

Self-medication and its Related Factors in Health Educational Organization Staff

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Iran is one of the largest drug consumers worldwide. Self-medication can be an important factor for this problem. The aim of the present study was to evaluate self-medication and its related factors among Department of Education staff. In this cross-sectional study, 404 subjects were randomly selected from educational organization staff in Tehran province during 2009-2010 years. The required data were collected using a questionnaire. The data were analyzed using SPSS statistical software. 81.4% of the subjects were keeping drugs at their homes. The most important reason for this was drug storage for future (64.4%). Most of the drugs that had been kept at home were analgesics (77%). Likewise, 70.5% of the subjects had self-medication. Analgesics (33.3%) were the most drugs which had been used. Furthermore, the most important factors affecting self-medication were existence of mild symptoms and independency to visit by physicians (32.9%), previous usage of drug and recurrence of similar symptoms (25.4%) and similar prescription by other physicians (22/6%). There was significant association between self-medication and profession ($p=0.010$), educational degree ($p=0.010$), number of children ($p=0.001$) and the maintenance of drug at home ($p=0.001$). Also, there was significant association between the maintenance of drug at home and educational degree ($p=0.027$) and income ($p=0.025$). This study shows that staffs of educational organization as a graduated class of people has a higher self- medication compared with other people reported by others.

Key words: self-medication, Drug maintenance, Educational organization staff.

Drug consumption is a multi variable issue which is affected by cultural, social, geographical, ideological and religious factors. Nowadays, proper and rational use of drug is one of the goals and programs of World Health Organization and consequently Ministry of Health and Medical Education also.

27% of the budget of the ministry of health and Medical Education of Iran is allocated to the medication¹. On the other, Descriptive results of 39 universities from 2001 to 2006 obtained from

prescription of the insurance physicians across the country that is that seasonally and permanently examined by prescription examination committee shown that the average of prescribed items was 3.4 to 4.32 number of drugs per prescription that 58-64% was antibiotic drugs. While, number of drugs per prescription that has been reported by the World Health Organization are 3/1 to 5/1 drugs². Iran is the One of the biggest consumers of antibiotics in the world³. also, the script journal published a report in 1997 stated that Iran's first blockbuster drug is amoxicillin with 13 million dollars worth and second is ampicillin with 7 million dollars worth⁴. According to provided statistics, the average of the growth rate of self medication in the country

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is about 11.5 percent, while the same amount has been reported 7 percent in developing countries and 9 percent in the whole world⁵.

Self medication imposes heavy costs on the country's budget and also the complications of wrong usage of drug can double losses in the country's economy. As reported by the drug side effects assessment group in the ministry of health, in the past 10 years, almost 10,000 drug side effects have been recorded in the ADR center of Iran. 30 percent of these reports were for injections. Most of complications were due to antibiotics and neurological drugs. Unfortunately, there was no distinct report for self medication side effects. While in European countries 3.5 to 4 percent of patients are entering hospitals due to medication side effects, patient admission for this reason in our country is up to 20 percent⁶. T. Chakraborty and *et al.* reported that The most common reasons for self-medication were parental advice (16.61%) although they were highly educated, lack of time (25.78%), Cheap (6.5%), lack of consciousness about the disease (37.82%), reuse of old prescription (2.57%), quick relief (3.43%), and easy availability (2.0%). Conclusion From the above data we can conclude that despite majority being aware of harmful effects of self-medication its prevalence is high in the educated youth⁷.

Among the causes of high drug use in our country than the world average and the standard have been pointed to self-medication⁸.

Studies within the country confirms irrational drug use⁹ and high prevalence of self-medication^{10,11}, Every Iranians uses about 339 number of drugs annually that is more than global standard. Treatment and self-medication by patients because of its economic and cultural issues become a problem and refer patients to get non-prescription drugs has increased substantially in this period. This is a serious health hazard for society and solving this problem needed to education and proper information for the general population^{12, 13}.

Another problem that should be considered is drug storage at home. According to Hashemi *et al.*, one of the main reasons of self-medication is remaining of drug at home¹⁴. Generally, wrong drug consumption is a global problem that performed studies have confirmed it¹⁵⁻¹⁷.

Many factors are involved in increasing of drug use in the world which they can be divided

into three groups: pharmacological factors, cultural factors and social factors. Educated people, especially teachers, are from social groups that use drugs arbitrary due to higher awareness. Therefore, the drug consumption culture in this effective group has an important role in creating a proper drug consumption culture in the country. Consequently, improper use of drug in this group would lead to wrong culture in the community and it is necessary to investigate this matter.

However, in order to find appropriate solutions to solve the problem of arbitrary and wrong drug use, it is necessary to identify causes and contributing factors. The most important reasons to have such a wrong behavior are symptomatic therapy, no attention to disease importance and high expenses of visiting doctors. Factors such as educational level, occupation and region of residence are also effective in the formation of this behavior.

