Age of Onset of Methamphetamine Consumption among the Iranian Youth Aged 19-29: A Cross-sectional Study

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Original Article

Abstract

Background: Around the world, one of the main concerns and risky behaviors among youths is methamphetamine consumption. Since the age of onset of methamphetamine use is decreasing, therefore, it is important to identify the effective factors on the age of onset of methamphetamine consumption. In the present study, factors affecting the age of onset of methamphetamine consumption was studied in Iranian youths aged 19-29 years.

Methods: In this cross-sectional nationwide study, individuals aged 19-29 years were selected through multistage cluster sampling and convenience sampling method from 13 provinces in Iran. People completed the questionnaire pertaining to knowledge, attitude, and history of methamphetamine consumption. In order to investigate the factors effective on the age of onset of methamphetamine consumption, we used the Weibull parametric model for data with doubly censored characteristic.

Findings: 3246 people participated in this study, half of whom were men and mostly single (60.4%), university student or graduate (50.2%), and unemployed (58.1%). Nearly 6% of participants have ever used methamphetamine. Mean and standard deviation (SD) of age of onset of methamphetamine use was 20.3 ± 3.3 years. Data analysis indicated that the variables of gender, marital status, education, knowing a methamphetamine consumer, knowing an ecstasy consumer, ecstasy consumption, illegitimate sex, attitude towards methamphetamine, and age group were the factors affecting the age of onset of methamphetamine consumption.

Conclusion: The results can contribute to the policy-makers to take the necessary interventions on the factors affecting the age of onset of methamphetamine consumption to reduce the methamphetamine consumption, especially in the critical young ages.

Keywords: Methamphetamine; Age of onset; Survival; Iran

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Introduction

Considering the increasing knowledge in regard to the harmful effects of narcotics, unfortunately, its use is increasing throughout the world.[1] Nowadays, using methamphetamine is particularly prominent among all other substances,[2] and its abuse is universally on the rise.[3] Methamphetamine belongs to the class of amphetamine-type stimulants (ATS), but has more effects on the central nervous system (CNS) than amphetamine.[4] Methamphetamine is a synthetic stimulant that is commonly abused in the United States (US). It has effects similar to cocaine and is highly-addictive, cheap, and available. Methamphetamine is often smoked but also has injection, edible, or rectal uses.[5] Methamphetamine was first synthesized in Japan in 1919, and was used extensively by the parties during the second world war to maintain consciousness of soldiers.[6] Since 1990, the drug became popular in the US and reached Europe through Czech Republic.[7] Its consumption leads to a feeling of euphoria and energy higher than the physical and mental capacity, and when its effect ends, it leads to a collapse in the individual's state.[8]

The consumption of amphetamine stimulants is recorded in 110 countries and their injection use in 60 countries. Based on estimations, more than 52 million people aged 15-64 years have at least once used amphetamine stimulant.[9,10] Among the amphetamine stimulants, methamphetamine is the most widely-used illegal stimulant in the US.[11] Cries, meth, speed, ice, crystal, and crank are the common names of methamphetamine among the consumers who use it in powder or smoking form.[12,13]

Complications of methamphetamine include mood disorders, psychotic symptoms and schizophrenia, depression, suicide, anxiety, paranoia, hallucination, violent behavior, cardiovascular and cardiomyopathy problems, teeth damage, and infectious disease risk.[11,14-17] Methamphetamine use also increases the risk of Parkinson's disease (PD).[18,19] Using this substance increases the risk of high-risk sexual behaviors and, consequently, the risk of acquired immune deficiency syndrome (AIDS) and violent behaviors.[10,20] In 2013, methamphetamine was mostly-used illegal narcotic substance after opium in Iran.[21] The prevalence of methamphetamine among Iranian youths aged 19-29 years was reported to be 7.1%.[22] A study conducted in Myanmar indicated that 73.0% of men and 60.5% of women started taking methamphetamine before 18.[23]

