

Alert Addiction among Young Students in Taif City in Western Area of Saudi Arabia

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Abstract- This article is a demonstrative study about the problem and size of addiction in western area especially Taif city in Saudi Arabia through applying of international questionnaires guidelines. These questionnaires were used to assess tobacco, alcohol, and narcotics addiction. They were performed on secondary school male students in Taif, Saudi Arabia, in addition to Roshd and Kafa and population as well. The total sample size for the present study is equal to 2514.

The study revealed that the percentage of tobacco, alcohol, and narcotics addiction are 35.25%, 1.25% and 0.25%, respectively. These results indicate that smoking % in Taif area (35.25%) has been increased from latest reported results (26.50) in Saudi Arabia while the results of alcohol (1.25%) and narcotics (0.25%) addiction are considered very low if compared with percentage available from the WHO report.

Index Terms- Addiction, narcotics, tobacco, alcohol, community, toxic substances, human health.

I. INTRODUCTION

Addiction is a chronic, often relapsing brain disease that causes compulsive drug seeking and use, despite harmful consequences to the addicted individual and to those around him or her. Although the initial decision to take drugs is voluntary for most people, the brain changes that occur over time challenge a person's self control and ability to resist intense impulses urging them to take drugs [1]. Drug abuse and addiction (alcohol, tobacco and other drugs) are a major burden to society; economic costs alone are estimated to exceed half a trillion dollars annually in the United States, including health, crime-related costs, and losses in productivity [2].

Despite public health campaigns against tobacco, smoking remains the leading avoidable cause of death worldwide, killing almost six million people every year, mostly in low- and middle-income countries, the World Health Organisation say if trends hold, the number of deaths that are blamed on tobacco use will rise to eight million a year in 2030 [3]. There are two types of addiction: physical addiction and psychological addiction. Physical addiction entails an actual change in the addict's body, whereby it requires the drug to function. Another common sign of physical addiction is tolerance, whereby the body requires greater and greater amounts of the drug in order to achieve the same feelings. Ceasing use of the drug in the case of a physical addiction often results in withdrawal symptoms such as shaking, vomiting or seizures. Even if they don't create a physical addiction, most drugs create a psychological addiction in their

users. A psychological addiction is a mental craving for the drug and the feelings associated with it. That desire is distinct from physical addiction in that there are rarely any withdrawal symptoms if the addict doesn't get his drug of choice [4]. Abused drugs fall into three categories: depressants (e.g. heroin, barbiturates), stimulants (e.g. cocaine, crack, amphetamines) and hallucinogens (e.g. marijuana, ecstasy, LSD1), and are ingested, inhaled, smoked, injected or snorted. Depressants are sedatives which act on the nervous system [5]. Drugs contain chemicals that tap into the brain's communication system and disrupt the way nerve cells normally send or receive information. There are at least two ways that drugs cause this disruption, first by imitating the brain's natural chemical messengers and second by overstimulation the "reward circuit" of the brain. Some drugs (e.g., marijuana and heroin) have a similar structure to chemical messengers called neurotransmitters, which are naturally produced by the brain. This similarity allows the drugs to "fool" the brain's receptors and activate nerve cells to send abnormal messages. Other drugs, such as cocaine or methamphetamine, can cause the nerve cells to release abnormally large amounts of natural neurotransmitters (mainly dopamine) or to prevent the normal recycling of these brain chemicals, which is needed to shut off the signaling between neurons. The result is a brain awash in dopamine, a neurotransmitter present in brain regions that control movement, emotion, motivation, and feelings of pleasure. The over stimulation of this reward system, which normally responds to natural behaviors linked to survival (eating, spending time with loved ones, etc.), produces euphoric effects in response to psychoactive drugs. This reaction sets in motion a reinforcing pattern that "teaches" people to repeat the rewarding behavior of abusing drugs. As a person continues to abuse drugs, the brain adapts to the overwhelming surges in dopamine by producing less dopamine or by reducing the number of dopamine receptors in the reward circuit. The result is a lessening of dopamine's impact on the reward circuit, which reduces the abuser's ability to enjoy the drugs. This decrease compels the addicted person to keep abusing drugs in an attempt to bring the dopamine function back to normal, except now larger amounts of the drug are required to achieve the same dopamine high; an effect known as tolerance [6].

There continues to be an enormous unmet need for drug use prevention, treatment, care and support, particularly in developing countries. Drug use affects not only individual users, but also their families, friends, co-workers and communities. Children whose parents take drugs are themselves at greater risk of drug use and other risky behaviors. Drugs generate crime, street violence and other social problems that harm communities.

