures and cardiac arrest. Cases of dangerous driving, traffic accidents by using the dangerous drug have increasingly attracted media attention.

In any drug addiction, social activities are often hindered by long-term use, such as the divorce, family relationship deterioration and the separation of jobs. Compared with healthy

adults, the rate of the suicide accomplishment and the suicide attempt is also high.

Drug Addiction Problems in Osaka

Osaka Prefecture has a population of 8,847,838 (as of May 1, 2015), making it the third largest Japanese prefecture. About 30% of its population lives in Osaka City. A total of 2,436 cases (deviation: 89.5) were investigated and sent to the public prosecutor's office in Osaka Prefecture because of stimulants; this number is far higher than the national average (355 cases) with the prefecture ranking first nationally. This is attributable not only to Osaka Prefecture's large population, but also to the widespread contamination of its drug-abusing tendency [1-5,15].

Regarding stimulants, the Nishinari Ward (Airin District) of Osaka City is notorious. The name "Airin (Loving Neighbors District)" began to be used around 1966 under an agreement between the local government and mass media. During the period of high economic growth in Japan, many day laborers lived in this district. In and around this district there were generally many criminal syndicate offices and large numbers of laborers without regular jobs and homes as well as homeless people; this created a poor environment for public peace and order. There were also many illegal stimulant dealers. Many abusers and addicts came to this district to buy stimulants, making use of the easy access to public transportation (including the West Japan Railway Company Kansai Line/Osaka Loop Line, and Nankai Railway). Under such circumstances, the "Nishinari (Airin District) Special Project" was started jointly by Osaka Prefecture, Osaka City, and Osaka Police Headquarters as a five-year plan of environmental cleanup and security improvement. The project is primarily comprised of two programs: a drug-related crime control program and a healthy minor growth/school attendance route safety improvement program. The former program consists of measures for securing the core for the drug control section and arranging materials/devices for drug control. The latter program consists of measures for promoting the healthy growth of minors, securing the safety of school attendance routes, and controlling illegal waste and street stalls. We, as clinical workers, have the impression that these actions are gradually exerting efficacy, as reflected by the increasing numbers of voices that state that illegal drug dealer numbers in Nishinari are decreasing, making the purchase of such drugs increasingly difficult.

However, as mentioned above, the characteristics of "dangerous drug" abusers differ from those of stimulant abusers. Previous multivariate analysis of Japan indicated dangerous drug abusers were drug-abusing patients were significantly younger, more men, had higher education and fewer relationships with antisocial groups compared with other drug abusers. Furthermore, these patients were classified as ICD-10 F1 sub-classification categories of 'Harmful use' and 'Psychotic disorders' than methamphetamine-abusing patients [10-11]. Young males dominate among dangerous drug users and they have diverse backgrounds. My view is that dangerous drug abusers can be divided into three groups. One group consists of individuals who switched from being stimulant users; this group

often has a history of arrest, tends to purchase dangerous drugs simultaneously with stimulants, and has often come to abuse dangerous drugs through frequent dealings with illegal dealers or others. The second group consists of individuals abusing club drugs (marijuana, MDMA, etc.). The districts where this group of abusers dominate seem to be around the American Village (Shinsaibashi), Namba, Umeda, and Juso where there are large numbers of clubs or similar facilities attracting many young people at night; this differs from the district in and around Nishinari, which is mentioned above. An analysis of the number of shops selling dangerous drugs revealed that the number of such shops rose sharply from 17 (end of March 2010) to 73 (end of March 2012), decreased to 33 at the end of March 2013, rose slightly to 37 at the end of March 2014, and eventually decreased to 0 at the end of March 2015. The beginning of this analysis covered the period in which there were relatively loose legal regulations and it demonstrates that the number of shops selling such drugs has decreased to almost zero. The last third group consists of abusers who have difficulty with face-to-face human communication, as mentioned above. This group of abusers who have difficulty building human relationships have a tendency toward depression, and often began using dangerous drugs for self-treatment; this eventually led to addiction due to the strongly addictive nature of these drugs. Previously, those wanting to purchase these drugs had to go outdoors and deal with illegal dealers. At present, however, about 20% of all dangerous drug purchases are made via the Internet. Thus, there has been a striking change in how dangerous drugs are purchased.

