The Prevalence of Psychotropic Drugs and Relevant Factors in Iranian Youth: A Systematic Review and Meta-Analysis

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Review Article

Abstract

Background: Psychotropic drugs can cause many complications and side effects including cognitive, behavioral, and psychological disorders. In recent years, the Iranian youth and adolescents have growingly been using psychotropic drugs. Therefore, this study analyzes the overall prevalence of psychotropic drugs and the relevant factors among the Iranian youth through a systematic review and a meta-analysis.

Methods: Based on the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) checklist, this study includes a systematic review and a meta-analysis. For bias prevention, qualitative evaluation and data extraction were performed independently by two people. Different databases (PubMed, Science Direct, Springer, Wiley, ISI Web of Science, Cochran, Google Scholar, Magiran, IranMedex, SID, ISC) were investigated online, and data analysis was done in Stata software.

Findings: In total, 5 articles were selected for the meta-analysis phase. They had been published between 2008 and 2018. According to the meta-analysis results, the overall prevalence of psychotropic drugs was 4.18% [95% confidence interval (CI): 2.52-5.84] in the Iranian youth population. The overall prevalence of psychotropic drugs was 4.74% (95% CI: 1.49-7.99) and 1.06% (95% CI: 0.72-1.41) in young men and women, respectively. Three studies indicated a significant relationship between gender and the use of psychotropic drugs. In other words, the prevalence of psychotropic drugs was significantly higher in boys than in girls (P < 0.05).

Conclusion: The research results showed that family, parents, close friends, and unemployment were the factors affecting the prevalence of psychotropic drugs in the youth and adolescents.

Keywords: Psychotropic drugs; Adolescent; Meta-analysis; Iran

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Introduction

Psychotropic drugs can cause many complications and side effects including cognitive, behavioral, and psychological disorders. They can also lead to severe psychological dependence, which is much more detrimental than physical dependence.¹ Psychotropic drugs leave many adverse effects such as loss of appetite, vision disruption, visual hallucinations, increased heart rate and blood pressure, increased body temperature, nightmares, sudden attacks, madness, severe jaw contraction, learning disabilities, lack of concentration, amnesia, seizures, and even sudden death.² Currently, one-tenth of deaths are caused by smoking and taking psychotropic drugs worldwide. This rate will increase to one-sixth by 2030.³

Despite the planned programs and the advanced drug treatment system in Iran, the use of psychotropic drugs is on the rise.^{4,5}

In recent years, psychotropic drugs have become increasingly prevalent among different Iranian strata. Having cultural and social outcomes, the increasing use of these drugs will threaten the physical and mental health of society. ^{5,6} Various studies have shown that there is a similar trend in the use of psychotropic drugs in children and adolescents in European countries such as the Netherlands, Denmark, Iceland, and Norway. ⁷⁻¹¹ In the United States (US), the use of psychotropic drugs has been doubled or even tripled among children and adolescents within the 1984-1996 and the 2000-2002 periods. In fact, there has been a sharp increase in the use of psychotropic drugs. ^{7,12}

The rapid spread of psychotropic drugs among young people can have devastating impacts such as physical and mental disorders, suicide, reckless destruction of public property, aggressive behavior, emotional issues, confusion of identity, and high-risk sexual behavior. These behavioral problems indicate the need to plan and develop preventive intervention strategies. An Iranian study indicated that the increased use of drugs was associated with certain factors such as male gender, older age, high-risk behavior, high levels of smoking, autonomy, and higher socioeconomic status (SES) among the youth.13 According to the results of a study on the use of stimulants, alcoholic beverages, and psychotropic drugs in Tehran, Iran, the consumption rates of stimulants and psychotropic drugs were 7.2% and 3.8%, respectively. There was also a significant relationship between the use of psychotropic drugs and family issues.¹⁴

In recent years, psychotropic drugs have become very popular with the Iranian youth and adolescents. Since this problem has affected all age groups, the use of these drugs is still a major concern among the youth, who take psychotropic drugs for various reasons. This study aimed to analyze the overall prevalence of psychotropic drugs among Iranian youth as well as the relevant factors through a systematic review and a meta-analysis.

Methods

Study design: This study includes a systematic review and a meta-analysis conducted to analyze the prevalence of psychotropic drugs and the relevant factors among the Iranian youth.

Search strategy: The study was based on the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) checklist. 15 For bias prevention, quality assessment and extraction were conducted independently by two individuals. Research data were collected from different databases (PubMed, Science Direct, Springer, Wiley, ISI Web of Science, Cochran, Google Scholar, Magiran, IranMedex, SID, ISC). The search keywords were "psychoactive drug" or "psychotropic drug", "substance abuse", "prevalence", and "youth and teenagers" [according to English Medical Subject Headings (MeSH) keywords].