Investigations in Iran indicated that the age of methamphetamine consumption was lower compared to drug users.[24] The age of onset of methamphetamine consumption is highly correlated with more consumption of substances and their injection use.[25] Those with lower age of onset of methamphetamine consumption are more at risk of developing a psychotic disorder.[26] Probably, the consumption of methamphetamine at an earlier age is higher in those whose family members abuse the substances compared to others without these problems.[27] It was also reported in studies that methamphetamine use in young adolescents was significantly related to intake of other substances, sexual activity, friends and peers pressure, having a positive attitude to methamphetamine use, and lack of positive relationship with the family.[28] In a study conducted on American adolescents aged 12-17 years, the results indicate that women and adolescents who drink alcohol, deal drug, and have family problems use more methamphetamine.[29]

To date, attention was mostly paid to reducing the production of amphetamine stimulants, preventing the negative social and health consequences of drug addiction, and the treatment. All these studies are important, but without knowing the factors affecting the onset of drug they cannot significantly affect the reduction in demand and consumption of amphetamine stimulants. Also, the problem of abuse among teenagers and the youth is especially significant due to the sensitivity of this period of life and its role in the future life of the individuals. In Iran, few studies were conducted on the age of onset of consumption and related factors. Thus, this study was conducted to determine the age of onset of methamphetamine consumption and the effective factors on it among the Iranian youth aged 19-29. The findings of this study can help health care providers prevent and control this public health issue and greatly contribute to preventing increased consumption among this generation.

Methods

The survey was conducted in Iran between January

and March 2013. The data were obtained from a questionnaire which determined the level of knowledge, attitude, and performance of the youth aged 19-29 years with regard to amphetamine stimuli. The validity and reliability of the questionnaire were evaluated in previous studies.[30]

Sampling and collecting data: Participants in the study were selected through multistage cluster sampling and convenience sampling method. Based on this sampling method and considering the distribution of the population in 31 provinces, first the list of provinces was prepared and based on the literacy rate, they were divided into three clusters, namely, low, medium, and high. In the first phase, using multistage clustering method, 13 provinces were selected from the three clusters. In each province, the center of province and a suburban city and a number of villages were selected. In the cities, 5 districts (including north, south, west, east, and center) were considered and the querier distributed questionnaires to the youth aged 19-29 years by walking in crowded streets, parks, and public centers such as shopping malls and in villages in public places.

The dependent variable: In the questionnaire, people were asked if they have ever used (even once) methamphetamine stimulant, and if the answer was positive, what the age of onset was. People who stated in the questionnaire that they had consumed methamphetamine but did not know the exact age of onset were considered as a censor from the left and those who have not ever consumed methamphetamine were considered as a censor from right.

Independent variables: Independent variables included gender (male/female), marital status (single/married/widowed/divorced), status of education (primary or less/high school to diploma/university student or graduate), job status (employed/unemployed), human immunodeficiency virus (HIV) test (yes/no), knowing at least one methamphetamine consumer (yes/no), knowing at least one ecstasy user (yes/no), ecstasy consumption (yes/no), extramarital sex (yes/no), place of residence (urban/rural), awareness towards the methamphetamine stimulant (weak/medium/high), attitude toward the methamphetamine stimulant (positive/neutral/negative), and age group

(19-24/25-29).

First, the prevalence of consuming methamphetamine was reported separately for each level of independent variables and in order to investigate the relationship between independent variables and methamphetamine consumption, the chi-square test was used. The mean age of methamphetamine consumption in people who mentioned the age of onset of methamphetamine consumption was reported separately for each level of the independent variables. The independent t-test was used to investigate the relationship between the age of onset of methamphetamine consumption and the independent variables. In order to estimate the factors pertaining to the age of onset of methamphetamine consumption, the univariate Weibull model [assuming accelerated failure time (AFT)] was conducted for all independent variables. After fitting the univariate model, independent variables with P-value of less than 0.2 were selected as the important variables, then in the next step, the selected variables were entered into the multiple Weibull model. The final model was chosen by backward method that included variables which were significant at level of 0.05.

Descriptive results were analyzed by SPSS software (version 24, IBM Corporation, Armonk, NY, USA) and analytical results by SAS software (version 9.4, SAS Institute Inc., Cary, NC).

Ethical considerations: Initially, explanations were provided to people who were willing to participate in the survey about the procedure and the research objectives, and they were assured that all their responses would be confidential without mentioning their name, and the individuals completed the transcripts with verbal consent. The study has an ethical code number of IR.KMU.REC.1395.570 from Kerman University of Medical Sciences, Kerman, Iran.

