



Identifying the Factors Affecting Methamphetamine Use: A Scoping Review

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Abstract

Background: One of the critical factors affecting chronic diseases is the use of drugs, especially industrial substances, such as methamphetamine. Methamphetamine use is increasingly common among the younger members of society. Methamphetamine is not only physically and mentally destructive, but also has a significant impact on the families of abusers and society, and imposes a financial burden on society. The present study aims to identify the factors affecting methamphetamine use in a scoping review.

Methods: Different keywords of methamphetamine were selected in the Mesh database and were searched in valid English databases from January 1, 2008, to April 5, 2022. Inclusion and exclusion criteria in this study were languages, reported findings, time range, and type of article. This study was designed by scoping review method developed by Askey Malley⁷O.

Results: The total articles that were finally analyzed in this article were 42 including 12 English articles and 30 Persian articles. Among these articles, the most important factors affecting Methamphetamine are individual, social, and family factors, which have received the most cited.

Conclusion: The majority of research highlights the importance of individual factors, society, and family factors, respectively, while formulating policies for prevention, treatment, and rehabilitation must be considered. It is suggested that structural path analysis be determined by prioritizing the identified factors and the weights of these components

Keywords: Effective Factors; Methamphetamine Use; Individual Factors; Family Factors; Society Factors

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Introduction

Drugs and drug addiction are considered one of the main health problems in any country, which threaten human health and life (1). There are different categories of drugs (2, 3). Methamphetamine is the most important addictive substance that is abused in most countries; however, the extent and consequences of this abuse vary significantly depending on the time and place (4, 5). There are at least 1300

stimulants in the world (6), of which amphetamine compounds and coca products are the most widely abused, especially among young people, such as a combination of ecstasy and methamphetamine (5). Methamphetamine is a stimulant and addictive substance whose main ingredient is amphetamine (C₉H₁₃N). This substance strongly stimulates the dopamine system of the brain and immediately

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↑What is “already known” in this topic:

Various studies have investigated the factors affecting methamphetamine consumption in different age-gender groups, social classes, and patients and each of these studies points to a few factors.

→What this article adds:

Most of the factors affecting the consumption of methamphetamine are related to individual, family, and social factors. Mental disorders, domestic violence, and peer groups are the most important factors affecting methamphetamine consumption.

causes a state called rash or flash (state of maximum pleasure) (7).

Methamphetamine production is relatively simple and inexpensive and is produced in scattered secret laboratories. Substances on this small but widespread scale have been produced by industrial-scale criminal companies since the 1990s. Southeast Asia has emerged as a global hub for the production and trafficking of methamphetamine over the past decade, with 63% of global methamphetamine seizures currently occurring in the region. It is also estimated that more than half of the 15 to 16 million methamphetamine abusers live in Southeast and East Asia. Methamphetamine, because of its increasing use, will lead to human and financial losses and social consequences, such as economic costs, death, suicide, and unsuccessful marriages (8). It is also one of the most dangerous drugs due to its increasing prevalence, its association with risky behaviors of HIV, and other health risks as well as neurological problems such as memory impairment.

Given the fact that young people make up the majority of this substance's consumers and because of its severe negative effects on both physical and mental health, it weakens and disengages society's productive workforce. Failure to fight this great social problem will reduce the socioeconomic and cultural progress of society over time.

According to the rapid assessment of the situation in Iran, the prevalence of methamphetamine use is 5.2% of all drug users, and according to a scientific estimate using the network scale-up method (2013), amphetamine, ecstasy, and LSD abusers were estimated at 299 per 100,000 in Iran (9-11).

Numerous factors have been shown to influence the propensity to use methamphetamine, with studies reporting the various weights and roles of these factors. In the meantime, according to the results, individual and social factors played a more prominent role than other factors (12-14).

Even though numerous studies have been conducted to determine the factors that impact methamphetamine usage, none have yet been conducted in which all of the aforementioned substances are compiled and the results are presented as a coherent classification. Therefore, the present study was designed and conducted to investigate and categorize the factors affecting methamphetamine use using a model of social determinants of health with a scope review study. Scope review studies consider a wider range of contexts in which different designs are applicable and can be published without a critical appraisal by identifying research gaps (15, 16).

Methods

• Search Strategy

The following databases were used for the search: PubMed, Embase, Scopus, and Web of Science. This search was conducted from January 1, 2008, to April 5, 2022. To select keywords for the search, similar studies and keywords selected by the research team and words related to methamphetamine were used in the mesh database. These keywords were searched in the title, abstract, and keyword fields using advanced options and AND and OR operators. Keywords used for this purpose were as follows:

((methamphetamine) OR (deoxyephedrine) OR (Desoxyn) OR methamphetamine hydrochloride) OR (Madrine) OR (methylamphetamine) OR (n-methylamphetamine)) AND ("drug dependence" OR "substance use" OR "substance abuse" OR "drug consumption" OR "drug use" OR "drug abuse" OR "drug misuse").

Magiran and Sid databases were used to extract Persian articles. The keywords "drug use" and "methamphetamine" were searched in the title or summary of articles. This study is a phase I study titled 'Future Studies of Consumption of Substances Containing Methamphetamine' and methamphetamine was one of the main keywords used in reviewing studies.

The researcher conducted a first examination of the title and abstract of all retrieved documents after removing overlaps and investigating them. In the second stage, the available full text of the relevant articles remained from the first stage which reviewed by the researcher. The inclusion and exclusion criteria in this study are presented in Table 1.

• Data Extraction

After the final selection of articles, data were extracted from the full text of the articles. The data were divided into 2 separate sections. The first section of the bibliographic data of the articles included the article title, publication year, first author, and journal-title. In the second section, based on the research framework, related topics, which were mentioned in the results of the articles, were extracted. The bibliographic information of the articles is presented in Table 2.