Inclusion and exclusion criteria: Two authors conducted separate search processes and considered the title and abstract of each paper with regard to the inclusion criteria, which necessitated the following conditions. The papers were expected to be published in peer-reviewed journals and written in English and Persian. The exclusion criteria included qualitative studies, studies with unavailable texts, case studies, letters to editors, prefaces, and papers of other languages.

Data extraction and paper quality evaluation: Two authors screened and evaluated the papers based on the research literature independently. They also excluded the papers that had obviously not met the inclusion criteria. After that, they read the full texts of papers for re-screening. All of the accepted papers were assessed through the modified version of Newcastle-Ottawa Scale (NOS), 16 the results of which can be seen in table 1.

Table 1. Characteristics of selected articles in the present study	Table	1.	Characteristics	of	selected	articles	in	the	present study	
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Author	Gender	Number	Type of study	City	Age group (year)	Mean of age (year)	Prevalence (%)
Rahimi Pordanjani	Male	122			21-25	21.97	4.00
et al. ¹⁷	Female	128	Cross-sectional	Yazd			1.60
	Total	250					5.60
Ashrafi Hafez	Male	220			18-22	-	8.50
and Fakor Ziba ¹⁹	Female	420	Cross-sectional	Shiraz			1.30
	Total	640					9.80
Ghavidel et al. ¹⁸	Total	400	Cross-sectional	Nazar Abad	15-20	17.30	1.50
Hamdieh et al. ¹⁴	Male	4444			15-35	21.00	2.80
	Female	2731	Cross-sectional	Tehran			1.02
	Total	8175					3.80
Poorasl et al. ¹³	Total	1785	Cross-sectional	Tabriz	15-19	16.25	2.20

The following features of the papers were extracted for pooled estimation: names and genders of the first authors, type of the study, and other characteristics.

The meta-analysis was conducted in Stata software (version 12, Stata Corporation, College Station, TX, USA), and the results were reported as the overall prevalence within the 95% confidence interval (CI). The prevalence percentage for each characteristic was obtained by combining the results and weighting the sample size in the corresponding study. The Cochran chisquared test and I^2 were employed for heterogeneity evaluation. A fixed-effects model was used for $I^2 < 50\%$, whereas a random-effects

model was employed for $I^2 > 50\%$.

Results

Based on the inclusion criteria, 324 papers were found in the preliminary search of domestic and international websites from PubMed, Science Direct, Springer, Wiley, ISI Web of Science, Cochran, Google Scholar, Magiran, IranMedex, SID, and ISC. The exclusion criteria led to the deletion of 156 papers, 150 of which were duplicate papers, whereas six papers had no available full-text manuscripts. After the titles and abstracts were reviewed, 138 papers were deleted. Then, 24 papers were removed from this study. Finally, six full-text papers were included in the meta-analysis. Figure 1 shows the paper selection details.

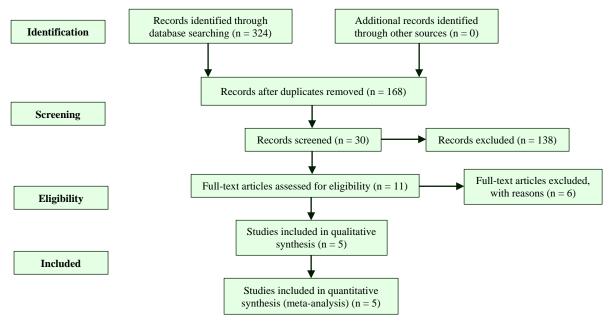


Figure 1. The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) flowchart for the selection of the eligible studies for meta-analysis

Table 3. Investigating the relationship between the use of psychotropic drugs and background variables in Iranian youth

Author	Age	Gender	Marital status	Daily exposure to smoking	Smoking parents	History of drug use	Smoking friends
Rahimi Pordanjani et al. ¹⁷	0.030	0.080	0.250	< 0.001	0.001	0.010	-
Ashrafi Hafez and Fakor Ziba ¹⁹	0.330	< 0.001	0.003	0.001	-	-	-
Ghavidel et al. ¹⁸	-	0.001	-	-	-	-	-
Hamdieh et al. ¹⁴	-	< 0.050	< 0.050	-	-	-	-
Poorasl et al. ¹³	0.003	-	-	0.700	-	0.040	0.019

The values reported in the table are the significant values reported between the background variables and the prevalence of psychotropic drugs.