Results

A number of 3246 Iranian youths aged 19-29 years participated in the study. About fifty percent of the participants in the study were men (n = 1632) (50.3%). Most were single people (n = 1959) (60.3%), university students or graduates (n = 1630) (50.2%), unemployed (n = 1886) (58.1%), and urban residents (n = 2337) (72.0%).

A total of 192 (5.9%) people said that they had

consumed methamphetamine at least once during their lives, of whom, 120 (62.5%) mentioned the exact age of consumption. Most people who said that they had consumed methamphetamine at least once during their life were men (n = 157) (81.8%), single (n = 124) (64.6%), with high school to diploma education (n = 80) (41.7%), and urban resident (n = 144) (72%).

In those who stated that they had consumed methamphetamine at least once and they had reported the exact consumption age, the mean age of onset of methamphetamine consumption was 20.34 ± 3.34 years, with the lowest age being 12 years and the highest age 29 years. The mean age of onset of methamphetamine consumption in those who mentioned the exact age of methamphetamine use was given separately by the independent variables in table 1.

Table 1. Prevalence of methamphetamine consumption and mean onset age of consumption according to studied variables in Iranian youths aged 19-29 years in 2013

Variables	n (%)	Methamphetamine use			Onset age of methamphetamine use[*]	
		Yes [n (%)]	No [n (%)]	P	Mean ± SD	P
Gender						
Female	1614 (49.7)	35 (18.2)	1579 (51.7)	< 0.0001	21.10 ± 3.40	0.8420
Male	1632 (50.3)	157 (81.8)	1475 (48.3)		20.20 ± 3.43	
Marital status						
Single	1959 (60.3)	124 (64.6)	1835 (60.1)	< 0.0001	19.74 ± 3.12	0.0200
Married	1233 (38.0)	53 (27.6)	1180 (38.6)		21.59 ± 3.61	
Widowed/divorced	54 (1.7)	15 (7.8)	39 (1.3)		21.60 ± 4.25	
Status of education						
University student or graduate	1630 (50.2)	58 (30.2)	1572 (51.5)	< 0.0001	19.75 ± 3.13	0.0030
High school to diploma	1189 (36.6)	80 (41.7)	1109 (36.3)		21.72 ± 3.71	
Primary or less	427 (13.2)	54 (28.1)	373 (12.2)		20.34 ± 3.43	
Job status						
Employed	1360 (41.9)	123 (64.1)	1237 (40.5)	< 0.0001	20.38 ± 3.78	0.8600
Unemployed	1886 (58.1)	69 (35.9)	1817 (59.5)		20.27 ± 2.66	
Age group (year)						
19-24	1735 (53.5)	88 (45.8)	1647 (53.9)	0.0290	19.00 ± 2.77	0.0140
25-29	1511 (46.5)	104 (54.2)	1407 (46.1)		21.44 ± 3.54	
Place of residence						
Rural	909 (28.0)	48 (25.0)	861 (28.2)	0.3390	20.15 ± 3.33	0.9450
Urban	2337 (72.0)	144 (75.0)	2193 (71.8)		20.40 ± 3.47	
Awareness towards the methamphetamine stimulant						
Low	1262 (38.9)	109 (56.8)	1153 (37.8)	< 0.0001	20.20 ± 3.63	0.7380
Moderate	928 (28.6)	40 (20.8)	888 (29.1)	< 0.0001	20.23 ± 3.15	
High	1056 (32.5)	43 (22.4)	1013 (33.2)		20.79 ± 3.25	
Attitude toward the methamphetamine stimulant						
Negative	2268 (69.9)	59 (30.7)	2209 (72.3)	< 0.0001	20.82 ± 3.26	0.2860
Neutral	878 (27.0)	96 (50.0)	782 (25.6)		20.41 ± 3.73	
Positive	100 (3.1)	37 (19.3)	63 (2.1)		19.44 ± 2.89	
Knowing at least one methamphetamine consumer						
No	2176 (67.0)	53 (27.6)	2123 (69.5)	< 0.0001	20.54 ± 3.74	0.8610
Yes	1070 (33.0)	139 (72.4)	931 (60.5)		20.29 ± 3.36	
Ecstasy consumption						
No	3078 (94.8)	128 (66.7)	2950 (96.6)	< 0.0001	20.55 ± 3.35	0.8130
Yes	168 (5.2)	64 (33.3)	104 (3.4)		19.17 ± 3.71	
Knowing at least one ecstasy user						
No	2891 (89.1)	115 (59.9)	2776 (90.9)	< 0.0001	21.00 ± 3.48	0.4580
Yes	388 (10.1)	77 (40.1)	278 (9.1)		19.45 ± 3.16	
Extramarital sex						
No	2570 (79.2)	51 (26.6)	2519 (82.5)	< 0.0001	21.61 ± 3.58	0.5480
Yes	676 (20.8)	141 (73.4)	535 (17.5)		20.04 ± 3.34	
HIV test						
No	2811 (86.6)	169 (88.0)	2642 (86.5)	0.5510	20.54 ± 3.43	0.5870
Yes	435 (13.4)	23 (12.0)	412 (13.5)		19.12 ± 3.24	

