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Common Types and Methods of Drug Usage In Iran: A Systematic Review and Meta-Analysis

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Abstract

Introduction: Drug usage is a prevalent social and health problem in most countries. The highest prevalence of drug abuse has been reported among people aged 30-40 years old. The purpose of this study was to determination of the types of drugs and the methods of drug usage in Iran in a systematic and meta-analysis study.

Methods: This study was performed based on the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. Databases ofSID, Iran Doc, ISI, Cochrane library, Science direct, PubMed/Medline, and Scopus were independently searched by two researchers using MeSH keywords. Articles published between 2004 and 2018 were recruited.Data was analyzed using random effectsmodel using STATA-SE12 software. Heterogeneity among studies was investigated using, T^2 and I^2statistical indices.

Results: Initial search retrieved 90 articles from which 7 articles with desirable quality were finally analyzed. Opium was the most common in used narcotic50 %(95% CI: 35-66%) followed by opium extract44%(95% CI: 5-83%), and heroin 19%(95% CI: 12-26%). Using more than one narcotic was observed in 9% (95% CI: 4-15%). The inhalation was the most common method of usage72 %(95% CI: 61-83%) followed by oral consumption 32%(95% CI: 9-54%) and injection 14%(95% CI: 05-24%).

Conclusion: Drug abuseis a common phenomenon in Iran. It is amenable to reduce the tendency to using drugs by providing appropriate training, informing the risks of drug abuse, and identifying and educating high-risk groups.

Keywords*: Drug usage, Meta-analysis, Iran*

Introduction

Iranian scientists, have been aware of the beneficial and detrimental impacts of opium and had used it as an antidote [1, 2].Besides other major crises including nuclear threats, environmental pollution and poverty, drug addiction has turned intoan acute problem of the today's world. Addiction to drugs has also boosted in Iran in recent years.Theprimary official statistics have estimatedthat around 2 million drug addicts and abusers are present in the country [3,4]. In addition to the direct economic burden, serious healththreats such as respiratory illnesses, AIDS, hepatitis, tuberculosis etc., as well as numerous socio-economic complications

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and problems such as increased drug-related crimes shrinkage the country's large material capital [5-6].

This is while most professionals specify that familial support, as well as social support can be key contributors to increase the effectiveness of pharmaceutical treatment. In fact, social support can boost the therapeutic efficiency of pharmaceutical treatment through him parting information related to addicts' health, encouraging healthy behaviors and preventing risky health attitudes, as well as providing access to psychological facilities to augment social capital and social support [7, 8].

Previous studies have reported the rates of drug usage recurrence as50% to 80% in the first year after quitting [10, 9]. Therefore, it is very important to identify the factors responsible for reusing drugs to prevent this phenomenonbyimplementingappropriatecontrolling policies and measures. [11-12]. The chemicals in the drug have different effects[35]. Therefore, the purpose of this study was to determine the types of drugs and the methods of drug usage in Iran.

Method

This was a systematic review and meta-analysis. The data of this reviewwasacquired from studies conducted around the world. Articles published in SID, Iran doc, Science direct, PubMed/Medline, Scopus, ISI, and Cochrane library within 2004-2018 were recruited. MeSH keywords encompassing the type of drugs and the methods of drug usage in Iran were applied.

Selection of studies and data extraction: All the articles related to drug usage in Iran were collected. A checklist of abstracts of the found articles was initially prepared. Then all articles thatmentionedthe type of drug and the method of usage in their titles were recorded in thechecklist. Studies mentioning merely suggestions or recommendations on drug usage were excluded.

Next, the required information from each study including author's name, article title, year and location of study, sample size, number of women and men, the type of substance, and age groups were recorded into asecondary checklist.

Statistical analysis: Given that the types of narcotics and sample sizes had been extracted from each study, binomial distribution was used to calculate the variance of each study. Weighted mean was used to combine the frequenciesreported indifferent studies.Each study was inversely weighted according to its variance. Due to the great heterogeneity in frequenciesreported by different studies and statistically significant heterogeneity index (I^2), the random effects model was used to conduct meta-analysis. The rate of heterogeneity in this study was 94.5% fallinginto thecategory of studies with high heterogeneity (i.e. I^2indices< 25%, 25-75%, and >75% represent low, moderate, and high heterogeneities respectively)[13-14]. Meta-regression was used to evaluate the trend of drug abuse in Iran in terms of theyear of study and sample size. Meta-regression was also used to investigate the cause of heterogeneity between results. Subgroup analysis was performed to investigate the rate of drug abuse in Iran based on contributing factors and age groups. The data was analyzed using STATA software (version 12).