According to table 1, these papers were published within the 2008-2018 period. All of them were cross-sectional studies; two of which were published in English, whereas 5 studies were published in Persian. Rahimi Pordanjani et al.¹⁷ and Ghavidel et al.¹⁸ stated in their studies that the most common motivation for using psychotropic drugs in the youth was to gain pleasure (50.0%) and have fun (42.5%), respectively. According to them, 28.7% of the youth turned to psychotropic drugs to have fun. In a study by Ashrafi Hafez and Fakor Ziba, the most common reason for using psychotropic drugs among the youth was curiosity (23.7%).19 This factor was also reported (29.9%) in the study by Ghavidel et al. Ashrafi Hafez and Fakor Ziba indicated that 17% of the youth turned to psychotropic drugs due to problems in life, whereas 12% stated that gaining pleasure was the motive for taking psychotropic drugs. Table 2 shows the P-value reported in the selected papers. The results indicate that family factors, marital status, and exposure to smoking had significant effects on the use of psychotropic drugs.

According to table 2, the two studies by Rahimi Pordanjani et al.¹⁷ and Poorasl et al.¹³ indicated a significant relationship between age

and the amount of psychotropic drugs used. In people might take words, psychotropic drugs as they get older. Moreover, the three studies by Hamdieh et al.,14 Ghavidel et al.,18 and Ashrafi Hafez and Fakor Ziba19 reported a significant relationship between gender and the use of psychotropic drugs. In other words, boys were more likely to take psychotropic drugs than girls (P < 0.05). Furthermore, Ashrafi Hafez and Fakor Ziba and Hamdieh et al. reported that there was a significant relationship between marital status and the use of psychotropic drugs. In their study, Rahimi Pordanjani et al. and Ashrafi Hafez and Fakor Ziba showed that exposure to smoking was significantly associated with the increased use of psychotropic drugs among the youth. Rahimi Pordanjani et al. and Poorasl et al. reported that there was a significant relationship between the history of drug use and the increased use of psychotropic drugs among the youth. Figure 2 shows the overall prevalence of psychotropic drugs among the Iranian youth. Accordingly, it was 4.18% (95% CI: 2.52-5.84) and $(I_2 = 93.1\%, P < 0.001)$. In addition, the overall prevalence of psychotropic drugs was 4.74% (95% CI: 1.49-7.99) in young men and was 1.06% (95% CI: 0.72-1.41) in young women (Figure 3).

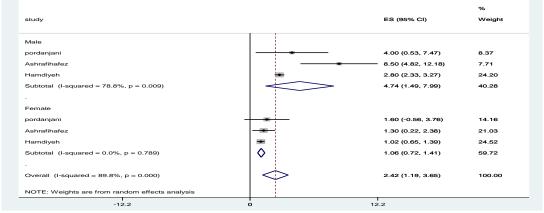


Figure 2. The overall prevalence of psychotropic drugs and their 95% confidence interval (CI) in studies based on men and women

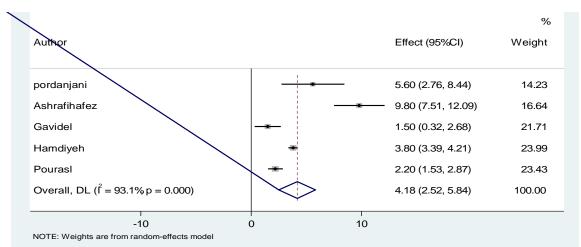


Figure 3. The overall prevalence of psychotropic drugs and their 95% confidence interval (CI) in studies based on the model of random effects. Due to the heterogeneity of studies (93.1% = and P < 0.001), the model method of random effects has been used to estimate the overall prevalence and CI

The highest prevalence of psychotropic drugs was reported in a study by Vakili et al.²⁰ (10.8%) and Ashrafi Hafez and Fakor Ziba (9.8%), whereas the lowest prevalence of psychotropic drugs was reported in a study by Ghavidel et al. (1.5%)¹⁸ and Poorasl et al. (2.2%).¹³

Publications bias: To show the bias of publications in studies, we used funnel plot; it showed that the data were not symmetric. Therefore, there is a bias in publishing studies that indicates that some studies are not published or researchers do not have access to some articles or study results (Figure 4).

Discussion

Given the importance of physical and mental health of the youth who can be considered the future elites

of society, it is necessary to evaluate their health status for educational purposes. Therefore, this study analyzes the overall prevalence of psychotropic drugs among the Iranian youth.