[*]Only those who have ever used methamphetamine and have reported exact age
HIV: Human immunodeficiency virus; SD: Standard deviation

Table 2. Effective variables on onset age of methamphetamine consumption in Iranian youths by using parametric Weibull model in 2013

Variables	Methamphetamine			P
	Crude AFT (95% CI)	P	Adjusted AFT (95% CI)	
Gender				
Female	1.48 (1.32-1.65)	< 0.0001	1.15 (1.06-1.25)	< 0.0001
Male	-	-	-	-
Marital status				
Single	-	-	-	-
Married	1.22 (1.13-1.32)	< 0.0001	1.06 (0.99-1.14)	0.0759
Widowed/divorced	0.66 (0.57-0.77)	< 0.0001	0.84 (0.76-0.94)	0.0026
Status of education				
University student or graduate	-	-	-	-
High school to diploma	0.93 (0.86-1.00)	0.0500	0.91 (0.85-0.97)	0.0040
Primary or less	0.79 (0.73-0.87)	< 0.0001	0.82 (0.76-0.89)	< 0.0001
Knowing at least one methamphetamine consumer				
No	-	-	-	-
Yes	0.64 (0.58-0.72)	< 0.0001	0.84 (0.78-0.90)	< 0.0001
Knowing at least one ecstasy user				
No	-	-	-	-
Yes	0.64 (0.50-0.70)	< 0.0001	0.91 (0.85-0.97)	< 0.0001
Ecstasy consumption				
No	-	-	-	--
Yes	0.55 (0.49-0.61)	< 0.0001	0.79 (0.73-0.85)	< 0.0001
Extramarital sex				
No	-	-	-	-
Yes	0.54 (0.48-0.61)	< 0.0001	0.76 (0.74-0.83)	< 0.0001
Attitude toward the methamphetamine stimulant				
Negative	-	-	-	-
Neutral	0.57 (0.50-0.65)	< 0.0001	0.84 (0.78-0.89)	< 0.0001
Positive	0.76 (0.70-0.82)	< 0.0001	0.79 (0.72-0.87)	< 0.0001
Age group (year)				
19-24	-	-	-	-
25-29	1.15 (1.08-1.23)	< 0.0001	1.15 (1.08-1.22)	< 0.0001

AFT: Accelerated failure time; CI: Confidence interval

As seen, the mean age of onset of methamphetamine consumption in terms of the variables of marital status, education, and age group was not the same and the age of onset of methamphetamine consumption in single subjects (vs, married and widowed/divorced), subjects with university education(vs ,high school to diploma and primary or less), and the age group of 19-24 years (vs, 25-29 years) was lower (P < 0.0005).

The results of the multiple model indicated that the median age of onset of methamphetamine consumption in women was 1.15 times higher than that of men. The median age of onset of methamphetamine consumption in the youth who were divorced or widowed was 0.84 times of that of the single people.

The median age of the onset of methamphetamine consumption in the youth with education less than university education (illiterate, elementary, high school, and diploma) was 0.82 and 0.91 times higher than those with

university education.

The median age of onset of methamphetamine consumption by the youth who were familiar with methamphetamine and ecstasy users was 0.91 times higher than those who did not know anyone from friends, relatives, and acquaintances consuming methamphetamine and ecstasy.

The median age of onset of methamphetamine consumption for the youth who consumed ecstasy was 0.79 times of that of the youth who did not use ecstasy.

