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# Effect of Educational Program on the Knowledge, Attitude and Practices of Preparatory School Students Regarding Drug Addiction

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***Abstract:*** **Drug addiction or substances abuse is a worldwide public health crisis. It is one of the important problem of the human society which increasing day by day. This increase becomes dominant in adolescents and young age students. Prevention of addiction could be applied through providing health educational programs to adolescents and young age students. Aim of the study: Determine the effect of educational program on the knowledge, attitudes and practices of students of preparatory schools about prevention of drug addiction. Subjects and Method: Study design:-a quasi-experimental research design was used. Study setting: The study was conducted at two governmental preparatory male schools which were selected randomly as one from the east educational Tanta zone and the other from the west educational Tanta zone. Subjects: The total number of the study subjects was 300 male students chosen by allocation method from the previous settings. Tools: Two tools were used by the researcher to obtain the necessary data. Tool I: Socio-demographic interview questionnaire of students and their family history about drug abuse. Tool II: knowledge, attitude and practices assessment questionnaire: it composed of three parts. *Part (1)*: students' knowledge about drug addiction. *Part (2)*: student's attitude toward drug addiction. *Part (3)*: students' practices regarding drug addiction. Results: The result of this study showed that the majority (98.7 %) of the studied students had good knowledge level immediately after program implementation while they represent 86.7% after 2 months of the program. All the studied students had positive attitudes regarding drug addiction after program implementation. As well, the majority (90.5 %) of the studied students had satisfied practices immediately after program implementation toward drug addiction. There was highly positive significant correlation between the total knowledge score and the total practice score of the studied students. Conclusion: It can be concluded that the educational program was effective in improving the studied students' knowledge, attitudes and practices regarding drug addiction. Recommendations: Health educational programs should be directed to adolescents and young age students to increase their awareness regarding drug addiction. School health programs should integrate specific life skill training program in their curriculums to help students to combat the problem of drug addiction through all different educational stages. Mass media, friends, schools and families should assume their roles in protecting students and young adolescents from addiction. Health educational campaigns concerning drug addiction should be directed to vulnerable groups through collaboration between different sectors. Laws against drug abuse and drug trafficking should be strictly applied and announced to all populations.**

***Keywords:*** **Drug addiction, Substance abuse, Educational program, School students.**

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## 1. INTRODUCTION

Drug addiction is one of the major problems in developed and developing countries and at all of the socio-economic classes. [1,2]. It has been threatening our society. So, addiction and substances abuse has become a worldwide public health crisis. The youth are the most vulnerable age group who are at higher risk of drug addiction. Recent years have experienced a drastic rise in drug abuse among university and school students. Currently, there are information shows that substance abuse is increasing in adolescents and young age students. It is one of the today's gravest social harms that not only endangers the health of both individual and community but induces the mental and moral degeneration [3-6].

Adolescence is a transitional stage of physical and mental human development with substantial risk for initiating substance abuse. Reproductive and Child Health Program mentions adolescents as being between 10-19 years of age. Experimentation with addictive substances begins in adolescence as they are cognitively immature and vulnerable to social influences. Recent reports have documented a global increase in availability and consumption of addictive drugs and a pattern of vulnerability among those ages. Earlier initiation of drug use is found to have more impairment, crime, and difficult to quit. It is usually associated with a poor prognosis and a lifelong pattern of deceit and irresponsible behavior. So, Addiction of adolescents and young ages is a wake-up call for most governments [2,7-9].

Drug abuse is an international problem, which affects almost every country in the world, In India, the results of a study 2016, found that 46.36 % of the adolescents of the slum areas used substance like tobacco smoking, alcohol, and marijuana [9]. The results of another study about substance abuse among adolescents in Mangalore, 2015, showed that 8.60% of adolescent students have tried some substance abuse [10]. United States survey report 2014 indicated that about 14% of adolescents reported substance use at least once in the past month and 7% reported daily use. The same survey gathered data on marijuana use, as well, and found that about one in five (21%) of adolescents reported using marijuana in the past month, and about 6% reported using it daily [11].