Data Analysis Method

From 42 papers, factors influencing methamphetamine use were qualitatively extracted. Finally, major findings, including a review of important criteria and indicators, were collected and coded in the form of a table.

Table 1. Inclusion and Exclusion Criteria

Criteria	Included	Excluded
Language	Language: Articles published in English and Persian.	Articles published in languages other than Persian and English.
Time	Studies in the time range from 1-1-2008 to 5-4-2022 were accepted	Studies outside the specified time frame
Type of article:	Original article, review, letter, editorial, conference paper, communication	Online books
Content of article:	Articles whose findings were based on the purpose of the study (studies in which the factors and components affecting the use of methamphetamine were mentioned).	Studies that focus their effects on individual therapeutic and physiological aspects.

Table 2. Article Bibliography

Nu	Title	Author name	Year	Journal	Country	Method	Research community	Gender	Result
1	Methamphetamine use behaviors and gender differences (9)	Brecht ML1, O'Brien A, von Mayrhauser C, Anglin MD	2004	Addictive Behaviors	Los Angeles County	Cross-sectional	clients from a large publicly funded treatment system and examines	Male/female	numerous problems related to MA use are including paranoia, violent behavior, hallucinations, financial problems, and legal and work problems
2	Investigating the role of addiction in motorcycle accidents in Mashhad. Journal of Shahid Beheshti School of Nursing and Midwifery (18)	Araghi Ezat, Vahedian Mohammad	2007	Advances in Nursing and Midwifery	mashhad	descriptive research	Addicted motorcyclists who have been hospitalized due to an accident	Male	Improving knowledge, cultural beliefs, and safe alternative recreational activities, legislating strict laws and controlling borders are ways to restrict tendency to addiction and the resultant reduction of accidents.
3	Crystal methamphetamine use among young adults in the USA (36)	Bonita J Iritani , Denise Dion Hallfors, Daniel J Bauer	2007	Addiction	USA	Cross-sectional analyses	respondents aged 18–26 years	Male/female	Gender of residence and offspring have a significant relationship with substance use
4	Risk factors for methamphetamine use in youth: a systematic review (31)	Kelly Russell, Donna M Dryden, Yuanyuan Liang, Carol Friesen, Kathleen O'Gorman, Tamara Durec	2008	BMC Pediatrics	Iran	systematic review	40 electronic databases, websites	Scientific study	A history of engaging in a variety of high-risk behaviors, a history of a psychiatric disorder, and family environment were significantly associated with methamphetamine use.
5	Neurofeedback: A New Method for Improvement of Crystal Methamphetamine Dependent Patient (37)	Fatemeh Dehghani , Reza Rostami	2010	Research on Addiction	Iran	Cross-sectional	substance dependant patients undergoing a medicine treatment	Male/female	Accommodation, employment and peers are important factors in substance abuse
6	Mediators of the relationship between religiousness/spirituality and alcohol problems in an adult community sample (23)	Michelle L.Drerupa1Thomas J.JohnsonabStephenBindla	2011	Addictive Behaviors	India	Cross-sectional	Community-dwelling adults	Male/female	There is a direct relationship between substance use and religion
7	Effective Factors in the Change in the Drug Abuse Pattern among the Young from Traditional to Industrial (38)	Doagooyan Davood	2011	Danesh-e-Entezami	Iran	Cross-sectional	samples were randomly selected from among the experts and the addicts	Male/female	Age of onset of substance use and sexual arousal are factors in substance use
8	Prevention of methamphetamine psychedelics by adolescents (21)	kiani.M, shamloo.A, sadeghi.A	2012	Medical Law	Tehran	Field research	clients in the quarantine department of the Correctional Center	Male	Methamphetamine consumption is associated with mental disorders and family dispute

Table 2. Continued

Nu	Title	Author name	Year	Journal	Country	Method	Research community	Gender	Result
9	Prevalence and predictive factors of psychoactive and hallucinogenic substance abuse among college students (8)	Majid, Barati; Hamid, Allahverdipour; Farzad, Jalilian.	2012	Journal of Fundamentals of Mental Health	Hamadan	Cross-sectional	college students	Male/female	Factors affecting the use of psychedelics were residence status, having drug users and other substance use
10	Review of risk and protective factors of substance use and problem use in emerging adulthood (24)	Stone ALI, Becker LG, Huber AM, Catalano RF	2012	Addictive Behaviors	University of Washington	paper reviews	Adolescents and adults	Male/female	Substance use is related to race, gender, peer group, family, and socioeconomic factors
11	Tramadol Abuse Status and Related Factors among Three College Students in Hamadan (30)	Yadollah Fathi, Saeed Bashirian, Majid Barati, Seyyed Mohammad Mahdi Hazavei	2012	Avicenna J Clin Med	Hamadan	cross sectional descriptive study	400 college students of Hamadan	Male/female	Gender, educational status and residence of students have a significant relationship with substance use
12	The Study of the Role of Contributor Factors in Addiction Withdrawal (39)	Omar Kianipour, Akram Pouzad	2012	Research on Addiction	Kahnouj	study was ex-post facto and causal-comparative	sample was selected of addicts of Yaran addiction withdrawal Center	Male/female	Family history of addiction affects substance use
13	Executive Functions in Methamphetamine and Heroin Users versus Non-Users (7)	Salehi Mehrdad, Afshar Hamid, Moghtadaei Kamal, Taslimi, Mahshid, Salamat Mansoreh, Ebrahimi Asieh	2013	Journal of Isfahan Medical School	Isfahan	current study was Ex-post	patients were referred medical rehabilitation centers and psychiatric clinics	Male/female	Consumption of methamphetamine causes neurological and psychological disorders
14	Gender differences in socio-demographic and clinical characteristics of methamphetamine inpatients in a Chinese population (10)	He J, Xie Y, Tao J, Su H, Wu W, Zou S, Zhang J, Zhang J, Zhang H, Yang X, Guo J, Tang W, Zhang F, Liu J, Liu L, Chen Y, Wen N, Kosten TR, Zhang XY	2013	Drug and alcohol dependence	Han Chinese	Cross-sectional	among Han Chinese, which has previously received little systematic study	Male/female	Most MA abusers (about 72%) were young (in their 20s or 30s), with women being 5 years younger than men on average. More males (33.2%) were married than females (21.9%). The average body mass index (BMI) was significantly lower in this MA abuser sample compared to the age-matched healthy controls. Moreover, the BMI of females was significantly lower than that of males