In some regions; illicit drug use is contributing to the rapid spread of infectious diseases like HIV and hepatitis. Heroin consumption has stabilized in Europe and cocaine consumption has declined in North America – the most lucrative markets for these drugs. But these gains have been offset by several counter-trends: a large increase in cocaine use in Europe and South America over the last decade; the recent expansion of heroin use to Africa; and increased abuse of synthetic ‘designer drugs’ and prescription medications in some regions [7].

Drug addicts feel forced into taking their drug by their addiction, they simply don't have a choice. In accordance with that, they may do any number of morally reprehensible things in the service of the next fix: lie to family members, steal money, and even engage in armed robbery or prostitution. Previous hobbies or passions fall by the wayside, as more and more time is spent in pursuit of the drug, and home and work life may suffer drastically as well [8]. Saudi Arabia has a large number of expatriates, some of whom live in special quarters. Alcoholic beverages are available to them, but the unwritten rule is that the drinking takes place behind closed doors. While there are limited legal means to get alcohol and consume it privately, which is thought to be more active through the eastern side of the country [9]. Data collected by the WHO Regional Office for the Eastern Mediterranean in 2003 estimates that the extent of alcohol use in Saudi Arabia is increased and that data from the last five years suggest a stable trend in the use of alcohol [10].

A cross-sectional study conducted in Al-Amal Hospital in Riyadh in March 1998 of 160 male patients aged 20 years or older found that alcohol was used by 23.75% of the patients.²⁰ Also in a study of 120 male inpatients in a hospital for treatment of male substance abusers in Dammam in Saudi Arabia's eastern region, it was found that 12.5% of the sample abused alcohol singularly without abuse of other drugs [11]. The last published report for the first five months of 2013 issued by the administration against narcotics of the anterior ministry shows the importance of the narcotics traffics in the Gulf region via Iran and Iraq coming from Afghanistan. [12]. The purpose of this work will try also to present a comparison between rates of drug addiction in Saudi Arabia and other countries not only in the Middle East but also throughout worldwide. Thus, this will reflect a complete picture of the addiction phenomena and permitted the adaptation of recent programs and methods for its prevention and treatment.

II. METHODS

The Questionnaire for Experience of Substance Use (Q-ESU) was used to assess whether participants habitually used tobacco, alcohol, and/or other addicting substances (cannabis, amphetamines, heroin, and ecstasy). These questionnaires were performed on secondary school male students as represented by Elmaaly Private Secondary School (Khaled Bin Elwaleed Street, Taif ,KSA), Taif Secondary School (Centre Elmouheebin, Taif, KSA) and King Abdalla Secondary School (King Khaled Route, Taif, KSA) in addition to Roshd Association (El-Hada Circle Route , El-Hada, Taif ,KSA); Kafa Association (Airport Route, Taif ,KSA); and population as well. The total sample size for the present study is equal to 2514.

These questionnaires were classified into two groups:

A) Questionnaires performed for secondary school male students (private and governmental) and population.

- 1- Two questionnaires for male students (age: 15-25) at the private and governmental (Gov) secondary schools to assess tobacco addiction (Sample n: 400).
- 2- Two questionnaires for male students (age: 15-25) at the private and governmental (Gov) secondary schools to assess alcohol addiction (Sample n: 400).
- 3- Two questionnaires for male students (age: 15-25) at the private and governmental (Gov) secondary schools assess narcotics addiction (Sample n: 400).
- 4- Three questionnaires for male population (age: 25-40) to assess tobacco, alcohol and narcotics addiction (Sample n: 1200), respectively.

B) Questionnaires performed for patients' of Kafa and Roshd Clinical Associations

- 1- Questionnaire for Kafa male patients (age: 25-40) to assess tobacco addiction (n=76).
- 2- Questionnaire for Roshd male patients (age: 25-40) to assess tobacco addiction (n=38).

Moreover, all the aforementioned questionnaires contain several questions concerning knowledge factors that influencing percentages of the addiction in different groups of students and population.

The above mentioned questionnaires were done to assess: data about nicotine, alcohol and narcotics addiction. Information about the patients such as: age, gender, and education level. These questionnaires were presented to the community, governmental (Gov.) and private schools (Figure 1).