In Egypt, drug addiction is a major problem. The last National Survey report, 2013, stated that 9.6% of Egyptians used drugs at least once during their lives [12]. On the other hand the result of a study, 2013, in Egypt, found that 20% of Egyptian male students have used drugs and among them 25% have continued to do so [13]. According to the report of the Egyptian Ministry of Health 2012, the prevalence was rapidly increase in 15 years group from 6.4% to 30 % and the age of drug addiction went down to 10 years old and also highest percent of drug use present in Cairo especially among teenage [14].

Drug addiction is a result of frequent drug use or recreational and psychoactive substance use. With respect to its high prevalence and difficulty of treatment, it is necessary to identify the risk factors contributing to this bad habit in the population. External and internal factors are two main factors that contribute to the like hood of substance abuse. External risky factors which more likely to drug abuse including that many of them engaged in drug abuse out of frustration, poverty, lack of parental supervision, exposure to drug, media influence and peer pressure. Internal factors that are within the child or personality based are low self-esteem, poor social skills, stress, attitude about drug, mental disorder and many others [15, 16]. Many consequences can result from drug abuse as: aggressive crime behaviors, unwanted pregnancy, suicide, aggression, accident, personality or psychological disorders, poor academic performance, cognitive functioning problems and reduction in life span[9].

Community health nurse have an important role in drug addiction prevention programs through providing health education to students, peers and their parents about drug addiction. These programs help in development of the individual's skills to protect them from being influenced to use drugs. This include decision-making skills, proper nutrition, self-efficacy, exercise skills, stress management, refusal skills against any pressure and perception of drug risks. The nurse has also an important role in referral to the appropriate agencies like social services, drug service and supportive institutions. A drug abuse prevention program could been developed with cooperation from school health nurse, students, their parents and teachers which encourage students to learn and practice drug abuse prevention methods, to gain and maintain appropriate knowledge, attitudes and to develop essential skills about prevention of drug abuse [16,17].

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## 2. AIM OF THE STUDY

Determine the effects of educational program on the knowledge, attitudes and practices of students of preparatory schools about the prevention of drug addiction.

**Research hypothesis:** The total knowledge and practices mean score about drug addiction of preparatory schools' students will be improved and the students will exhibit positive attitude regarding drug addiction after implementation of the educational program.

## 3. SUBJECTS AND METHOD

**Research design:** A quasi- experimental research design was used in this study.

**Setting:** The study was conducted in two governmental preparatory males' schools at Tanta city, Egypt, which were selected randomly as one from the east educational Tanta zone and the other from west educational Tanta zone.

**Subjects:** The total number of the study subjects was 300 male students who were chosen by allocation method from the previous schools to participate in the study. They were distributed on 6 classes from each school including grade I and II. The mean students number of each class was (50) students. Grade III was excluded because higher absenteeism rate during the time of data collection.

**Tools of the study:** - two tools were used to collect the necessary data for this study:-

***Tool (1)*: Socio-demographic interview questionnaire of students and their family history*:** it was developed by the researcher to obtain the necessary data from the selected students. It included two parts as the following:

***Part (1)*** : ***Socio-demographic data of the students*** such as : age , grade, residence, birth order, level of parents' education and their occupation, family size, number of rooms, crowding index, person who pay the school expenses, family income, live with whom, type of family relationship and how to spend free time (recreational activity) .

***Part (2)*: *Family history of the students:*** such as: smoking of family members, using of family members of drugs (person, type of drug used, onset, duration, and stop it) and method of parents' dealing with the students.

***Tool (II)*: knowledge, attitude and practices assessment questionnaire sheet*:*** It was used to assess the students' knowledge, attitude and practices about drug addiction. It included the following parts:

***Part (1): Students knowledge***: This part was developed by the researcher after reviewing the related literatures. It includes questions about students' knowledge about addictive drugs e.g.: action of addictive drugs, names of drugs, types of drugs that cause addiction, prevalence of drugs, definition and types of natural narcotic substances, causes of drug addiction , signs and symptoms of addiction, short and long term complications of drug abuse and addiction, and sources of students' knowledge.