Table 2. Continued

Nu	Title	Author name	Year	Journal	Country	Method	Research community	Gender	Result
15	The Relationship between Irrational Ambition and Tendency to Addiction (20)	Ali Entezari Razieh Saroogh Farahan	2013	Cultural Sociology Quarterly of the Institute of Humanities and Cultural Studies	Tehran	Survey method	Substance user	Male/female	Methamphetamine consumption and ambition are higher in men than women
16	Relationship between methamphetamine cravings and personality traits in methadone maintenance clients (40)	orki.M, mokri.A, ziabari.S.M k.	2013	Iranian Journal of Psychiatry and Clinical Psychology	National Center for Addiction Studies, Sun population,	Cross-sectional	methadone-treated clients from the National Center for Addiction Studies, Aftab Population	Male/female	Vulnerability and craving for drugs were seen in methamphetamine users
17	Crystal in Iran: methamphetamine or heroin crack (41)	Zahra Alam Mehrjerdi	2013	DARU Journal of Pharmaceutical Sciences.	Iran	To the Editor	General population	Male/female	The emergence of a new cultural anomaly of drug abuse, such as sweets of night parties, has led to an increase in industrial substances, including methamphetamine, among the young people
18	Investigating the status and trend of substance abuse and dependence in Iranian women (42)	Mahmoud Tavakoli, Leila Mohammadi, Mosayyeb Yarmohammadi, Ali Farhoudian, Firouzeh Ja'fari,	2014	Addiction Researches	Iran	descriptive study	women addicts who had referred to rehabilitation centers for treatment	Female	Gender and history of substance use are the factors that lead people to methamphetamine
19	The effectiveness of metacognitive therapy on tempting beliefs and substance-related beliefs in patients addicted to industrial substances (43)	Setorg.S, Kazemi.H, Raiesi.Z	2014	Addiction Research	Isfahan	Pseudo-experimental with pre-test-post-test	All people dependent on industrial materials who had referred to addiction treatment centers in Isfahan	Male/female	Beliefs related to substances, gender, and education were among the factors that led to substance abuse
20	Profile of substance use in addicted women (44)	Jafaezade.M, Noori.R, Ramezanzade.F	2015	eishabour Journal of Medical Sciences	Iran	Review article	All documents related to addiction in women	Female	Gender, education and socioeconomic status affect substance use
21	The Study of Drug Abuse Prevalence in Industrial Environments.	K Mohammadi, A Asgari	2015	Research on Addiction.	Isfahan	descriptive research	Research population included all staff in industrial environments	Male/female	Factors such as discrimination or low welfare, low wages, environmental factors such as insufficient attention in the workplace are associated with substance use.

Table 2. Continued

Nu	Title	Author name	Year	Journal	Country	Method	Research community	Gender	Result
22	Social, economic and population characteristics of substance dependents treated in North khorasan drug rehabilitation centers (45)	M Norouzi khalili, SK Hojjat, M Khajedaluae , MR Erfanian, A Akaberi	2015	Journal of North Khorasan University of Medical Sciences	Iran	Cross-sectional	Substance-dependent patients treated in methadone maintenance clinics.	Male/female	Demographic characteristics of people and history of substance use have a significant relationship with Methamphetamine consumption
23	Incidence of and risk factors for chronic opioid use among opioid-naive patients in the postoperative period (14)	Eric C. Sun, MD, PhD; Beth Darnall, PhD; Laurence C. Baker, PhD; Sean Mackey, MD, PhD	2016	JAMA Intern Med	[ICD9]*	Retrospective analysis	opioid-naive surgical patients	Male	Drug use is associated with depression
24	Registered Mortality in Kermanshah Legal Medicine Center Due to Taking Drug Abuse and Survey Demographics Variables and Doing Autopsy on their Bodys (26)	Arash Salari, Mostafa Alikhani, Alireza Alikhani 1, Ali Zakiei, Teymour Jamshidi, Vahid Farnia	2016	Iran Journal of Forensic Medicine	Kermanshah	descriptive-analytical method	Mortality due to substance abuse was performed in Kermanshah forensic medicine from 2012 to 2013.	Male/female	Gender, occupation, education and age group are related to substance use.
25	Personal and environmental factors affecting drug abuse tendency in addicts: a qualitative study (28)	Mansourian Morteza, Ebadi Fard Azar Farbod, Rastgari Mehr Babak, Solhi Mahnaz, Dehdari Tahereh, Taghdisi. et all	2016	Payesh	Ahvaz	Qualitative study	addicts in Ahvaz drop in centers	Male/female	Raising parents' awareness about drugs and drug use, monitoring children, especially adolescents, and social support for addicts can be helpful in controlling addiction and drug addiction.
26	Effective factors in youth drug abuse in Iran: Analysis of fuzzy cognitive maps based on expert opinion (27)	Javad Abdeli Soltan Ahmadi *, Javad Amani Saribagloo	2016	research on addiction	Urmia	Cross-sectional	physicians and psychologists working in Urmia medical and psychological treatment centers	Male/female	Addiction of family members, unemployment of deviant peers are factors affecting drug use
27	Addiction: A big challenge of social security in Iran (46)	Rouhullah Dehghani1 , Masoud Amiri2	2016	International Journal of Epidemiologic Research	Iran	Editorial article	General population	Male/female	Unemployment, poverty, discrimination and inequality, corruption, despair are the factors that lead to addiction.