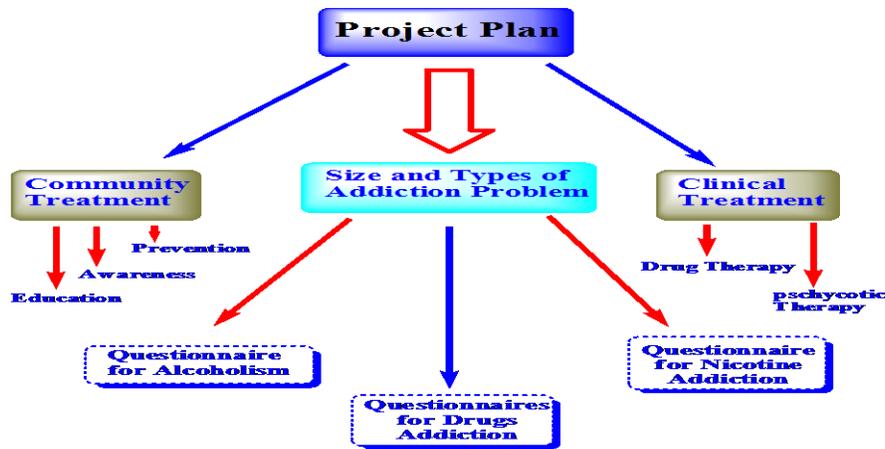


Figure 1. The proposed project plan for conducting this research.

a- Determination of nicotine addiction level

The Fagerstrom test [17] was adopted for the calculation of nicotine addiction. The score test means:

8-10. High to very high dependence: Level of nicotine dependence is high. You should discuss using some form of NRT (nicotine replacement therapy) or Champix with your doctor when giving up, this will help to ease the cravings and withdrawal symptoms. Those who are most likely to benefit from the use of NRT or Champix will be receiving some other form of support.

5-7. Medium to high dependence: have a moderate to high addiction to nicotine and you have difficulty going without it. A nicotine replacement aid such as gum, patches, inhalator, lozenges, microtabs, nasal spray or Champix might make it easier for you to give up. Remember, those who are most likely to benefit from the use of NRT will be receiving some other form of support.

3-4. Low to medium dependence: have a moderate addiction to nicotine and you have difficulty going without it. You may benefit from discussing treatment options with your health professional.

1-2. Low dependence: addiction to nicotine is low. Give up now, before your habit becomes more of an addiction, and you'll find it a lot easier. You should be able to give up without any medication.

The Fagerstrom test gives you a score between 1 and 10. The higher the score, the more likely you are to benefit from using NRT to assist with withdrawal symptoms and to quit. Those with a score over 5 should consider using an NRT product. Those with a score of 3-4 may still benefit from discussing treatment options with their health professional. NRT is usually not recommended for those smoking less than 10 cigarettes a day and not smoking within the first hour of waking. Use of NRT is not recommended for those with heart and vascular disease or during pregnancy.

b- Determination of narcotics addiction

The DAST-10 is a 10-item, yes/no, self-report screening instrument which takes less than 8 minutes to complete [18, 19] The DAST-10 was designed to provide a brief instrument for clinical screening and treatment evaluation and can be used with adults and older youth. The answer options for each item are "YES" or "NO".

Scoring and Interpretation: the DAST-10, score 1 point for each question answered, "YES", except for question (3) for which a "NO" answer receives 1 point and (0) for a "YES". Add up the points and interpretations are as shown in Table 1:

Table 1: Determination of narcotics addiction using DAST-10 score

DAST-10 Score	Degree of problem related to drug abuse	Suggested action
0	No problems reported	None at this time
1 – 2	Low level	Monitor, reassess at a later date.
3 – 5	Moderate level	Further investigation is required.
6 – 8	Substantial level	Assessment required.
9 – 10	Severe level	Assessment required.

c- Determination of alcohol addiction

Michigan Alcoholism Screening test (MAST) was provided by Professor Selzer. In scoring the MAST, points are assigned to a response depending upon whether the item is worded positively or negatively [20]. MAST instructions reported that for items 1, 4, 6 and 7 negative answers are consistent with alcoholic responses. For items 2, 3, 5, and 9-24 positive responses are consistent with alcoholic responses. The scale assigns a 1-5 weighting to each of the items, with a rating of 5 being considered diagnostic of alcoholism. Questions that were highly discriminating were given a value of two points and others assigned a one-point value as reported. An alcoholic response to questions 8, 19, or 20 is considered diagnostic and is assigned a value of five points [21]. A total score is computed as a sum of item values, their scores are range from 0 to 53.