**Scoring system:**

The total number of knowledge questions were (19) questions. Each question was given a score according to the students' answer as following: correct complete response was scored (2), incomplete response was scored (1) and the incorrect response and no answer or don't know was scored (zero).

The total score of knowledge level was classified into:

- Poor knowledge < 50 % of the total knowledge score.
- Fair knowledge 50 - 60 % of the total knowledge score.
- Good knowledge > 60 % of the total knowledge score.

***Part (2):* Practices of students questionnaire tool**: which was developed by (Geramian N, and et al, (2014)[18], and modified by the researcher to collect the data of this part. The total number of questions in this part was 15 questions. It included the following items about practices toward drug addiction: previous or current use of any drugs, duration of drug use, type of drug used, frequency of its use, its amount, causes for use, places of getting addictive substances places for using it, resistance behaviors, and preventive practices used by the students.

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**Scoring system:**

The students answered each practice question by yes or no. Yes answer had scored (1) and no answer had scored (0). The total score of (yes) answer indicated unsatisfied practices except question number (10 and 14) which yes answer for these two questions indicated satisfied practices and the total score of (no) answer indicated satisfied practices. The score was reversed for the two mentioned questions.

***Part (3):*** **Students' attitude questionnaire tool**: which was developed by anti-addiction and dealing fund (2013) [19]. It was modified and used by the researcher to collect the data of this part. The total number of attitude questions were (23) questions. Positive attitude questions were (16) and negative attitude questions were (7) questions. It included the following items for example:- students' view regarding drug addiction and smoking, desire for abuse, communication with others, ability to take self-decisions, share decisions with others, participation to learn how to prevent addiction, and view of the community toward addictive persons, ability to resist any invitation to smoking or addiction and participation in drug addiction prevention programs.

**Scoring system:**

Five categories of Likert scale was used to assess the student's attitude. The score ranged from yes (5), to some extent (4), no (3), not sure (2) and don't know (1) for positive attitude statement. For negative attitude statements, the score ranged from yes (1), to some extent (2), no (3), not sure (4) and don't know (5). The total score of student's attitudes were ranged from 23 to 115.

The total score of attitude was classified into:

- Positive attitude > 60 % of the total attitude score.
- Negative attitude ≤ 60 of the total attitude score.

**Methods**

The process of this study was carried out as following:-

**1- Obtaining approvals.**

An official permission to conduct the study was obtained from the dean of the Faculty of Nursing to the director of educational administration in Tanta city and then to the directors of east & west educational sectors then to the mangers of the selected schools.

**2- Ethical considerations**

- Ethical committee approval was obtained before conducting the study.
- Directors of the selected schools were informed about the objective of the study.
- Every student was informed about the purpose, nature and benefits of the study at the beginning of the interview and they had the right to withdraw from the study at any time.
- Informal consent was obtained from the studied students to participate in the study after explanation of its objectives.
- Confidentiality and privacy was put into consideration regarding the collected data.

**3- Developing the tools.**

- Tool ( I ) and part one of tool (II) was developed by the researcher and part two and three of the tool (II) were adopted and modified by the researcher based on literatures review then translated into simple language.
- The study tools were tested for content **validity** by a jury of five experts in the field of Community Health. (Three professors of Public Health at the Faculty of Medicine and two professors of Community Health Nursing at the Faculty of Nursing, Tanta University).
- Each of these experts gave an average total percentage of their acceptance of the study tool. The acceptance varied from 85-95 %. The mean test validity was 92 %.

- The study tools were assessed for its **reliability** using cronbachs alpha test and re-test through distributing tools to 30 students (pilot study) two times separated by two weeks. The reliability statistics of tool I was (0.912) and it was (0.794) for tool II. As well; it was (0.873) for the entire study questionnaire.