In general, the results of six studies showed that the overall prevalence of psychotropic drugs in the Iranian youth was 5%. In another study, Zoega et al. reported the prevalence of psychotropic drugs in adolescents at 4%, 10 which is nearly equal to the prevalence of psychotropic drugs in the Iranian youth.

According to other studies, the use of psychotropic drugs in Iranian boys was significantly higher than in Iranian girls. Similar studies also indicated that boys accounted for a higher percentage of psychotropic drug users than girls.^{21,22}

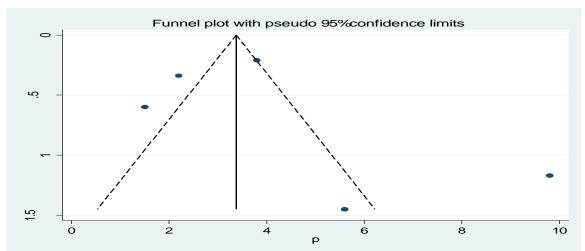


Figure 4. Funnel plot of studies

Table 2 shows clearly that marital status and the presence of both parents in the family are factors that can decrease the prevalence of psychotropic drugs. However, a tense family atmosphere can increase the potential prevalence of psychotropic drugs.

Research results also indicated that the consumption of psychotropic drugs was higher in single people. According to some other studies analyzing the prevalence of psychotropic drugs based on marital status, more than 80% of consumers were single. Research findings show that curiosity is one of the most important factors in the tendency to use psychotropic drugs among the Iranian youth. In fact, young people are more likely to become addicted to psychotropic drugs due to curiosity and the need for risk (either to prove their courage or to show off).

Family is another factor affecting the use of psychotropic drugs in the Iranian youth. Studies show that drug use in parents plays an important role in the young people's tendency to use psychotropic drugs. Addicted parents are considered role models by their children who witness parents' addiction every day. When they become adults, children are likely to follow in their parents' footsteps and assume similar roles.

Psychotropic drugs are also more prevalent in the young people who have experienced parental differences, parental separation, divorce of their parents, and emotional deficiencies.

Typically, the young people who share common family issues gather in groups and try to limit their relationships with others. In these groups, young people face many anomalies, among which the use of psychotropic drugs is just one problem that they suffer from.

Moreover, close friends can act as another factor playing an important role in the use of psychotropic drugs in the Iranian youth. The analysis of research results showed that friends were associated with the tendency to use psychotropic drugs.

According to Sutherland et al., people become criminals by communicating with others who adhere to criminal norms. Based on Sutherland's theory, most illegal and delinquent behaviors are learned within first groups, especially peer groups.^{23,24}

Goreishi and Shajari in a study showed that substance abuse was higher in men than women. Besides, drug abuse was higher among older students with higher degree, and with psychological disorder history.²⁵

Hosseinnataj et al. in their study found that the homeless youth were more desired to use alcohol and drug injection, whereas the prevalence of alcohol consumption and drug injection in homeless youth was higher than general youth population in Iran.²⁶

Conclusion

In general, the findings of this study showed that the prevalence of psychotropic drugs was 5% in the Iranian youth. Accordingly, the prevalence of psychotropic drugs was significantly higher in boys than in girls. Other results also indicated that family, parents, close friends, history of drug use, and unemployment were identified as the factors affecting the prevalence of psychotropic drugs in the youth. Since pleasure and curiosity were reported to be the greatest motives of the Iranian youth for using psychotropic substances and drugs, it would be beneficial to establish recreational-sports centers in different regions of Iran in cooperation with other departments.

Apparently, scant awareness of the use of psychotropic drugs can lead to the lack of consideration of psychotropic drugs among the Iranian youth.

Young people's views on the use of psychotropic drugs and their willingness to have fun without considering the consequences of taking these drugs have an effect on their tendency to use such drugs.

The Iranian youth may have a positive view of psychotropic drugs by interacting with the people who are somehow associated with drugs or by watching movies that show the use of these drugs.

Therefore, it is apparently necessary to determine what percentage of the Iranian youth tend to use psychotropic drugs and narcotics, regardless of the relevant effects and risks, in order to reduce the demand for these drugs and infuse the youth with negative attitudes toward substance abuse.

Conflict of Interests

The Authors have no conflict of interest.

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Authors' Contribution

All authors have contributed to the writing of this

article. Determined the title and keywords of the article, and helped to write the discussion of the study: AE; participated in the search based on the keywords of the databases: SSH; participated in the analysis using Stata software and writing of article: MKH.