Finally regard to lack of a comprehensive study about this issue, in the present study, drug consumption and some effective factors in educated peoples was evaluated

METHODS

A cross section of education general office staffs in Tehran province was selected for the project during 2009-2010 time periods. This descriptive and analytical study has been done in order to investigate arbitrary drug consumption. As defined in this study, attempt to use a drug to improve a mental or physical health problem without consulting a Physician was considered as arbitrary drug consumption. According to the prevalence of arbitrary drug consumption in a pilot study, sample size were determined with $\pm=0.05$ and $p=0.05$. After explaining the purpose of the study and after taking informed oral consent, 368 persons were randomly selected and interviewed. The study was given prior approval from the institutional ethics committee. Collected data was analyzed by SPSS#17 software using Mann - Whitney and chi-square statistical tests and p-value of <0.05 was considered statistically significant.

The questions consisted of both closed and open-ended questions. A total of 33 questions were stated concerning the following: Socio-demographic characteristics (like age, sex and

personal habits), patterns of self – medication, knowledge about drug side effects and drug storage. Questions face validity were determined by drug experts and content validity were obtained using a pilot test for 40 participants.

RESULTS

Totally, 404 staffs from Tehran Education Department personnel were studied. The mean age of understudy subjects was $39/35 \pm 9/2$ years (the range of 22 and 58 years). 184 patients (45.5 percent) were men and 220 (54.5 percent) of those were women. Based on our results, formal contractual and conventional and tuition fees working employments formed 63, 28 and 9 percents of study population respectively (Table1).

Income based, participant were divided to 4 groups: less than 1.5, 1.5-3, 3-4.5, and more than 4.5 million IRR. Our results demonstrated that most of the individuals (74.3 percent) earned 1.5-3 million IRR per month 14.6, 44.6 and 34.4 of participants were covered by social covering, medical services and medical services plus medical supplementary insurances respectively. 26 people had no insurance which comprise 6.4 percent of all. The frequency distributions of the insurance types are given in Table 2. (Table 2)

Results showed that 329 respondents (81.4 percent) were keeping drugs at home. Drugs which were kept at home mostly included: analgesics (77 percent), antibiotics (62.1 percent), gastrointestinal drugs (50.7 percent), cold medications (34.9 percent) and supplements (27.7 percent).

The most frequent cause of drug’s maintenance at home was drug storage due to precautions (64.4 percent). The frequency distribution of the causes of drug storage at home is given in Table 3. (Table 3)

In the study, participants were questioned about the arbitrary drug use during the previous three months that the results showed overall 72.2 percent of those had experienced self-medication during past three months and the remainders (27.8 percent) always visited physician at the time of sickness. Most of the drugs that were

Table 1. The frequency distribution of employment types in 404 educational general staffs of Tehran province

Employment Type	Frequency	Percentage
formal	255	63.1
contractual and conventional	113	28
tuition fees working	36	8.9
Total	404	100

Table 2. The frequency distribution of the type of respondents’ insurance

Insurance Type	Frequency	Percentage
Social covering	59	14.6
Medical Services	80	44.6
Medical Services & Supplementary	139	33.4
Lack of insurance coverage	26	6.4
Total	100	404

Table 3. The frequency distribution of drug storage causes at home

Cause of drug storage at home	Frequency	Percentage
Drug storage due to precautions	260	64.4
Uncompleted previous treatment	256	63.4
Prescription by physician and the medical staff	111	27.5
Excessive prescription by physician	13	3.2
Low cost of drugs	2	0.5
The need of drug use at the present time	1	0.2

used arbitrarily during the past three months were analgesics (33.3 percent) and antibiotics (17.8%), cold medicines (11.7%); supplements (10%) and gastrointestinal drugs (8.1%) were placed on the next rank. Common cold (42.4 percent), general pains, (35.3 percent) and digestive diseases (7.5 percent) were the most prevalence disorders which were self medicated. 74.4 percent of drugs had been consumed in pill shape and other forms included the capsule, syrup, ointment and brew formed.

The most important reasons which the participants didn't refer to physician and preferred to use drugs arbitrarily were the presence of the minor symptoms and independence to physicians (32.9 percent), previous use of medicine and consequently healing and existence of similar

symptoms at the present (25.4 percent), prescription of the same order by doctors for similar symptoms (22.6 percent). The frequency distribution of causes of arbitrary drug use during the last three months is given in Table 4. (Table 4)

Only 4.2 percent of subjects were highly informed about the side effects of arbitrary drug consumption and 85.4 percent had less knowledge and 10.4 percent did not know anything about it.