People who had extramarital sex had a median age of onset of methamphetamine consumption 0.76 times higher than those who did not have extramarital sex. The youth with a positive attitude toward consuming methamphetamine had a median age of onset of methamphetamine consumption of 0.79 times of those who had a negative attitude. The median age of onset of methamphetamine consumption in the youth in the age group of 25-29 years was 1.15 times of that of the

youth in the age group of 19-24 years (Table 2).

Discussion

The findings of this study showed that specific socio-demographic features such as gender, marital status, education, knowing the methamphetamine stimulant consumer, knowing the ecstasy consumer, ecstasy consumption, attitude toward methamphetamine stimulant, and age group were significantly related to onset age of methamphetamine consumption in the youth aged 19-29 years in Iran.

Based on the results obtained of the model, the age of onset of methamphetamine consumption in women was more than men. In a study in Taiwan conducted to assess psychiatric disorders and gender disparities in people exposed to methamphetamine abuse, the mean age of onset of methamphetamine consumption was lower in women than men,[31] and a study in Thailand also indicated that the age of onset of methamphetamine consumption in women was lower.[32] Also in a review study aimed at investigating gender differences in the use of methamphetamine, it was indicated that women were more interested in using it at a lower age.[33] The results of these studies were inconsistent to those of the present study. Perhaps the special and traditional look in Iranian society (which considers women's addiction more negatively than men) as well as religious beliefs and social attitudes about the inadequacy of female addiction is a major obstacle.

In the present study, the age of onset of methamphetamine consumption in divorced or widowed individuals was lower than single people. A study by Bagheri et al. in Iran indicated that people who were divorced or widowed used methamphetamine more than others.[22] Also, in a study on methamphetamine abuse in Taiwan, divorced and widowed subjects accounted for approximately 80% of methamphetamine users.[31] The role of family and communication with family members as the main unit and an element that affects the relationships, behaviors, and inherent characteristics of members is clear and unmistakable. Undoubtedly, a significant number of people were hopeless about the future and felt anxious, missing, and sad after their divorce or death of their spouses. Divorce and separation as a social disadvantage has psychological effects on spouses, to the extent that a person may become more addicted due to the feeling of loneliness and the elimination of the spiritual problems arising from divorce. And since the age of divorce in most societies has decreased, the age of methamphetamine consumption has decreased as well.

In the present study, using more accurate analysis and considering censorship, it was observed that the youth with no university education had experienced methamphetamine consumption at a lower age. A study in Kermanshah Province, Iran, which was conducted to investigate the effect of social protection in predicting methamphetamine abuse, reported a result similar to our study.[34] A study conducted in Taiwan and another study in China were also consistent to the results pertaining to education in the present study,[31,35] indicating the effect of education variable on the methamphetamine consumption. It can be said that the employment of the youth is one of the most significant barriers to addiction. Undoubtedly, the youth who quit education or neglect their education are more likely to tend to use drugs and stimulants and commit delinquency than others.

This study found that those who knew a methamphetamine consumer among friends or acquaintances, also experienced methamphetamine at an early age. Similar results were obtained in a study conducted to assess the prevalence and predictors of stimulant and substance abuse among students of Hamedan universities, Iran.[36] In a study by Svingen et al., it was indicated that drug use in family members significantly reduced the age of onset of methamphetamine consumption.[27] The youth are affected by the thoughts and behaviors of their family and their peers, so the person who knows a methamphetamine consumer in his social network will have a higher risk of methamphetamine consumption. Therefore, the lack of use of substances in the family and stronger supervision of family on the friend-making of their children provides a healthier social network for them and can reduce the use of drugs and methamphetamine in individuals.

Moreover, in this study, the age of onset of methamphetamine consumption of people who had extramarital sex was lower than those who did not have an illegitimate relationship, which is

consistent with the results of studying high-risk sexual behaviors and the results of the qualitative study of sexual behaviors of methamphetamine users in Thailand.[37] It was also reported that taking methamphetamine was associated with an increase in unprotected sex and the risk of sexually-transmitted disease (STD) in this way, such as AIDS.[38,39] Since at the onset of methamphetamine consumption, the amount of sexual desire in the person increases and self-controlling decreases, thus it enhances the possibility of sexual relationships with several partners and develops the grounds of the related diseases. However, this increase in sexual desire occurs only at the first times of consumption, and later the person needs to consume more methamphetamine in order to have sex. This condition leads to addiction and a reduction of self-esteem and other secondary problems.[40,41]

Alike many other studies, this research faces some limitations. It can be said that the sampling is street-based and the results may not be generalized to the total population.