Results

The initial search yielded 90 articles related to the topic. Two independent researchers reviewed the titles and abstracts. If the title or abstract was relevant, the related full textwas prepared for further reviewing. During screening, 25 duplicated and 25 irrelevant articles were excluded. Also, 33 studies were omitted becauseofproviding insufficient information. Finally, 7 articles withadequate quality entered the systematic review process .

The rate of heterogeneity in this study was 94.5% representing a high heterogeneity (I^2indices of< 25%, 25-75%, and >75% indicate low, moderate, and high heterogeneities respectively) [13-14]. The total sample size was 6375 rendering the average sample size of 911 per study.Table 1 shows the characteristics of each included study.

The Forest plot of opium consumption frequency showing the rate of 50% (95% CI: 35-66%). The Forest plot of the frequency of opium extract consumption representing the prevalence of 44% (95% CI: 05-83). The Forest plot of the frequency of heroin us age representing the prevalence of 19% (95% CI: 12-26%). The Forest plot of the frequency of using more than one narcotic. The overall frequency was obtained as 9% (95% CI: 4-15%). The Forest plotof inhalation method of drug consumption representing the frequency of 72% (95% CI: 61-83%). The Forest plot of oral consumption of narcotics representing the prevalence of 32% (95% CI: 9-54%). The Forest plot of the rate of drug injection showing the overall prevalence of 14% (95% CI: 05-24). (Table 2)

Table 1: The characteristics of the article

References	Author	Year	Place	Total(n)	Age
15	Sadegheh	2004	Ardabil	70	36
16	Feyzi	2015	Kermansh	768	-
17	Aghakhan	2017	Uromieh	400	-
18	Naghizad	2013	Isfahan	3185	30.8
19	Ghuchani	2009	Khorasan	387	32.84
20	Hatamkhani	2018	Uromieh	812	36.6
21	Moshki	2015	Ghochan	753	36

The meta-regression analysis of drug usage based on sample size and the year of study publication indicated that the rate of drug consumption decreased in more recent studies and increased in studies with larger sample sizes (Figure 3, P<0.001).The mean age of drug users was 34.5 (95% CI: -25-44) years old.

Table 2. Frequency of types of drugs and their use

Subgroup	Articles(N)	%	CI/95	I^2	P Value
opium	7	50	35-66	97.8	0.000
opium extract	4	44	05-83	99	0.000
heroin	5	19	12-26	98.4	0.000
more than one narcotic	3	9	4-15	97.9	0.000
inhalation method of drug	3	72	61-83	43.5	0.170
oral consumption	3	32	9-54	96.1	0.001
drug injection	3	14	05-24	95.5	0.000

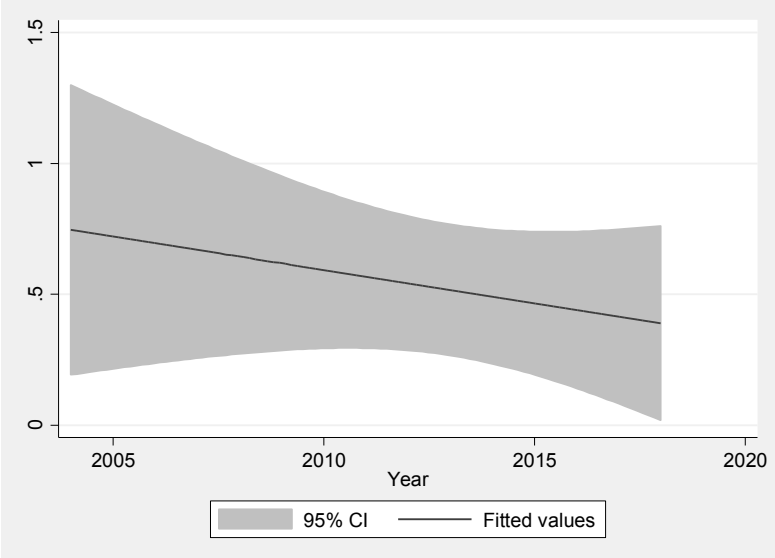

Figure1 a. Meta-regression analysis of drug abuse based on the year of study conduction