Table 2. Continued

Nu	Title	Author name	Year	Journal	Country	Method	Research community	Gender	Result
28	A survey of causes of the drugs abuse tendency and psychoactive drugs from viewpoint of Lorestan University of Medical Sciences Students (19)	Kordestani, Davod and Farhadi, Ali and Soleimani, Friba	2017	Journal of Lorestan University of Medical Sciences	Lorestan	descriptive survey	the university students of medical university of Lorestan and its colleges between 2014 and 2015	Male/female	According to the findings among personal factors positive attitude toward drugs 23/3 depression 20/8 and not being able to intolerance of failure have the most possible mean and curiosity and aggression with 13/58 has the least possible mean among interpersonal and environmental factors related to family with the mean of 30/96 has the most possible mean
29	The Regional Planning Journal has accepted and implemented the terms and conditions of the following centers in the process of managing, judging and publishing scientific articles (22)	Akbarian Ronizi S.R., Sadeghi M.	2017	Journal of Regional Planning	rural areas of roniz district	descriptive-analytical method	study sample included heads of households who were drug addicts living in villages of the district	Male	Access to facilities and leisure is related to substance use
30	Factors Affecting in Addiction and Drug Abuse Through Proactive Approach With an Emphasis Community-based Approach (47)	Reza Ahadi , Shahram Mohammadi	2017	Social Health and Addiction	Iran	Qualitative study	General population	Male/female	Family, friends, school and religion are factors influencing addiction
31	Evaluation of neuropsychological functions in substance users according to the type of substance used, duration of use and education of individuals (48)	moghtadaie.K, nouroozi.E, shahidi.M	2017	Journal of Recent Advances in Behavioral Sciences	Iran	Cross-sectional	Substance user and non-user	Male/female	Social factors such as job, access to drug, and history of drug use are factors in the tendency to Methamphetamine

Table 2. Continued

Nu	Title	Author name	Year	Journal	Country	Method	Research community	Gender	Result
32	Volitional determinants of self-harm behaviour and suicidal risk in persons with borderline (34) personality disorder	S.Blaszczyk-SchiepaM.Ka-zenbP.Jaworska-An-dryszewskacJ.Kuhl	2018	European Journal of Psychiatry	Poland	Cross-sectional	patients with border-line personal-ity disorder	Male/fe-male	Social factors are factors affecting substance use
33	No evidence of sub-groups found in amphetamine consumers in Iran (49)	Atireza Bananej, Sabine Völkl-Kernstock, Otto Lesch, Henriette Walter & Katrin Skala	2018	neuropsychiatrie	Mashhad	Cross-sectional	204 consumers of methamphetamine only (n = 50) or both methamphet-amine and heroin	Male/fe-male	Anxiety Depression Age of onset of substance use is one of the factors that lead people to Methamphetamine
34	Surveg of Drug Use Patterns Patients Admitted in Shafa Psychiatric Hospital (50)	Shokrgozar S., Soleimani R., Raeis Abdollahi E., Amini H., Adineh S., Goli F.	2018	Journal Of Guilan University Of Medi-cal Sciences	Iran	descriptive com-parative retro-spective study	all psychiatric pa-tients admitted to Shafa hospital	Male/fe-male	Psychotic and mood disorders were the factors that led people to Metham-phetamine.
35	The Effectiveness of Mindfulness-Based Training on Self-Harmful Behaviors and Protective Factors of Substance Abuse in adolescent at juvenile correction and rehabilitation center (25)	Simin Hoseinien, Roghieh Nooripour , Nikzad Ghanbari, Saeed Hossenzadeh	2019	Quarterly Journal of Research on Addic-tion	Tehran	Semi-pilot	all adolescents aged 13-17 years old at juvenile correction and re-habilitation center in Tehran city	Male/fe-male	Factors such as family friends in the place of residence have a significant relationship with substance use.
36	The Relationship of Family Risk Factors and Protective factors with Drug Use among Adolescents (51)	Jamshidi A, Asadi M, Asadian S	2019	Journal of Research in Behavioural Sci-ences	Bushehr	Cross-sectional	General popula-tion	Male/fe-male	There is a positive and significant re-lationship between family conflicts, lack of supervision over children's behavior and parents' positive atti-tude towards substance use.

Table 2. Continued

Nu	Title	Author name	Year	Journal	Country	Method	Research community	Gender	Result
37	Socioeconomic Factors Affecting Adolescent and Youth Addiction to Synthetic Drugs (33)	Mohsen Khosravi , Bibiagdas Asghari, Maryam Eskafi	2020	J Research Health	Birjand	Cross-sectional	youths of drug addicts	Male/female	There is a significant relationship between education and age with substance use
38	Investigating the sequential patterns of methamphetamine use initiation in Iran (52)	Ebrahim Moghimi Sarani1, Jamshid Ahmadi , Bahare Oji , Motahareh Mahi-Birjand, Nader Bagheri	2020	Substance Abuse Treatment, Prevention, and Policy	Sharaz	Cross-sectional	patients who used MA admitted to hospitals and psychiatric centers	Male/female	Age of onset of use and type of consumables were effective in Methamphetamine consumption
39	Past-year methamphetamine use among US young adults: 2015-2018 (53)	Yockey RA, King KA, Vidourek RA	2020	Journal of Substance Use	USA	Cross-sectional	adults ages 18-34	Male/female	Factors such as gender, race, gender, place of residence and history of substance use are directly related to Methamphetamine consumption
40	Factors Related to Psychotropic Substances Use in Women Referring to Addiction Centers in Abadan and Ahvaz (54)	S.Rezagahi BD, K.Zarea , S.M.Latifi	2021	Nursing Journal of the vulnerable	Abadan-Ahvaz	Descriptive, analytical and Cross-sectional research	Women referring to addiction treatment centers in Abadan and Ahvaz and the addiction ward of Golestan Hospital in Ahvaz	Women	Lack of purpose in the life of academic failures, lack of love in family emotional relationships and divorce and separation of parents, abundance of drugs and availability in the environment were among the factors that led people to consume Methamphetamine.
41	Social factors of amphetamines use from the perspective of users: The qualitative arm of the ATTUNE research study in the Czech Republic (55)	Petruželka B, Barták B, Laštovková J	2021	Adiktologie	Czech Republic	Qualitative study	Adults	Male/female	Family and peer group were important factors in people's tendency to Methamphetamine