Conclusion

Amphetamine stimuli cause much psychological, physical, and social harm to the consumer and his/her relatives. Despite the increasing use of amphetamines in Iran, especially in the youth, few studies were conducted on the age of onset of consumption and related factors. Because of the specific physical and psychological characteristics of the young age, it is a significant and sensitive time period for the tendency to start drug abuse. Therefore, addressing the issue of the onset of abusing stimulants among the youth in Iran is one of the main points in health and hygiene issues, especially in the young generation of Iran; hence, the present study was conducted at the national level. Probably, by the proper planning and proper government intervention we can prevent using stimulants in the community, especially among the Iranian youth.

Conflict of Interests

The Authors have no conflict of interest.

Acknowledgements

References

1. Gruber SA, Silveri MM, Yurgelun-Todd DA. Neuropsychological consequences of opiate use. Neuropsychol Rev 2007; 17(3): 299-315.
2. Kalechstein AD, Newton TF, Green M. Methamphetamine dependence is associated with neurocognitive impairment in the initial phases of abstinence. J Neuropsychiatry Clin Neurosci 2003; 15(2): 215-20.
3. Meredith CW, Jaffe C, Ang-Lee K, Saxon AJ. Implications of chronic methamphetamine use: a literature review. Harv Rev Psychiatry 2005; 13(3): 141-54.
4. Yoshida T. Use and misuse of amphetamines: an international overview. In: Klee H, editor. Amphetamine misuse: International perspectives on current trends. Cardiff, UK: Harwood Academic Publishers; 1997. p. 1-16.
5. Winslow BT, Voorhees KI, Pehl KA. Methamphetamine abuse. Am Fam Physician 2007; 76(8): 1169-74.
6. Goodchild JH, Donaldson M. Methamphetamine abuse and dentistry: a review of the literature and presentation of a clinical case. Quintessence Int 2007; 38(7): 583-90.
7. Mariotti KC, Rossato LG, Froehlich PE, Limberger RP. Amphetamine-type medicines: A review of pharmacokinetics, pharmacodynamics, and toxicological aspects. Curr Clin Pharmacol 2013; 8(4): 350-7.
8. Klasser GD, Epstein J. Methamphetamine and its impact on dental care. J Can Dent Assoc 2005; 71(10): 759-62.
9. Radfar SR, Rawson RA. Current research on methamphetamine: epidemiology, medical and psychiatric effects, treatment, and harm reduction efforts. Addict Health 2014; 6(3-4): 146-54.
10. Degenhardt L, Mathers B, Guarinieri M, Panda S, Phillips B, Strathdee SA, et al. Meth/amphetamine use and associated HIV: Implications for global policy and public health. Int J Drug Policy 2010; 21(5): 347-58.
11. Yeo KK, Wijetunga M, Ito H, Efird JT, Tay K, Seto TB, et al. The association of methamphetamine use and cardiomyopathy in young patients. Am J Med 2007; 120(2): 165-71.
12. Vearrier D, Greenberg MI, Miller SN, Okaneku JT,

Haggerty DA. Methamphetamine: history, pathophysiology, adverse health effects, current trends, and hazards associated with the clandestine manufacture of methamphetamine. Dis Mon 2012; 58(2): 38-89.

13. Wu LT, Schlenger WE, Galvin DM. Concurrent use of methamphetamine, MDMA, LSD, ketamine, GHB, and flunitrazepam among American youths. Drug Alcohol Depend 2006; 84(1): 102-13.

14. Darke S, Kaye S, McKetin R, Duflou J. Major physical and psychological harms of methamphetamine use. Drug Alcohol Rev 2008; 27(3): 253-62.

15. Petit A, Karila L, Chalmin F, Lejoyeux M. Methamphetamine addiction: A review of the literature. J Addict Res Ther 2012; S1:006.

16. Mooney LJ, Glasner-Edwards S, Marinelli-Casey P, Hillhouse M, Ang A, Hunter J, et al. Health conditions in methamphetamine-dependent adults 3 years after treatment. J Addict Med 2009; 3(3): 155-63.