**4- A pilot study**

- A pilot study was carried out on 30 students to test the tools for its clarity and applicability and to determine the length of time needed to collect the data from each student. These students were excluded from the actual study.
- The time needed for every student to fill the sheet ranged from 30-40 minutes.
- The necessary modifications and corrections were done as restating of some questions and deleting others.

**5- The actual study**

- Initial meetings with the directors and teachers of each school were done to detect the suitable time for data collection.
- Collection of data continued through a period of about **three** months from October 2016 to December 2017.
- The researcher met the students in their classes in each school in the free class time during the school day according to date and time specified by the directors.
- The researcher mostly divided the students in one class into two groups; each group consisted of 20-25 students. The total number of groups in the two selected schools was about 12 groups.
- The researcher was available 3 days / week to collect the data and to implement the educational program. The average number of sessions / day was two sessions. The duration of each session was ranged from 45 - 60 minutes.
- Study tools were administered individually to each student to complete it by himself with the attendance of the researcher to offer guidance and clarifications when needed. Each class took about 60 minutes to fill the questioner sheet where the sheet was distributed to the entire class students or to each group according to the availability of the students.
- The researcher designed the educational intervention programs for prevention of the drug addiction.

**Developing the educational program:** It included the following phases:-

**a) (Assessment phase):** during this phase, knowledge; attitude and practices of the students toward addiction were assessed through distribution of a questionnaire sheet to them for collecting the necessary data.

**b) Planning phase**: an educational program was planned according to student's needs based on literatures review. **The goal** of the program was stated. The goal was to enable the preparatory male students to gain knowledge and change their attitudes and practices for helping them in early prevention of drug addiction in their life.

**c) Implementation phase**: The program consisted of four sessions provided for the students in each class / group. The total number of the sessions given to the students in the two schools was 48 sessions.

**-The four sessions were implemented as following:**

**Session I: Program orientation and students' expectation:** Duration: about 45 minutes

The aim of this session was to test student's expectation about the educational program and to increase their orientation about the importance of the program, its sessions and their expectations from each session.

***Specific objectives:*** The objectives of this session were to enable the students to recognize and identify the important of the program.

**Session II: Definition of addiction, risk factors, causes, types and stages of addiction process:** Duration: 60 minutes.

The aim of this session was to enable the students to identify the meaning of addiction and related definitions, cause, types and risk factors of drug addiction and stages of addiction process.

***Specific objectives***: The objectives of this session were to enable the students to: define addictive substance and related definition, its types, prevalence of smoking and drug addiction and stages of addiction.

**Session III: Signs and symptoms and negative effects of drug addiction:** Duration: 45 -60 minutes.

The aim of this session was to enable the students to be oriented about the signs and symptoms and negative effects of drug addiction.

***Specific objectives:*** The objectives of this session were to enable the students to: enumerate the characteristics of addictive persons and mention signs, symptoms and negative effect of different of addictive substance.

**Session IV: Preventive methods of addiction and basic rules and stages of treatment.** Duration: 60 minutes

The aim of this session was to educate the student's how to protect themselves from addiction through increasing their awareness about preventive methods of addiction and treatment process.

***Specific objectives:*** The objectives of this session were to enable the students to: Identify the methods of protection from addiction and different stages of treatment.

**d) Selecting teaching methods & teaching aids used during the sessions:**

- **Methods of teaching** that were used included:- lectures, group discussion, brain storming and role modeling.
- **Teaching aids** used in the study included: power point presentation, videos, stories and handouts.
- **A handout booklet**: was prepared by the researcher based on literatures review. Booklet was given to the students to refresh their knowledge continuously and to act as a guidance for them for preventing drug addiction. This handout booklet contained information about meaning of addiction and related definitions, false concepts about addiction, causes and risk factors of addiction, types of common addictive substance, signs and symptoms of addictive persons, consequences of addiction and using social resistance skills for prevention of addiction.