In Osaka Prefecture, the five-year Osaka Drug Abuse “No! Never” Campaign was created to manage the issue of drug addiction. This campaign was revised every fifth year, taking into account the changes in social circumstances. Currently, the 4th Osaka Drug Abuse “No! Never” Campaign, which started in 2014, is underway to resolve residual issues through three strategies: prevention of drug abuse through active social education, prevention of re-abuse of drugs, and intensification of control. The social educational measures for this purpose include education on the prevention of drug abuse to school children and students via “intensification of educational campaigns

to minors with or without job,” “educational campaigns to university students, occupational school students, and so on,” and “educational campaigns to homes, local communities, etc. through cooperation with private volunteers and others,” thus promoting more effective and extensive campaigns. To deal with abusers and addicts, multi-faceted measures have been undertaken in an intensive and extensive manner, including “enriched consultation systems at public health centers, general mental health centers, etc.,” “enriched consultation systems for family members of addicts,” “reinforcement of the consultation/treatment networks,” “improvement in the social activity restoration support systems for drug abusers,” and “coalition with drug addiction self-help groups.” The actions related to the network for abusers/addicts are now being further intensified and expanded this year, as will be described later. Regarding law enforcement countermeasures, those at the water’s edge are being taken intensively to suppress illegal importation, so that the organizations of illegal drug dealers serving as the source of these drugs can be thoroughly controlled and exterminated. These strategies have a certain effect that the total number of cases arrested for stimulant drugs use in the age group under 29 is on a decreasing trend since 1998. The education suggested that no new abusers have appeared in youth generation [1-5,15] (Table 3). Thus, the Osaka Prefectural Government is undertaking its best efforts, in cooperation with various related organizations, to control drug addiction.

Osaka Addiction Center

As described above, various organizations have been actively working to deal with the problem of drug abuse, and such actions have been beneficial in various areas. Nonetheless, drug-related issues are becoming more sophisticated and diverse each year. As revealed in the investigation of dangerous drugs after 2011, the distribution and abuse of dangerous drugs can continue via loopholes if control measures remain unchanged. Among the various countermeasures available to adopt, my impression as a person involved in treatment is that although each type of addiction (alcohol, drug, gambling, etc.) has a common aspect of chronic disease that requires appropriate treatment, addicts

Table 3: The total number of people arrested for law violations by age and the component ratio in Japan.

		1997	2009	2010	2011	2012	2013	2014	2015	2016
Number of people arrested		19.722	11.655	11.993	11.852	11.577	10.099	10.958	11.022	10.457
age	over 50	1.593	1.63	1.776	1.893	2.079	2.206	2.486	2.324	2.353
	Component ratio (%)	8.1	14	14.8	16	18	20.2	22.7	21.1	22.5
	40-49	2.8333	3.08	3.29	3.473	3.533	3.43	3.697	3.779	3.592
	Component ratio (%)	14.4	26.4	27.4	29.3	30.5	31.4	33.7	34.3	34.4
	30-39	5.362	4.308	4.324	4.115	3.884	3.619	3.301	3.383	3.089
	Component ratio (%)	27.2	37	36.1	34.7	33.5	33.2	30.1	30.7	29.5
	20-29	8.338	2.38	2.375	2.188	1.933	1.53	1.382	1.417	1.287
	Component ratio (%)	42.3	20.4	19.8	18.5	16.7	14	12.6	12.9	12.3
	under 20	1.596	257	228	183	148	124	92	119	136
	Component ratio (%)	8.1	2.2	1.9	1.5	1.3	1.1	0.8	1.1	1.3
	Middle School Students	43	6	7	4	3	1	2	1	7
	High School Students	219	25	30	25	22	14	11	14	18

have insufficient access to treatment, this may be related to their difficulty in accepting the disease, a lack of sufficient medical facilities capable of treatment, and the existence of few regional support systems for such treatment. Of course, regulation is indispensable when it comes to new abusers, but we must not forget the importance of avoiding re-abuse by individuals who have already stopped the addiction once. The percentage of individuals who have committed stimulant-related crimes was rising in the last decade and reached 65.1% in 2016 [1]. This is quite regrettable for those of us who provide treatment. While many organizations have made efforts in their own ways, it is problematic that these organizations have not taken steps beyond their own individual efforts. To resolve this problem by promoting addiction treatment and providing recovery support, in 2014, the Ministry of Health, Labor and Welfare commenced an addiction treatment core medical facility foundation and operation program. Within this program's framework, two national facilities for addiction treatment and five major addiction-treating medical facilities were established. The roles of these medical facilities include addiction-related expertise, consultation, and support; pilot coalitions/adjustments with related organizations and family members of addicts; accumulation of findings about addiction; and arrangement of recovery support systems. Because Osaka Prefecture is a district in which stimulant abuse prevails, as mentioned above, the Osaka Psychiatric Medical Center became one of the major addiction-treating medical facilities within this program's assignment framework.