17. Callaghan RC, Cunningham JK, Allebeck P, Arenovich T, Sajeev G, Remington G, et al. Methamphetamine use and schizophrenia: A population-based cohort study in California. Am J Psychiatry 2012; 169(4): 389-96.

18. Callaghan RC, Cunningham JK, Sajeev G, Kish SJ. Incidence of Parkinson's disease among hospital patients with methamphetamine-use disorders. Mov Disord 2010; 25(14): 2333-9.

19. Callaghan RC, Cunningham JK, Sykes J, Kish SJ. Increased risk of Parkinson's disease in individuals hospitalized with conditions related to the use of methamphetamine or other amphetamine-type drugs. Drug Alcohol Depend 2012; 120(1-3): 35-40.

20. Sommers I, Baskin D. Methamphetamine use and violence. J Drug Issues 2006; 36(1): 77-96.

21. Nikfarjam A, Shokoohi M, Shahesmaeili A, Haghdoost AA, Baneshi MR, Haji-Maghsoudi S, et al. National population size estimation of illicit drug users through the network scale-up method in 2013 in Iran. Int J Drug Policy 2016; 31: 147-52.

22. Bagheri N, Mirzaee M, Jahani Y, Karamouzian M, Sharifi H. Correlates of methamphetamine use among young Iranians: Findings of a population-based survey in 2013. Am J Addict 2017; 26(7): 731-7.

23. Saw YM, Saw TN, Yasuoka J, Chan N, Kham NPE, Khine W, et al. Gender difference in early initiation of methamphetamine use among current methamphetamine users in Muse, Northern Shan State, Myanmar. Harm Reduct J 2017; 14(1): 21.

24. Noori R, Farhoudian A, Naranjiha H, Farhadi M H, Dolan K, et al. Comparison of characteristics of methamphetamine versus opiate users in Tehran, Iran. Int J High Risk Behav Addict 2016; 5(4): e28815.

25. Dickerson DL, Fisher DG, Reynolds GL, Baig S, Napper LE, Anglin MD. Substance use patterns among high-risk American Indians/Alaska Natives in Los Angeles County. Am J Addict 2012; 21(5): 445-52.

26. Hides L, Dawe S, McKetin R, Kavanagh DJ, Young RM, Teesson M, et al. Primary and substance-induced psychotic disorders in methamphetamine users. Psychiatry Res 2015; 226(1): 91-6.

27. Svingen L, Dykstra RE, Simpson JL, Jaffe AE, Bevins RA, Carlo G, et al. Associations between family history of substance use, childhood trauma, and age of first drug use in persons with methamphetamine dependence. J Addict Med 2016; 10(4): 269-73.

28. Sattah MV, Supawitkul S, Dondero TJ, Kilmarx PH, Young NL, Mastro TD, et al. Prevalence of and risk factors for methamphetamine use in northern Thai youth: results of an audio-computer-assisted self-interviewing survey with urine testing. Addiction 2002; 97(7): 801-8.

29. Herman-Stahl MA, Krebs CP, Kroutil LA, Heller DC. Risk and protective factors for nonmedical use of prescription stimulants and methamphetamine among adolescents. J Adolesc Health 2006; 39(3): 374-80.

30. Shokoohi M, Karamouzian M, Mirzazadeh A, Haghdoost A, Rafierad AA, Sedaghat A, et al. HIV knowledge, attitudes, and practices of young people in Iran: Findings of a national population-based survey in 2013. PLoS One 2016; 11(9): e0161849.

31. Lin SK, Ball D, Hsiao CC, Chiang YL, Ree SC, Chen CK. Psychiatric comorbidity and gender differences of persons incarcerated for methamphetamine abuse in Taiwan. Psychiatry Clin Neurosci 2004; 58(2): 206-12.

32. Rungnirundorn T, Verachai V, Gelernter J, Malison RT, Kalayasiri R. Sex Differences in methamphetamine use and dependence in a Thai treatment center. J Addict Med 2017; 11(1): 19-27.