**e) Evaluation phase**:

The aim of this phase was to evaluate the outcome of the educational intervention program. The evaluation was conducted to the study sample three times as following:

1- **The first time**: before implementation of the health education intervention using tool (I) and tool (II).

2- **The Second time**: immediately after implementation of the health education intervention using tool II part (1, 2 and 3).

3- **The Third time:** 2 months after implementation of the health education program using tool II part (1, 2 and 3)

**Statistical analysis:**

The collected data were organized, tabulated and statistically analyzed using SPSS software statistical computer package version 23. For quantitative data, the range, mean and standard deviation were calculated. For qualitative data, comparison was done using Chi-square test ($\chi^2$). For comparison between means of two variables, paired sample t-test was used. For comparison between more than two means, the F-value of analysis of variance (ANOVA) was calculated. Correlation between variables was evaluated using Pearson and Spearman's correlation coefficient r. A significance was adopted at $P<0.05$ for interpretation of results of tests of significance [(*)].

## 4. RESULTS

The results of this study were demonstrated as socio-demographic characteristics of the studied students, family history about smoking & substance abuse, distribution of the studied students in relation to their total knowledge level, distribution of addictive students in relation to their total practices level and distribution of addictive students in relation to their attitude level. The correlations included: correlation between socio-demographic characteristics of the studied students and their mean score of their total knowledge, total attitude level and total practice. As well as correlation between the total knowledge, total attitudes and total practices mean scores of the studied students.

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**Table 1**: **Presents the distribution of the studied groups according to their socio-demographic characteristics.** It shows that, the age of the total studied students ranged from 12 – 16 years. The age of slightly less than one half of them (48.7%) was 13 years to less than 14 years. And the age of more than one quarter (26.7% ) of them was 12 years to less than 13 years and 23 % of them aged 14 to 15 years or more with the mean age 13.0± 0.763 years. As regard the educational grad, one half of the studied students were from the preparatory grad 1 and the other half were from preparatory grad 2. Regarding place of residence, the majority (98.7%) of the studied students were from urban areas. As regard the birth order of the studied students, nearly one third (31.3%) of them were the first child and 30 % of the studied students were the second child and more than one quarter (26%) of them were the 3 rd child in their family. Concerning fathers' education of the studied students, 39.3 % & 32 % of them had university / postgraduate education or secondary education respectively. As regard the students' mother's education, more than one third of them had secondary education or university / post graduate education (36.7 % & 35.3 %) respectively. Regarding parents' occupation, the majority (93.3%) of fathers were working. On the other hand, 60.7% of the students' mothers were house-waifs, and more than one third (35.3%) of them were working. Concerning to crowding index level, more than one half of the studied students (55.3 %) had crowding index level from 0 - < 2. And more than one third of them (36 %) had 2- < 3 crowding index. The crowding index level ranged from 0 .2 – 5. 0 with a mean crowding index 1.85 ± 0.63 levels.

**Table (1): Distribution of studied students according to their socio-demographic characteristics**

| Categories | The studied students (n=300) | |
|---|---|---|
| | N | % |
| **Age (in years)** | | |
| ▪ 12 years - | 80 | **26.7** |
| ▪ 13 years - | 146 | **48.7** |
| ▪ 14 years - | 69 | 23.0 |
| ▪ ≥15 years | 5 | 1.7 |
| **Range** **Mean ± SD** | **(12-16)** **13.00±0.763** | |
| **Educational Grad** | | |
| ▪ Prep 1 | 150 | 50.0 |
| ▪ Prep 2 | 150 | 50.0 |
| **Residence** | | |
| ▪ Rural | 4 | 1.3 |
| ▪ Urban | 296 | **98.7** |
| **Birth order** | | |
| ▪ 1st | 94 | **31.3** |
| ▪ 2nd | 90 | **30.0** |
| ▪ 3rd | 78 | 26.0 |
| ▪ ≥4$^{th}$ | 38 | 12.7 |
| **Father's education** | | |
| ▪ Illiterate | 11 | 3.7 |
| ▪ Basic education/read and write | 75 | 25.0 |
| ▪ Secondary education | 96 | **32.0** |
| ▪ University/Postgraduate | 118 | **39.3** |
| **Mother's education** | | |
| ▪ Illiterate | 19 | 6.3 |
| ▪ Basic education/read and write | 65 | 21.7 |
| ▪ Secondary education | 110 | **36.7** |
| ▪ University/Postgraduate | 106 | **35.3** |
| **Father's occupation** | | |
| ▪ Not work | 3 | 1.0 |