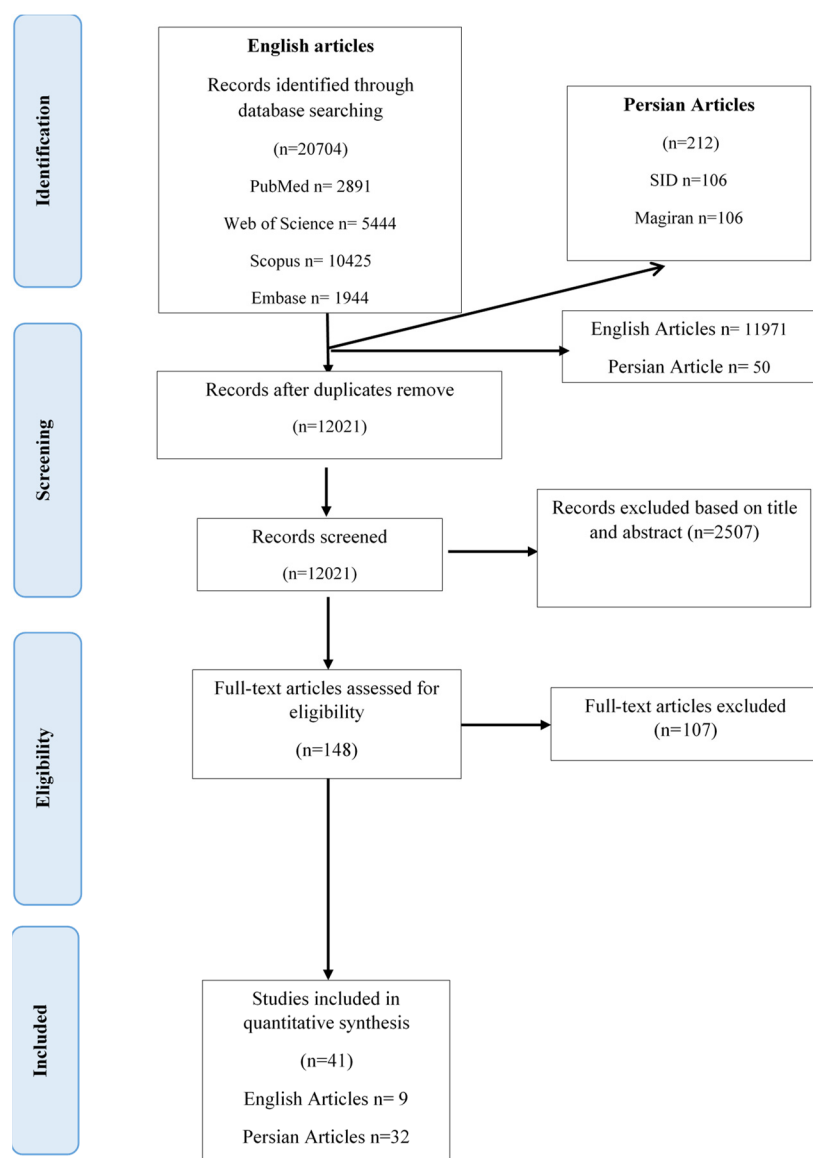


Figure 1. Process of study selection

In addition, after categorizing the content and deleting unnecessary items, the major and most significant findings were extracted and assessed. The number of articles retrieved in each step in different databases is given in Figure 1.

Results

A total of 41 studies were reviewed, of which 32 were published in Persian and 9 in English. Finally, based on the findings of the current study, all variables relating to the use of methamphetamine were divided into 3 primary theme categories: individual, family, and social factors, as well as 13 themes and 64 variables. The bibliographic characteristics of the articles are presented in Table 1.

Four major themes—physical, personality traits, psychological and emotional, and individual-social variables—were found to be related to the category of individual factors. Also, 25 factors were identified, among which 36 articles mentioned these themes. Mental disorders, curiosity, religion, a pattern of use, and a history of substance use

were among the factors that were cited by most articles. Moreover, factors such as low self-confidence, aggression, and lack of life skills were among the factors that were cited by fewer articles (Table 3).

Concerning the main theme of family factors, 3 themes of socioeconomic, emotional, and communication environment of the family and addiction in the family were identified. Also, 12 factors were identified, which were mentioned in a total of 10 articles. Domestic violence, family disputes, and parental divorce were among the factors cited by most articles. On the other hand, fewer articles referred to factors such as the emotional and communication environment of the family and high wealth and well-being (Table 4).