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بررسی شیوع مصرف داروهای روانگردان و عوامل مؤثر بر آن در بین جوانان و نوجوانان ایرانی: یک مطالعه مروری و متاآنالیز

احمدعلی اسلامی 🕬، صدیقه شریعتینیا 🐠، محدثه خوش گفتار 👫

مقاله مروري

چکیده

مقدمه: مصرف داروهای روان گردان در افراد، منجر به بروز مشکلات مکرر و عواقب جانبی می شود که شامل مجموعهای از علایم شناختی، رفتاری و روانی می باشد. یکی از معضلاتی که در چند سال اخیر به صورت جدی در جامعه ایران رخ داده است، مصرف داروهای روان گردان به ویژه در جوانان و نوجوانان ایرانی و عوامل و نوجوانان می باشد. بنابراین، پژوهش حاضر به بررسی برآورد کلی میزان شیوع مصرف داروهای روان گردان در جوانان و نوجوانان ایرانی و عوامل مرتبط با آن با استفاده از یک مطالعه مروری و متاآنالیز در کشور پرداخت.

روشها: این مطالعه از نوع مروری و متاآنالیز بود که تمام فرایند اجرا و نگارش آن بر اساس چکلیست PRISMA) Systematic Reviews and Meta-Analyses ارزیابی گردید. برای جلوگیری از سوگرایی، ارزیابی کیفی و استخراج دادهها توسط Scopus ScienceDirect ،PubMed جامتی خارجی Magiran Iran Medex نویسندگان ومجری اصلی به طور مستقل انجام شد. اطلاعات با جستجو در پایگاههای اطلاعاتی خارجی Google Scholar ،Web of Science و Cochran و Google Scholar ،Web of Science و اخلی ۲۰۲۰ صورت گرفت. ترکیب نتایج تحقیقات منتخب با استفاد از میزان شیوع مصرف داروهای روان گردان، واریانس و تعداد نمونه در مقالات بود. از انحراف معیار به منظور وزن دهی به تکتک مطالعات استفاده گردید.

یافته ها: در مجموع، ۵ مقاله برای مرحله متاآنالیز انتخاب شد که بین سالهای ۲۰۱۸ تا ۲۰۱۸ منتشر شده بودند. شیوع کلی داروهای روانگردان 4,0 درصد (فاصله اطمینان ۹۵ درصد: 4,0 درصد (فاصله اطمینان ۹۵ درصد: 4,0 درصد (فاصله اطمینان ۹۵ درصد: 1,0 درصد (فاصله اطمینان ۹۵ درصد: 1,0 درصد: 1,0 درصد (فاصله اطمینان ۹۵ درصد: 0,0 در مردان و زنان جوان گزارش گردید. سه مطالعه نشان داد که بین جنسیت و مصرف داروهای روانگردان رابطه معنی داری وجود داشت. به عبارت دیگر، شیوع داروهای روانگردان در پسران به طور معنی داری بیشتر از دختران بود (0,0 در 0,0 در بسران به طور معنی داری بیشتر از دختران بود (0,0 در بسران به طور معنی داری بیشتر از دختران بود (0,0 در بسران به طور معنی داری بیشتر از دختران بود (0,0 در بسران به طور بیشتر از دختران بود (0,0 در بسران به طور بیشتر از دختران بود به بیشتر از دختران بود به بیشتر از دختران بود (0,0 در بسران به بیشتر از دختران بود به بیشتر از دختران بود (0,0 در بسران به بیشتر از دختران بود به بیشتران به بیشتر از دختران بود بیشتر به بیشتر از دختران بود به بیشتران بود بیشتر به بیشتر به بیشتر از در بیشتر بیشتر به بیشتر به بیشتر به بیشتران بیشتر به بیشتر به بیشتر به بیشتر به بیشتر به بیشتران بیشتر به بیشتر به بیشتر به بیشتر به بیشتر به بیشتر به بیشتر بیشتر به بیشتر

نتیجه گیری: عواملی مانند خانواده، والدین، دوستان نزدیک، سابقه مصرف مواد مخدر و بیکاری میتواند در شیوع مصرف داروهای روان گردان در جوانان و نوجوانان و نوجوانان تأثیر بگذارد. با توجه به این که بیشترین انگیزه جوانان و نوجوانان ایرانی از مصرف مواد و داروهای روان گردان، سرگرمی و کنجکاوی می باشد، بهتر است با همکاری سایر ادارات، مراکز تفریحی- ورزشی در مناطق مختلف کشور احداث شود.

واژگان کلیدی: داروهای روان گردان؛ نوجوانان؛ متاآنالیز؛ ایران

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