| | | |
|---|---|---|
| ▪ Work | 280 | **93.3** |
| ▪ Died | 17 | 5.7 |
| **Mother's occupation** | | |
| ▪ Housewife | 182 | **60.7** |
| ▪ Work | 106 | **35.3** |
| ▪ Died | 12 | 4.0 |
| **Crowding index level** | | |
| ▪ 0 - <2 | 166 | 55.3 |
| ▪ 2 - <3 | 108 | 36.0 |
| ▪ ≥ 3 | 26 | 8.7 |
| Range | **(0.2-5.0)** | |
| Mean± SD | **1.85±0.63** | |

**Table (2): Illustrates distribution of the studied students according to their family history about smoking & substance abuse.** This table shows that less than one half (47%) of the students' fathers were smokers and about one half (49.7%) of their family members smoked cigarette, while 43.3 % of them were non smokers. As regard history of using analgesic in students' family members, the majority (81.3%) of the students' family member had no family history of using analgesic. Also, the majority (87.3 %) of parents of the studied students were caring with their sons.

**Table (2): Distribution of the studied students according to their family history about smoking and substance abuse**

| **Pupil family history** | **The studied students (n=300)** | |
|---|---|---|
| | **N** | **%** |
| **A family smoker member** | | |
| ▪ Non-smoker | 130 | **43.3** |
| ▪ Father | 141 | **47.0** |
| ▪ Old brother | 14 | 4.7 |
| ▪ Other | 15 | 5.0 |
| **Type of smoking for family member** | | |
| ▪ Non-smoker | 130 | **43.3** |
| ▪ Cigarettes | 149 | **49.7** |
| ▪ Shisha | 19 | 6.3 |
| ▪ Cigarettes and Shisha | 2 | 0.7 |
| **History of using analgesic in Family members** | | |
| ▪ None | 244 | **81.3** |
| ▪ Father | 17 | 5.7 |
| ▪ Mother | 22 | 7.3 |
| ▪ One of brothers | 5 | 1.7 |
| ▪ A relative | 12 | 4.0 |
| **Duration of using analgesic? (in weeks)** | | |
| **Range** | **(0-15)** | |
| **Mean ± SD** | **0.51±1.482** | |
| **Try to stop analgesic for family member** | | |
| ▪ None | 244 | **81.3** |
| ▪ Yes | 41 | 13.7 |
| ▪ No | 15 | 5.0 |

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| | | |
|---|---|---|
| **Method of parents dealing with their sons** | | |
| ▪ Care | 262 | **87.3** |
| ▪ Prefer one of brother | 12 | 4.0 |
| ▪ Ignoring requests | 12 | 4.0 |
| ▪ Treat harshly | 12 | 4.0 |
| ▪ Other | 2 | 0.7 |

**Table (3) and figure (1): Represents distribution of the studied students in relation to their total knowledge level throughout the study period.** The table shows that the majority (98.7% ) of the studied students had good knowledge level immediately after implementation of the educational program in comparison with 0.3% preprogram, while after 2 months, the percentage of students who had good knowledge were slightly decreased to 86.7%. The table also shows that there was an obvious significant improvement in the mean score of knowledge of the studied students about addiction immediately after program intervention. The mean scores of the students' knowledge increased from (8.03±30976) pre intervention to (27.99±2.731) immediately post intervention. The mean score was (24.± 4.225) two months after program implementation. This difference was statistically significant (p= 0, 00).