About the main themes of social factors, 6 themes of living environment and communication network, unsuitable environment, social factors, economic, political, managerial, and cultural factors were identified. Also, 27 factors were identified and were among the factors cited by most articles, which were mentioned in a total of 16 articles and

Table 3. Main theme of individual factors related to methamphetamine use

Main theme	Factor Code	Description	References
Physical dimension	Genetic factors	Genetic transmission of tolerance thresholds from parents to offspring through genetics	(14)
	Sex	According to some articles, methamphetamine use has been reported the same and even more often in women than men.	(10, 36, 42, 56, 57)
	Age	The age of onset of drug use, especially methamphetamine, has reached adolescence	(40, 57, 58)
	IQ	IQ can be one of the factors influencing people's tendency toward substances	(22)
	Weight loss Physical pain / Pain relief / Physical illness / Premature ejaculation / Incurable diseases	Some women use methamphetamine to lose weight. Reducing the pain caused by incurable diseases	(44) (20, 22)
Personality traits	Peace	Achieve peace and achieve a happier life	(44)
	Emotional Intelligence		(39)
	Ambition	There is a relationship between irrational ambition and addiction.	(20)
	Have a spirit of curiosity/ adventure	One of the important personality factors of addicted people is curiosity.	(20-22)
	Recreation / gaining pleasure / physical pleasure	The person has first used drugs for pleasure and entertainment.	(9, 10, 21, 38, 43)
	Low self-confidence	Low self-confidence has been identified as a personality factor among addicts.	(59)
	Introversion and extroversion	Introversion and extroversion have been identified as personality factors of addicts.	(22)
Psychological and emotional factors	Feeling lonely and isolated	Feeling lonely and isolated has been reported to be an important factor in substance abuse.	(43)
	Mental Disorders / Mental Problems / Psychological-Emotional Stress Mental Disorder	Psychological problems have been reported to be an important factor in substance abuse.	(9, 18, 19, 23, 24, 40, 49, 54, 58)
	Depression	Depression has been reported to be one of the major causes of substance abuse.	(22, 28, 49, 50)
	Violence Anxiety	Aggression is directly related to substance abuse. Anxiety has been diagnosed as one of the psychological problems of drug abusers.	(26) (39, 49, 60, 61)
	Love failure	Love failure has been identified as an individual factor in substance abuse in some drug abusers.	(22)
Individual-social factors	Religion	Having a deep religious connection is inversely related to addiction.	(26, 28, 43, 46)
	Education level	Drug abusers' education level is one of the factors in their tendency toward drugs. One study reported having a lower than a high-school education (middle school) as a factor leading to substance abuse.	(18, 25, 30, 34, 40, 47, 52, 54)
	Job	Job type and work environment are one of the factors leading to substance abuse.	(7, 40, 45, 48)
	Monthly income	High household income has been reported in some studies as a factor leading to methamphetamine use.	(33, 40, 45, 52, 53)
	Marital status of drug users in general	The marital status of drug users is one of the factors affecting drug use.	(45, 48, 61)
	Consumption pattern and history of substance use	History of substance use in the individual and his/her family is one of the important factors leading to drug abuse.	(21, 40, 42, 48, 60)

included the influence of friends and peers, school and academic failure and access to drugs, unemployment, poverty and inequality, and the emergence of new cultural anomalies associated with methamphetamine use at night parties. On the other hand, the existence of a criminal environment and place of residence, war, political climate, and inflation were among the factors cited by fewer studies (Table 5).

Discussion

Addiction is a multidimensional and multifactorial issue that has affected all societies today. By causing psychological and bodily trauma, this problem not only hurts the person but also their family. There is also a direct link between

drug abuse and cardiovascular, renal, and pulmonary diseases, as well as HIV and hepatitis. Methamphetamine use among young people around the world is increasingly shifting from traditional to industrial drugs. Adverse physical effects of this substance include cardiovascular system failure, pulmonary problems, imbalance, epilepsy, and coma. It is important to remember the risks of sexually transmitted diseases like AIDS and hepatitis as well as the loss of life, financial burdens, and other negative social and economic effects resulting from the abuse of this novel substance (17).

Considering the foregoing, society also suffers heavy losses due to methamphetamine use and the treatment and

Table 4. The results of the study related to the main theme of family factors affecting methamphetamine consumption

Main Theme	Codes of Factors	Description	References
Socio-economic	Parents' level of education	Parents' high level of education reduces the likelihood of addiction among their children.	(22)
	Low family income	Low family income can be one of the effective factors leading to addiction.	(22, 53)
	Great wealth and prosperity	High wealth and well-being can be one of the factors leading to addiction.	(22)
The emotional and communication environment of the family	Lack of parental supervision over the person	Lack of parental supervision is one of the important factors leading to addiction.	(22)
	Lack of emotional environment and family disintegration	Lack of family emotional environment can be one of the important indirect factors leading to addiction among children.	(55, 58)
	Lack of attachment to family/family belonging	Lack of attachment to family/family belonging can be one of the most important indirect factors leading to addiction among children.	(54, 58)
	The severity of family disputes	The severity of family disputes is one of the direct influencing factors leading to addiction among people.	(9, 55, 62)
	Type of domestic violence of drug abusers	Violence in the family of drug abusers, especially between parents, is one of the factors influencing drug abuse.	(21, 38)
	Parental divorce	Parental divorce is one of the factors that lead children to addiction.	(9, 22)
	Death of family members	The death of family members is one of the factors that indirectly lead people to addiction.	(43)
Addiction in the family	Addicted parents/family (father, mother, sister, or brother)	Family addiction is one of the direct factors influencing drug abuse.	(22, 52)
	Addicted spouse	An addicted spouse can be a direct factor influencing drug abuse.	(9, 28)

rehabilitation of addicts. Therefore, policymakers and planners can take effective steps by identifying the factors affecting drug abuse through preventive measures to reduce harm to society and improve the level of public health.

Some of the most important known themes among the main themes of individual, family, and society include psychological disorders, psychological-emotional stress, entertainment, curiosity, domestic violence of drug abusers, family disputes, parental divorce, the influence of friends and peers, access to drugs, unemployment, poverty, and lack of access to service and support systems.

Regarding the main theme of individual factors, psychological disorders are one of the most important themes mentioned in the present study and many articles have cited them as one of the most important factors affecting methamphetamine use by young people. Methamphetamine is one of the drugs that some people use to get relief from stress, boredom, and failure in the areas of education, business, and relationships. After consuming these drugs, the person feels indifference, carelessness, and immediate pleasure, and this is what leads the person to use drugs again (18, 19). Young people are more likely to turn to drugs because of their curiosity and their desire to take risks. Therefore, one of the important factors cited in the present study is curiosity (20-22).