33. Dluzen DE, Liu B. Gender differences in methamphetamine use and responses: A review. Gend Med 2008; 5(1): 24-35.

34. Farnia V, Alikhani M, Jalali A, Golshani S, Salemi S, Hookari S, et al. The role of attachment styles and perceived social support in prediction of methamphetamine abuse. J Subst Abuse 2018; 23(4): 377-83.

35. Dong H, Yang M, Liu L, Zhang C, Liu M, Shen Y, et al. Comparison of demographic characteristics and psychiatric comorbidity among methamphetamine-, heroin- and methamphetamine-heroin co- dependent males in Hunan, China. BMC Psychiatry 2017; 17(1): 183.

36. Barati M, Ahmadpanah M, Soltanian AR. Prevalence and factors associated with methamphetamine use among adult substance abusers. J Res Health Sci 2014; 14(3): 221-6.

37. Sherman SG, Gann D, German D, Sirirojn B, Thompson N, Aramrattana A, et al. A qualitative study of sexual behaviours among methamphetamine users in Chiang Mai, Thailand: a typology of risk. Drug Alcohol Rev 2008; 27(3): 263-9.

38. Molitor F, Truax SR, Ruiz JD, Sun RK. Association of methamphetamine use during sex with risky sexual behaviors and HIV infection among non-injection drug users. West J Med 1998; 168(2): 93-7.

39. Semple SJ, Patterson TL, Grant I. The context of sexual risk behavior among heterosexual methamphetamine users. Addict Behav 2004; 29(4): 807-10.

40. Yen CF. Relationship between methamphetamine use and risky sexual behavior in adolescents. Kaohsiung J Med Sci 2004; 20(4): 160-5.

41. Boostani D, Karamizadeh E. Conditions and strategies of crystal (Methamphetamine) consumption among addicted women (Case study: Kerman city). Woman in Development and Politics (Women's Research) 2017; 15(1): 1-20. [In Persian].

بررسی عوامل مؤثر بر سن اولین بار مصرف شیشه در جوانان ۱۹ تا ۲۹ ساله ایرانی

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مقاله پژوهشی

چکیده

مقدمه: مصرف شیشه یکی از معضلات و نگرانی‌های اساسی در بحث سلامت عمومی جهان به شمار می‌رود. از آنجا که سن اولین بار مصرف شیشه رو به کاهش می‌باشد، شناسایی عوامل مؤثر بر آن اهمیت فراوانی دارد. پژوهش حاضر با هدف بررسی عوامل مؤثر بر سن اولین بار مصرف شیشه در جوانان ۱۹ تا ۲۹ ساله ایرانی انجام شد.

روش‌ها: این مطالعه از نوع مقطعی بود و نمونه‌ها از بین جوانان ۱۹ تا ۲۹ ساله ۱۳ استان کشور ایران به روش نمونه‌گیری چند مرحله‌ای انتخاب شدند. شرکت‌کنندگان پرسش‌نامه مربوط به آگاهی، نگرش و سابقه مصرف شیشه را تکمیل نمودند. به منظور بررسی عوامل مؤثر بر سن اولین بار مصرف شیشه از مدل پارامتری Weibull برای داده‌های دارای ویژگی سانسور دو سویه استفاده گردید.

یافته‌ها: ۳۲۴۶ نفر وارد تحقیق شدند که نیمی از آن‌ها را مردان تشکیل دادند. اغلب افراد مجرد (۶۰/۴ درصد)، دانش‌آموخته دانشگاه یا دانشجو (۵۰/۲ درصد) و بیکار (۵۸/۱ درصد) بودند. متغیرهای جنسیت، وضعیت تأهل، تحصیلات، شناخت مصرف‌کننده شیشه، شناخت مصرف‌کننده اکستازی، مصرف اکستازی، رابطه جنسی نامشروع، نگرش نسبت به شیشه و گروه سنی، از جمله عوامل مؤثر بر سن اولین بار مصرف شیشه می‌باشد.

نتیجه‌گیری: مطالعه حاضر در سطح ملی انجام شد و نتایج به دست آمده می‌تواند به سیاست‌گذاران کمک نماید تا با انجام مداخلات لازم روی عوامل تأثیرگذار بر سن اولین بار مصرف شیشه، در جهت کاهش مصرف شیشه به خصوص در سنین حساس جوانی اقدام نمایند.

واژگان کلیدی: متآمفتامین، سن اولین بار مصرف، بقا، ایران

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