**Table (3): Distribution of the studied students in relation to their total knowledge level throughout the study period**

| **Total Knowledge level** | **The studied students (n=300)** | | | | | | |
|---|---|---|---|---|---|---|---|
| | **Pre** | | **Immediate** | | **Post 2 months** | | $\chi^2$ **P** |
| | **N** | **%** | **N** | **%** | **N** | **%** | |
| Poor (< 16 ) | 289 | 96.3 | 0 | 0.0 | 7 | 2.3 | |
| Fair (16-19.2 ) | 10 | 3.3 | 4 | .1.3 | 33 | 11.0 | **859.91 0.00*** |
| Good ( >19.2 ) | 1 | **0.3** | 296 | **98.7** | 260 | **86.7** | |
| **Range Mean ± SD** | **(0-20) 8.03±3.976** | | **(18-32) 27.99±2.731** | | **(12-32) 24.22±4.225** | | **F=246.85 P=0.00*** |

* Significant at P < 0.05

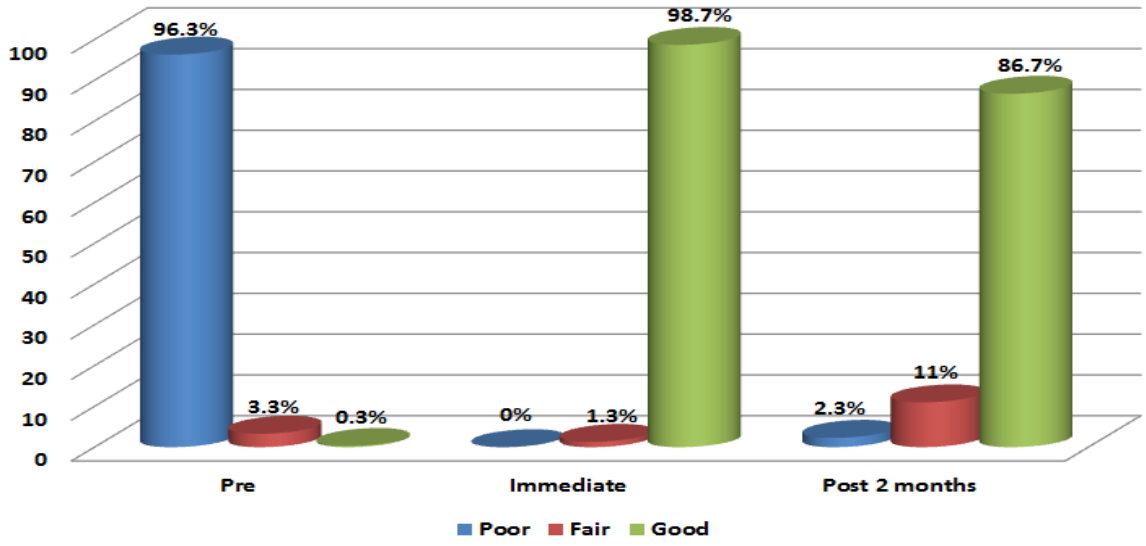


**Figure (1): Distribution of total knowledge level throughout the study period among the studied students**

**Table (4) and figure (2): Represents distribution of the studied addictive students in relation to their total practices level throughout the study period.** It shows that there was statistical significant improvement in satisfied practices of the studied addictive students in relation to total practices level from (41.9%) pre intervention to (90.5%) immediately post program intervention, as well post 2 months of program intervention (52%) where (p=0.022).