The results of the present study also showed an effective relationship between religion and drug abuse. In this regard, Califano (2001), Smith (2001), Zohoor & Tavakoli (2002) and, many others have pointed to the inverse relationship between religion and the tendency to drug abuse (23, 24).

Aggression is one of the factors cited by many articles. Aggression is, directly and indirectly, related to drug abuse

among adolescents because aggressive adolescents are more neglected by their parents. Moreover, due to their low self-esteem, adolescents look for a group of peers and a place to find a new and approved identity, and this is the circle of bad friends (25, 26). Friend gatherings and parties are the best places to try new drugs like methamphetamine for curious teenagers.

Hamednia et al have identified family conflicts, parental supervision of children, and relationships with friends and peers as the most important factors influencing people's tendency to drug abuse. In the present study, a large number of articles have referred to domestic violence and family disputes and a small number of articles have referred to the emotional environment of the family. Thus, there is no sincere relationship between parents and family members in families where there are severe differences and tensions. Mink et al also stated that one of the factors that lead to drug abuse is the lack of attachment to parents. Insecure attachment causes depression and anxiety, which is also regarded as one of the most important factors influencing people's tendency to drugs in this study. In this situation, parents are not able to communicate properly with their children and do not have proper supervision of their children. Parental conflict creates an unsuitable and uneasy environment for children and leads to a higher tendency to find their friends and peers. They would also spend most of their free time with bad friends and have fun with them and enjoy themselves. They are impacted by these hobbies, which are frequently unhealthy and result in high-risk conduct, making them more inclined to consume drugs. Parents' divorce is one of the factors affecting children's substance use. This social problem reduces parents' support for

Table 5. Results of studies on the main theme of society affecting methamphetamine use

Main Theme	Code of Factors	Description	References
Living environment	Address	Place of residence indirectly can be one of the factors that lead people to addiction.	(36)
	School and academic failure	School and academic failure are among the factors that lead people to drugs.	(28, 47, 50)
Communication network	Friends and peers	One of the important factors that cause people to use methamphetamine is participating in a group of friends and peers.	(9, 21, 28, 37, 39, 42, 50)
	Access to drugs	Most of the literature reports simple and easy access to drugs as one of the important factors that lead people to addiction.	(32, 38, 43)
	Existence of a criminal environment	A criminal environment makes access to drugs easier and simpler.	(22)
Social factors	Population growth	Population growth can indirectly affect people's tendency towards addiction.	(22)
	The structure of society	The structure of society, especially now that we have a young structure, can indirectly affect people's tendency towards addiction.	(22)
	Migration	Migration can indirectly affect people's tendency towards addiction.	(43)
	Social injustice/discrimination	Social injustice is one of the factors that lead to addiction.	(22)
	Social gap / Social Conflicts and Contradictions	Social gap/ Social conflict is one of the factors that lead people to addiction.	(22)
Economic factors	The feeling of social disgust	Feelings of social disgust are one of the factors that lead people to addiction.	(28)
	Industrial Development	Industrial development is one of the factors that lead people to addiction.	(22)
	Lack of job opportunities	Lack of job opportunities causes unemployment and directly affects people's tendency to addiction.	(22)
	Unemployment	Unemployment is one of the important factors influencing people's inclination towards methamphetamine use.	(21, 22, 28, 37)
	Poverty and inequality	Poverty and inequality are among the socioeconomic factors that lead to addiction.	(36)
	Inflation	Inflation indirectly affects the tendency of people to become addicted.	(21)
Political and managerial factors	Recession	The economic crisis indirectly affects people's tendency towards addiction.	(21)
	Political and managerial factors	Appropriate information policies about the effects of addiction have an important role in primary prevention, so rapid educational programs and awareness through the media and cyberspace are important solutions to deal with this ominous phenomenon in society and to keep teenagers and young people from falling into the addiction.	(22)
	Preventive and disciplinary interventions and policies	Implementation of primary prevention programs in society is one of the factors reducing the tendency toward addiction. Also, close monitoring of law enforcement agencies on the sale and distribution of various drugs is a good deterrent to the spread of addiction in society.	(22)
Cultural factors	Support and counseling service systems	Support and counseling service systems play a very important role in returning healthy people to society before and after drug abuse.	(22)
	Reducing dependence and belonging to society and values:	Decreased dependence and attachment to society and values can indirectly affect people's tendency to addiction.	(38)
	The emergence of a new cultural anomaly of drug abuse, as sweets of night parties	The emergence of a new cultural anomaly of drug abuse, such as sweets of night parties, has led to an increase in industrial substances, including methamphetamine, among young people.	(41)
	Mass media and internet, satellite	Mass media and the Internet, and satellites indirectly affect the consumption of industrial substances such as methamphetamine.	(61)
	Medical rumors	Some people use methamphetamine to lose weight	(42)
	Advertising (considers drug abuse to be effective in relieving thoughts and reducing mental problems)	People use drugs, including industrial ones, to achieve peace of mind.	(21)
	Expansion of media in villages	The expansion of media in rural areas can be effective in preventing drug abuse	(37)

their children and increases the chances of the use of various substances among adolescents. On the other hand, drug addiction is more prevalent among young people belonging to single-parent families. Children, particularly girls, leave their homes and schools in this environment and are attracted to criminal gangs, and develop addictions. In the family main theme category, parents' addiction can also be one of the factors influencing drug use. Children raised

within a family system with addicted parents, choose them as their role models and play their role in society. The majority of young people who develop addiction are those whose parent(s) are addicts; as a result, parental drug use makes children curious, which is one of the factors influencing drug use and leads them to believe that addiction is a common practice and is a trait of adults who turned to drugs. On the other hand, addicted parents are less likely to

monitor and control their children, which increases the likelihood of child addiction. Unemployment is one of the significant topics addressed in the current study and supported by other studies when it comes to the primary category of society. This factor as a social phenomenon leads to other deviations, especially addiction. Unemployment leads to various perversions such as addiction, not only due to the failure to meet economic issues and ensure the material and spiritual well-being of family members but also by disrupting personality strength, moral stability, magnanimity, hope for the future, and individual authority. Teenagers spend most of their time in coffee shops and cafeterias, and these places are the best places for selling and consuming drugs (24, 27).