The evaluation of relationship between arbitrary drug consumption and demographic variables and the maintenance of drugs at home revealed that arbitrary drug consumption was significantly associated with the higher educational level ($P=0.010$), more drug storage at home ($P=0.001$) and greater number of children

Table 4. The frequency distribution of causes of arbitrary drug use

The frequency of causes of arbitrary drug use	Frequency	Percentage
The presence of the minor symptoms and independence to physicians	246	32.9
Previous use of medicine and consequently healing & Existence of similar symptoms at the present	190	25.4
Prescription of the same order by doctors for similar symptoms	169	22.6
Non-expert advices to the benefits of drug therapy	51	6.8
Lack of belief and trust on physicians in medical centers	31	4
Lack of medical centers near to home	15	2
The confidence about drugs safety	14	1.8
The belief in traditional medicine and herbal medications	10	1.3
Having not enough opportunity to see a doctor	7	0.9
Lack of health insurance coverage for doctors' visits	6	0.8
Lack of money to pay visits to physicians	6	0.8
The prescription of drugs by pharmacies	5	0.6
Crowded doctor's office or medical centers	1	0.1
The fear and embarrassment of Medical examinations	0	0
Total	746	100

($P=0.001$). There wasn't any significant association between arbitrary drug consumption with age, sex, marital status; type of employment, income and insurance covering status. Also, drug keeping at home was significantly associated with educational ($P=0.027$) and income level ($P=0.025$) (those with income level of 1.5-3 million IRR had the higher maintenance of drugs at home) and there was no relation between it with other variables.

DISCUSSION

As was shown in the results, there was a direct correlation between arbitrary drug

consumption and educational level Similar to these results can be observed in Porteous and his colleagues¹⁸ and Moghadamnia studies¹⁹. However, in some studies, there wasn't any relationship between the arbitrary taking of medications and the educational level like Hem and Stock study²⁰. In this study, a significant correlation was obtained between the arbitrary taking of drugs and number of children, whereas there was no correlation between these two in the studies of Tavakkoli²¹ and Frahaninia^{21, 22}. Self medication in families with more than 3 children was higher due to more economic pressures and lack of sufficient care for children Also, this study indicated that the arbitrary

taking of the drugs was not significantly correlated with age, sex and marital status, employment type, amount of income and insurance. These findings are similar to the results of Marhamat. F²³

Rakhshani M²⁴, Momennasab²⁵, Hem and Stock²⁰ studies However some other investigations like Avad study²⁶ showed that arbitrary taking of drugs were significantly correlated to income level and gender.

Our results showed that drug storage at home was significantly correlated to income level. Peoples with moderate and higher income were more able to visit physicians but due to a wrong culture, prescribed drugs were not fully consumed by them which lead to drug storage at home. However, statistical results showed no significant correlation between drug storage at home and age, marital status, educational level and income amount. Based on this study, approximately 81 percent of participants used to store drugs at home. Reasons for home drug storage were mainly due to precautions, uncompleted period of previous treatments and over prescription drugs by physicians or other medical experts. Similar to these findings can be observed in Hashemi¹⁴ study which 83 percent of families used to store drugs at home. Analgesics, antibiotics, gastrointestinal medications, cold drugs and supplements were the common drugs which were stored. Hashemin *et al.*,¹⁴ also reported that gastrointestinal drugs, analgesics and antibiotics were the most home storing drugs.

Investigation of these drugs showed that these over the counter (OTC) drugs were easily available and mostly used to arbitrary treatments of disease with minor symptoms and/or previously experienced disorders. In this study, it was shown that about 70 percent of those respondents had taken drugs arbitrarily during the past three months. In Davati study, it was shown that 57.5 percent of elderly had used drug arbitrarily²⁷. Common cold, general pains, and digestive disorders were the most self medicated disease.

Tablets, capsules and syrups were the most prevalence drug forms among those who used to self-medication In Momennasab²⁵, Hashemi¹⁴ and Moghadamnia²⁸ studies, the similar results were reported. It may be due to these facts that tablet and capsule are the most common drug forms which

are not invasive at one site, and difficult access to non-prescription ampoule and syrup at the other site.

Based on the results of this study, the most important causes of arbitrary drug use are included the presence of the minor symptoms and independence to physicians, previous use of medicine and consequently healing and existence of similar symptoms at the present and the prescription of the same order by doctors for similar symptoms. In another study, Tavakoli *et al.*,²¹ reported that symptomatic therapy of disease, inattention to disease importance and high expense of doctor visiting were the most reasons for self medication.

In this study, it was identified that most of subjects had little or no information about the arbitrary drug consumption side effects these results are corresponding to Aborne²⁹ and Vallerand³⁰ studies. This can be due to g of doctors, medical staffs and health authorities' shortcoming in providing enough educations about correct drug consumption as well as the wrong culture and inattention to experts' opinions. Interestingly our respondents didn't recommend arbitrary drug consumption to others. It revealed that although they know that arbitrary drug consumption is a wrong behavior they do due to above mentioned reasons.

High prevalence of home drug storage is an indicator for wrong policies, culture and public insight about medication therapy and has imposed high costs on country economy Therefore, it's necessary to perform comprehensive studies and identify factors that affect Home drug storage and the appropriate policies and strategies should be applied In order to edit this wrong behavior, it is strongly recommended to medical staffs, health authorities and public media to provide necessary educations about correct drug consumption.

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