The concrete duties of this center include the installation of the addiction consultation desk, opening and enrichment of the inpatient and outpatient programs for cognitive behavioral therapy for drug addiction (drug abuse prevention program), providing training to relevant facility/medical facility employees, coalition/adjustment with other facilities, and social education about drug addiction information.

This center began full-scale operation as a major treatment facility in October 2014. As of March 2015, 80 cases have

received consults, including 67 drug addiction cases, 8 alcohol addiction cases, and 5 gambling cases. The number of new admissions was 35 (14 stimulant cases, 6 organic solvent cases, 4 dangerous drug cases, and 3 prescription drug cases). The number of outpatients treated at this center under this program was about 180 (including 92 stimulant cases). In January 2015, the "Bochibochi" program for the prevention of stimulant abuse, based on the Serigaya Methamphetamine Relapse Prevention Program (SMARPP), began to be applied to outpatients, although this program had already been applied to inpatients for five years [16].

Furthermore, to promote this program's implementation, the Addiction Countermeasure Promotion Council was established, which involved members from the Mental Health and Welfare Center, probation offices/corrective facilities, self-help groups, medical facilities (hospitals, general practitioners), and family members of addicts. At present, this council is working to improve the countermeasures against addiction in Osaka Prefecture within the framework of the addiction treatment medical facility foundation and operation program (the program has a limited period of 3 years). Drug addiction countermeasures must be promoted after this program's completion. Therefore, this council's members have initiated the "Osaka Addiction Center" in Osaka Prefecture to establish a sustainable network of support for addicts and to promote the addiction countermeasure network (Figure 1). This center will operate through the mutual coalition of multiple organizations, with each member organization being aware of its role and taking actions so that seamless support to addicts can be provided through the united efforts of all members. It is my impression that drug addiction often exposes the weakness and ugliness of humanity. For this reason, individuals from various backgrounds should work together, rather than separately, toward the goals of "recovery from disease" and "recovery of humanity." The Osaka Addiction Center will serve as a drug addiction treatment model and play a significant role in the care of drug abusers.

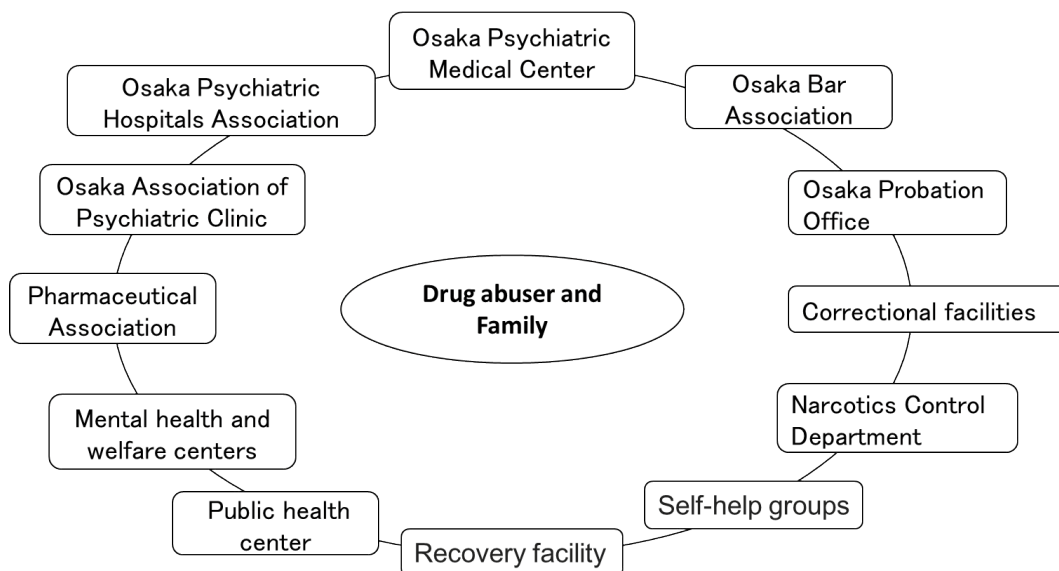


Figure 1: The outline drawing and member organizations of Osaka Addiction center.

Conclusion

In Japan, the lifetime usage rate of illegal drugs is very low worldwide, but recently new drug abuse became a big social problem due to the emergence of dangerous drugs. Dangerous drugs have high dependency on drugs, and the characteristics of abusers were also different from those of other drugs. Osaka Addiction Center was established as a new initiative in Osaka where there are many arrested cleared cases of arrested for law violations of illegal drugs in Japan against such situation of addiction. There were two limits in this report. The first point was that it was an effort in a limited area of Japan. Secondly, it was the fact that its effect could not be verified because It was a short period of time after its inception. We will verify the effect of such efforts in the future.

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