III. RESULTS

In spite of all measures in application against smoking and all others addictives substances, it found among many research articles that tobacco smoking in Saudi Arabia increased last past

ten years, the range smoking varies from 25-38% of all ages of population.²² In the present work, the results obtained from questionnaires for male students (age: 15-25) at the private and governmental (Gov) secondary schools revealed that the addiction to tobacco among students in the private school was

56.0% (n=200) while that in Gov school was 27.0% (n=200). Moreover, it was noticed from the study performed on all ages of male population that percentage of smokers was 29.0% as shown in table 2 and figure 2.

Table 2: Tobacco addiction among students in the private (n=200), governmental schools (n=200) and population (n=400)

Source	L (2-1)	L-M (4-3)	M-H (7-5)	H-VH (10-8)	Non smokers	smokers
Private	20 (17.8%)	24 (21.4%)	56 (50%)	12 (10.7%)	88 (44.0%)	112 (56.0%)
Gov.	10 (18.5%)	16 (29.6%)	19 (35.18%)	9 (16.6%)	146 (73.0%)	54 (27.0%)
Public	20 (17.24%)	36 (31.03%)	48 (41.37%)	12 (10.34%)	284 (71.0%)	116 (29.0%)

n : sample size; L: Low dependence; L-M: Low to medium dependence; M-H: Medium to high dependence; H-VH: High to very high dependence.

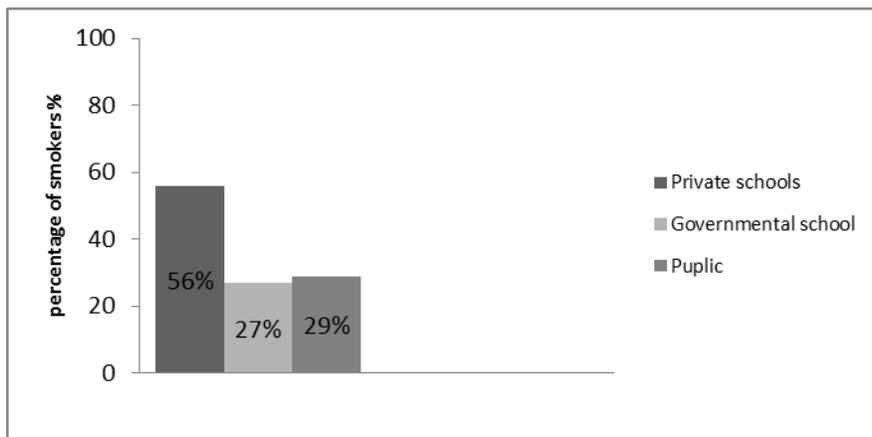


Figure 2: Percentage of smokers in private, governmental schools and public (n=800)

In this study, it was noted from Table 3 that the percentage average of tobacco addiction among the entire sample is 35.25%,

(P < 5%), these results are in accordance with the published data concerning the addiction to tobacco.

Table 3 . Numbers and percentages of different types of addictive substances in all samples (n= 800).

Addictive substances	Private	Gov.	Public	Total number of addicts	Percentages (%)
Nicotine	112	54	116	282	35.25%
Alcohol	0	0	10	10	1.25%
Narcotic	0	2	N A	2	0.25%

The number of high addiction level in private school is more than that of governmental schools which is an important

observation in these result, thus, may related to the behaviors of these institutions (Figure 3).

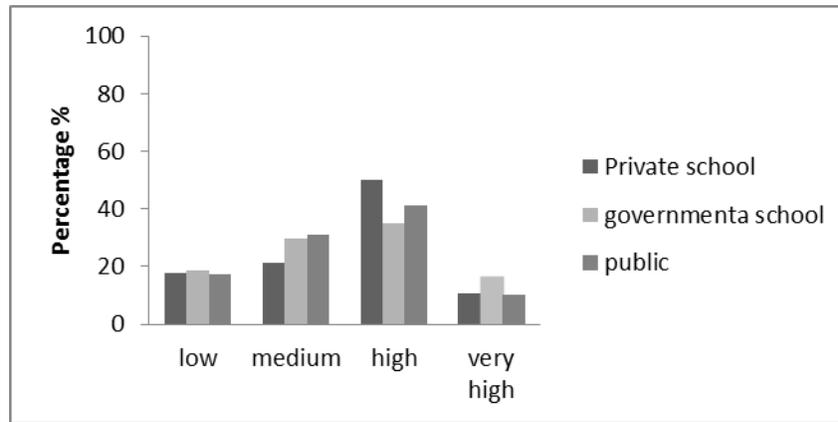


Figure 3. Comparison of nicotine dependency level among private, governmental schools and population (n = 800).