Both poverty and mental diseases like despair, hopelessness, and loss of confidence are consequences of unemployment, all of which by themselves have an impact on substance use. Unemployment is an underlying factor that can, along with other factors such as poverty, lead to addiction. Since financial difficulties force the poor individual to become addicted, the relationship between poverty and addiction is a 2-way street as well. On the other hand, the addicted person becomes weak loses the will to work and suffers from elevated poverty levels.

Another significant aspect that contributes to the propensity for drug usage is the formation of new cultural oddities connected to drug use, as well as hosting night parties. Communicating with friends and acquaintances at night parties, gaining pleasure, curiosity, depression, feelings of worthlessness, and mental disorders are among the important factors that lead people toward drug abuse.

Because young people and adolescents are now heavily influenced by cyberspace, political and managerial measures to inform them can be conducted through this medium. By creating educational content, young people can learn about the harmful consequences of methamphetamine usage. To stop the circulation of industrial narcotics such as methamphetamine, which has no odor and is portable, sanctions and legal action should be taken against those who use and distribute them. In this category, there is a significant relationship between place of residence and the tendency to use psychotropic substances and drugs. For example, students who lived outside their place of residence, such as in dormitories and rented houses, were more likely to become addicted. Also, in some neighborhoods, access to drugs is simple and easy, and it allows residents to access drugs without difficulty and under any circumstances.

Most addicts cited communicating with bad friends as the cause of their addiction. Adolescents are more affected by their peer group than ever before during adolescence. After family, friends are the second most fundamental factor that has the greatest impact on the formation of personality, as a person is considered a member of the group of friends when they accept their accepted values and norms and act according to them.

The school environment is also one of the important factors affecting adolescents' tendency to drug use (28, 29). As a result of the increased sense of belonging to the school, the likelihood of being addicted will decline. Students who feel like they belong at school refrain from risky behaviors

like using violence and binge drinking, and they also urge their peers to do the same. Being a part of a school community significantly lowers risk-taking and high-risk behaviors including fighting, bullying, vandalism, dropping out of school, and drug and alcohol misuse. In other words, when students are supported and respected by teachers and are praised for academic contributions, they show less tendency toward different types of drugs (30).

The results of a study showed a significant relationship between school culture components, including student relationships, student-teacher relationships, and educational opportunities with students' addiction tendencies. School culture—including beliefs, attitudes, and student-student behaviors—is effective in children's mental atmosphere, morals, and education. In other words, the better and higher the school culture, the lower the addiction tendency will be, and vice versa (30, 31).

In the present study, one of the important factors affecting substance use is access to substances. Mirshamshiri et al and Khosravi et al have mentioned the availability of drugs as one of the important factors that induce the tendency towards addiction. Human beings tend to use a substance that is easily available to them. The experiences of other countries, including the United States and Nepal, in the release of some drugs, have shown that the use of these drugs has not only not decreased but also increased at this time. Moreover, girls have sometimes engaged in prostitution to buy drugs in Nepal. The rate of drug intake will increase if medicines are more widely available and less easily obtained at a reduced cost and danger. Therefore, living in neighborhoods where access to drugs is easier is also known as one of the important social factors in the onset and persistence of drug addiction (32-34). According to previous studies, those from lower social classes, those with less education, the unemployed, those who live in slums or rented homes on the outskirts of cities, and those from these groups are more likely to engage in social deviations (35).

Strengths and Weaknesses

The present study had limitations such as time and language for search. Lack of access to the full text of some articles, and temporary lack of access to some databases were also limitations of this study. Due to the use of extensive keywords, a large number of documents were obtained, which can reduce the accuracy of information extraction. Since we had no age or gender restrictions, we included all types of demographics, and this can be a strength of the study. However, given the significance of the topic, in-depth research is needed, along with expert team collaboration across all databases.

Conclusion

The results of the present study showed that most studies cited individual factors, society, and family factors, respectively. This indicates the predominance of the individual approach used in studies of methamphetamine use and fewer studies have cited societal factors that indicate a research gap with social approaches and the need to expand this type of study in this field. Fewer studies also mentioned

the role of family factors; in this regard, more emphasis can be placed on empowering families in the proper way of communication between parents and children and creating a positive and lasting emotional bond between them as a protective factor.

In all of the individual factors, mental disorders, family disputes, addiction in parents, the influence of friends and peers, and access to drugs were important and influential factors that lead to methamphetamine use. To give adolescents a suitable place to spend their free time, it is advised that policymakers in this area concentrate more on counseling services programs tailored for these age groups in schools and offer adequate and affordable recreational services in homes. Effective steps can be taken to reduce the number of methamphetamine abusers by improving economic conditions and increasing social capital in the communication network of adolescents and young people simultaneously with the establishment of strict regulations to prevent easy access to this substance in living environments.

In the present study, a group of important factors was found in various fields, which indicates that decision-making and policy-making in this field are better based on attention to these factors in the form of a causal network and dynamic interaction between these factors.

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Authors' Contributions

Study concept and design: A. R., A. A.H., M.R. B., and M.H. M.; Search databases and extract content: A. R. A. R., A. A.H. Administrative, technical, and material support: All Authors. critical revision of the manuscript for important intellectual content: A. R. and M.H.M.

Ethical Considerations

This study was supported by the Institute for Futures Studies in Health (Kerman University of Medical Sciences), with an approved Ethical code: IR.KMU.REC.1397.003.

Conflict of Interests

The authors declare that they have no competing interests.

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