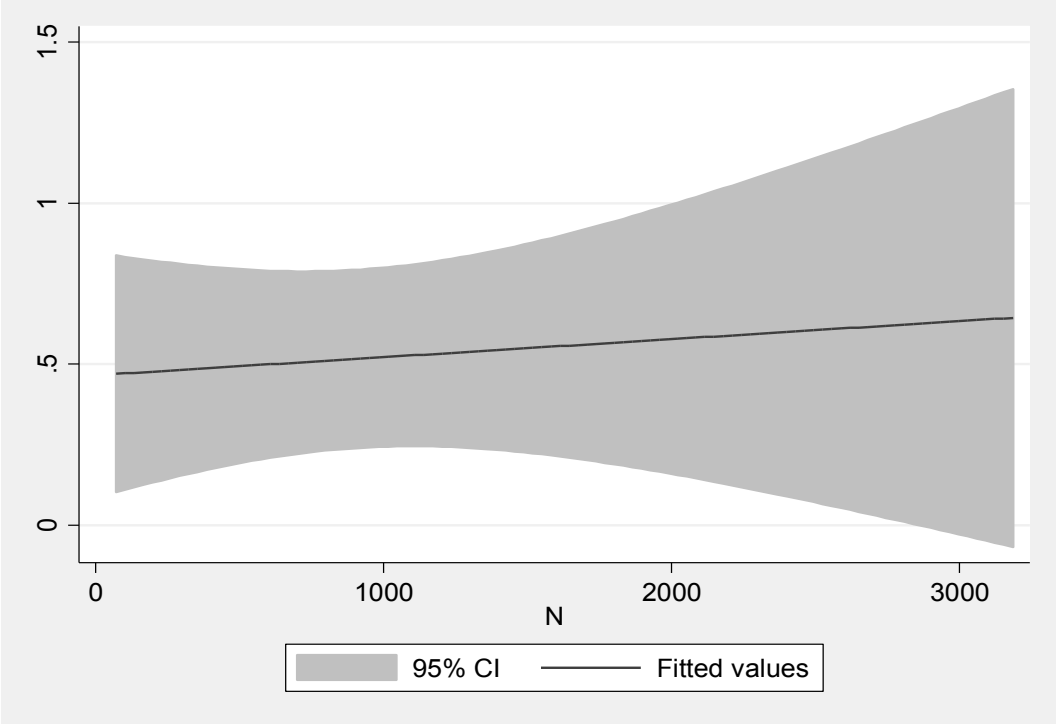

Figure 1b. Meta-regression analysis of drug abuse in terms of sample size

Discussion

The review studies provide various evidence to the researchers[32-34]. Also considering the impact of drugs on mental health[3,4] and the importance of paying attention to mental health[35,34], For this reason, this review study was conducted. The tendency for using narcotics has increased especially in adults of 30-40 years old. The aim of this systematic review and meta-analysis was to determine the types of drugs and the methods of drug usage by Iranians. The highest drug consumption was observed in >35-year-old age group which was in line with the report of the Iranian Drug Control Headquarterthat reported the highest prevalence of drug abuse in the 20-29-year-old age group[22]. However, in the study of Sadeghiyeh Aberiet al, the highest rate of drug abuse was observedin individuals around 40 years old ([15]).As people usually raise a family in this age group [20-29], providing occupationopportunities to provide their family's expenses may help them to avoid drug abuse.

The present study showed that the most consumed substance was opium with50% frequency (95% CI: 35-66) followed by opium extract and heroin with frequencies of 44% (95% CI: 5-83) and 19% (95% CI: 12-26) respectively. In addition, consuming more than one type of drug was observed in 9% (95% CI: 4-15).It seems that higher tendency to consume opium and opium extract roots in their faster and easier availability, as well as their cheaper prices than other narcotics.Over the past two decades,policies such as intense monitoring of Eastern borders to prevent drug trafficking, arresting drug dealers, establishing rehabilitation centers, and producing and distributing advertising videos and posters to illustrate the negative consequences of drug abuse have been followed in Iran. Nevertheless,drug abuse and its subsequent health problems continue to be serious challenges in the country [16, 23]. Measures such as training life skills through mass media, increasing public awareness of the adverse effects of drug abuse, emotional support for susceptibleindividuals, and educating on drug resistance of narcotics have been effective in reducing drug consumption ([16, 24]). In addition to the aforementioned actions, focusing of families on educating their children and controllingtheir relationships, providingappropriate environment for routine activities and healthy entertainments, and informing community and families about the consequences of narcotics can be effective to prevent drug abuse [16, 23, 24].

A study by Bagheri et al in Qazvin found that the most common used substances were opium and heroin [25]. Also, Abbasi et al. reported that opium constituted the most common in used narcotic in Gorgan [26]. In the study of Ahmadipour et al in Kermanshah, heroin was the most popular drug among addicts,while the lowest frequency was related to hashish [27].

Nevertheless, Di et al. stated that drug injectionwas on the rise [28] in people working in various occupations including health care professions [29].This is critical asif drug abusedisseminates amonghealth care personnel, their activitiesand functioning are disrupted endangering patients' lives and increasing occupational violence [30-31].

Conclusion

Drug abuse is a common phenomenon in Iran.It is amenable to reduce the tendency to using drugs by providing appropriate training, informing the risks of drug abuse, and identifying and educating high-risk groups.

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