This study is not restricted to schools and population but extended to include Saudi clinical associations such as Kafa (specialized for treatment of tobacco addiction) and Roshd (specialized for treatment of all types of addiction), Al-Amal

hospitals. The data collected from these associations revealed that the most patients undergo from high to very high level of nicotine addiction (Table 4). Patients in these associations are under treatment program for more than one addictive substance.

Table 4. Level of nicotine addiction among patients of Roshd and Kaafa clinical associations.

Source	n	Smokers	L (1-2)	L-M (3-4)	M-H (5-7)	H-VH (8-10)
Roshd	38	38	1	1	2	34
%		100	2.36	2.36	5.26	89.47
Kaafa	76	76	1	16	39	20
%		100	1.31	21.05	51.31	26.31

n : sample size; L: Low dependence; L-M: Low to medium dependence; M-H: Medium to high dependence; H-VH: High to very high dependence.

IV. DISCUSSIONS

The prevalence of current cigarette smoking among U.S. adults aged ≥ 18 years declined slightly during 2005–2010, representing approximately 3 million fewer smokers than would have existed had the prevalence continued at the 2005 level. However, cigarette smoking remains widespread; in 2010, approximately one in five U.S. adults (19.3%) were current smokers [22]. Moreover, year-to-year decreases in smoking prevalence have been observed only sporadically in recent years; for example, a slight decrease occurred from 2006 to 2007 but not from 2007 to 2008. If current patterns continue, smoking prevalence is projected to fall to approximately 17% in 2020. In Canada (2011) 5.8 million of Canadian smokers (19.9%), this was a significant decrease from 24.4% in 2010. A model of

success reduce smoking prevalence was achieved in Turkey whereas from 2008 to 2012, smoking prevalence among Turkish adults dropped from 41% to 27%. This is an outstanding achievement over just four years [23]. In Europe, 22% of women smoke: a high average compared to those for women in Africa, Asia and the Middle East 3–5% [24].

Generally, available data from Arab countries point at major trends in the tobacco epidemic: high prevalence of cigarette smoking among Arab men compared with women; the re-emergence of waterpipe (also known as hookah, narghile, shisha, argihle) smoking as a major tobacco use method, especially among youth and the failure of policy to provide an adequate response to the tobacco epidemic. Table 5 and Figure 4 show the comparison of tobacco addiction in different countries worldwide.

Table 5. Comparison of nicotine addiction between different countries worldwide

Country	Smoking %	Reference
Turkey	27.06	23
Canada	19.90	24
Lebanon	40.00	25
Syria	32.42	26

France	29.10	27
Kuwait	34.40	28
Tunisia	30.40	29
Saudi Arabia	26.50	15

Through analysis of Table 5 and Figure 4, it was observed that the order of smoking % among different countries worldwide is: Lebanon (40.00 %) > Kuwait (34.40 %) > Syria (32.42 %) > Tunisia (30.40 %) > France (29.10) > Turkey (27.06) > Saudi Arabia (26.50) > United States (19.30).

Our study revealed that smoking % in Saudi Arabia as represented by Taif city in western area has increased from 26.50 to reach 35.25% which is considered very high when compared by other countries worldwide.

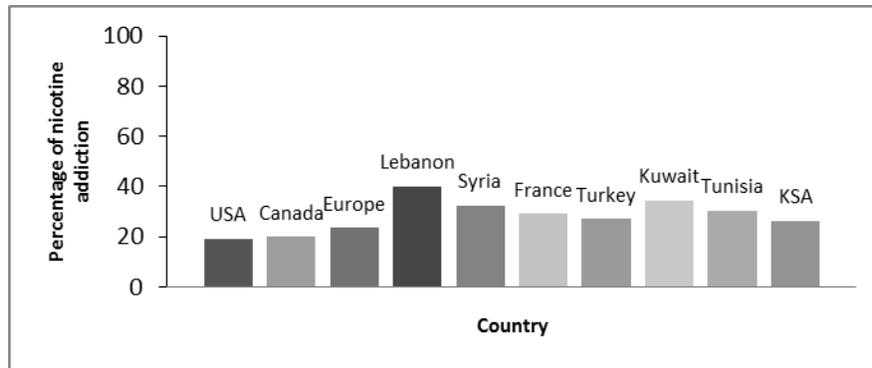


Figure 4: Comparison of nicotine addiction between different countries worldwide.

Alcohol was the most prevalent substance used by youth and it was also the only substance which exhibited increased rates of use between 2002 and 2004. In fact, a cross-sectional study conducted in Al-Amal Hospital in Riyadh in March 1998 of 160 male patients aged 20 years or older found that alcohol was used by 23.75% of the patients [14]. Also in a study of 120 male inpatients in a hospital for treatment of male substance abusers in Dammam in Saudi Arabia's eastern region, it was found that 12.5% of the sample abused alcohol singularly

without abuse of other drugs [15]. In the present study, it was found that percentage of male drinkers in western region of Saudi Arabia as represented by Taif area equal to 1.25% which is very low if compared with percentage available (18%) from the report of WHO Region as shown in Table 6 [24]. This decrease in alcohol consumption may be attributable to increased awareness of population in addition to Islamic rules which prevent the use of alcohols besides the governmental regulations which restricts its use.

Table 6: Characteristics of alcohol consumption in different regions of the world (WHO Region).

World region	Total consumption	% drinkers males	% alcohol dependent
West Africa	4.9	47.0	0.7
North Americas	9.3	73.0	5.1
South Americas	5.1	74.0	3.2
Mediterranean	1.3	18.0	00

WHO Region: Mediterranean countries include: Bahrain, Cyprus, Iran, Jordan, Kuwait, Lebanon, Libyan Arab Jamahiriya, Oman, Qatar, Saudi Arabia, Syria, Tunisia, United Arab Emirates.

A cross-sectional study performed in Al-Amal Hospital in Saudi Arabia revealed that numbers of patients treated from narcotic substances are recorded in Table 7.

The present study represents also percentage of male addicts to other narcotic substances in western region of Saudi Arabia (Taif area) which equal to 0.25%. This percentage is considered very low if compared with other countries worldwide [30]. The most prevalent addictive substances are hashish and qaat. It was

noted also that addictive patients are used more than one substance, which causes a decrease in the opportunity for their cure from these toxics substances.

For this addiction many suggesting treatment were applied to patients, there was no standard program of treatment. Some studies have highlighted aripiprazole as a potential candidate for the treatment of different types of substance abuse disorders such as alcoholism, cocaine, amphetamine and nicotine use [31]. Most of the adduct patients know that addiction is harmful for their health and they know also the dangerous effects for their health. Some of them would like to stop using these substances, but they are scare to declare their addiction.

Table 7. Number of male patients treated from narcotic substances in Al-Amal Hospital from 2007 to 2013.

Year	Age (patient)	Number
2007	20 to 40	74
2008	25 to 50	105
2009	25 to 50	95
2010	25 to 50	87
2011	25 to 50	107
2012	25 to 40	85
2013	20 to 50	75

The most important factors that can decrease addiction must oriented to believes and attitudes of the population. Prophylactic programs also should be based on the principals of Islam due to the health reasons. The religion is the most important factor against addiction, motivation of the population that is not allowed to use these substances according to their believes of the religions. In addition, all the causes such as careless, hopeless, homeless, and workless and behaviors factors must be considered before the application of any treatment program, otherwise the addictive patient became dangerous for himself and for the others.

V. CONCLUSIONS

It can be concluded that the prevalence of addiction among the Saudi population in Taif city is: nicotine; 35.25%, alcohol; 1.25% and narcotics 0.25%. Moreover, the study illustrated that the smoking % for male population of all ages was 29.0% while that male secondary school students are 56.0% for private school and 27.0% for governmental school.

Imitating others is one of the most common risk factors for smoking while adherence to religious values is the most common protective factor. Most people know the hazards of addiction and have the motivation to stop, but they need encouragement and help. The findings of this article highlighted the importance of initiating programs for treating nicotine dependence and other addictive substances. The most important factors that can decrease addiction are: training community providers to deliver research-based treatments, working to engage the medical community so that they can be the first line of defense in detecting potential drug abuse and in referring patients to addiction treatment as needed, providing opportunities for information sharing and research collaboration, all programs for treatment of addiction must include an important aspect of socio-economic and an occupation activity (work) to help these patients, limitations and controlling the sell points of smoking market, awareness and controlling programs should be implemented for students especially in the private schools, implantation of severe penalty for people which not respect regulations.

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CONFLICTS OF INTEREST

The authors declare that they have no competing interests.

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