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**Table (4): Distribution of the studied addictive students in relation to their total practices level throughout the study period**

| Total practices level | The studied addicted students | | | | | | $\chi^2$ P |
|---|---|---|---|---|---|---|---|
| | Pre (n=31) | | Immediate (n=21) | | Post 2 Months (n=25) | | |
| | N | % | N | % | N | % | |
| ▪ Unsatisfied (< 4.2 ) | 18 | 58.1 | 2 | 9.5 | 12 | 48.0 | 4.720 |
| ▪ Satisfied (≥ 4.2 ) | 13 | 41.9 | 19 | **90.5** | 13 | **52.0** | 0.022* |
| **Range** | **(0-7)** | | **(0-7)** | | **(0-6)** | | **F=10.143** |
| **Mean ± SD** | **1.50±1.382** | | **2.14±1.641** | | **2.04±1.522** | | **P=0.00*** |

* Significant at P < 0.05

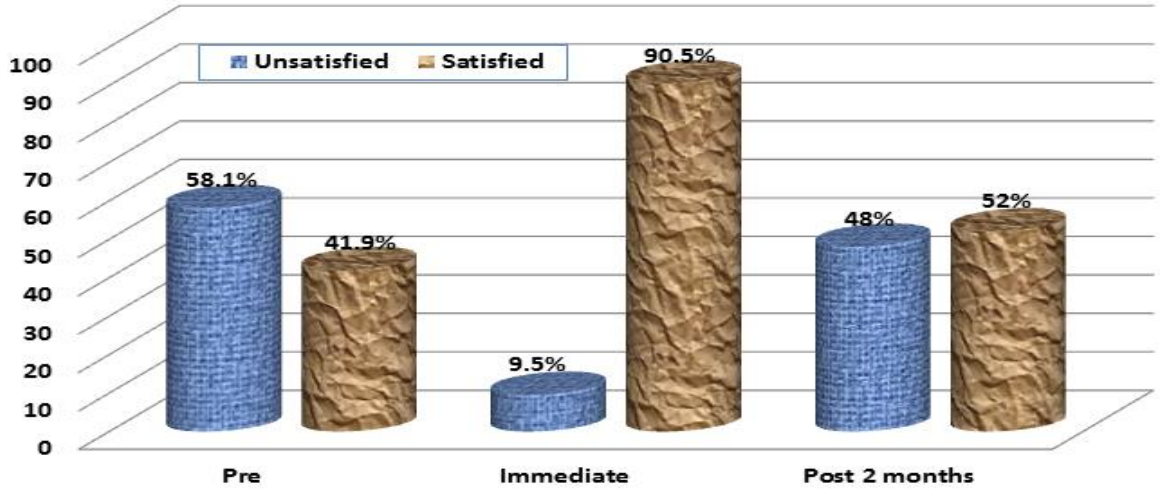


**Figure (2): Distribution of the studied addictive students in relation to their total practices level throughout the study period**

**Table (5)** and (**Figure 3): Represents distribution of the studied students in relation to their total attitude level throughout the study period.** The table shows that there was significant improvement in the positive attitude of studied students toward addiction from pre intervention, immediately and 2 months after the program intervention (p=0.00). The mean score of the students' attitude increased from **(75.35± 13.486)** pre intervention to **(97.44±3.577)** immediately post intervention and became **(94.77±4.701)** two months after the program intervention. This difference was statistically significant where (p=0.00).

**Table (5): Distribution of the studied students in relation to their total attitude level throughout the study period**

| Total attitude level | The studied students (n=300) | | | | | | $\chi^2$ P |
|---|---|---|---|---|---|---|---|
| | Pre | | Immediate | | Post 2 months | | |
| | N | % | N | % | N | % | |
| ▪ Negative attitude ≤ 60% | 164 | 54.7 | 0 | 0.0 | 2 | 0.7 | 392.55 |
| ▪ Positive attitude > 60% | 136 | 45.3 | 300 | 100.0 | 298 | 99.3 | 0.00* |
| Range | (39-101) | | (86-105) | | (74-105) | | F=603.50 |
| Mean ± SD | 75.35±13.486 | | 97.44±3.577 | | 94.77±4.710 | | P=0.00* |

Negative attitude ≤ 78.2 Positive attitude> 78.2 * Significant at P < 0.05

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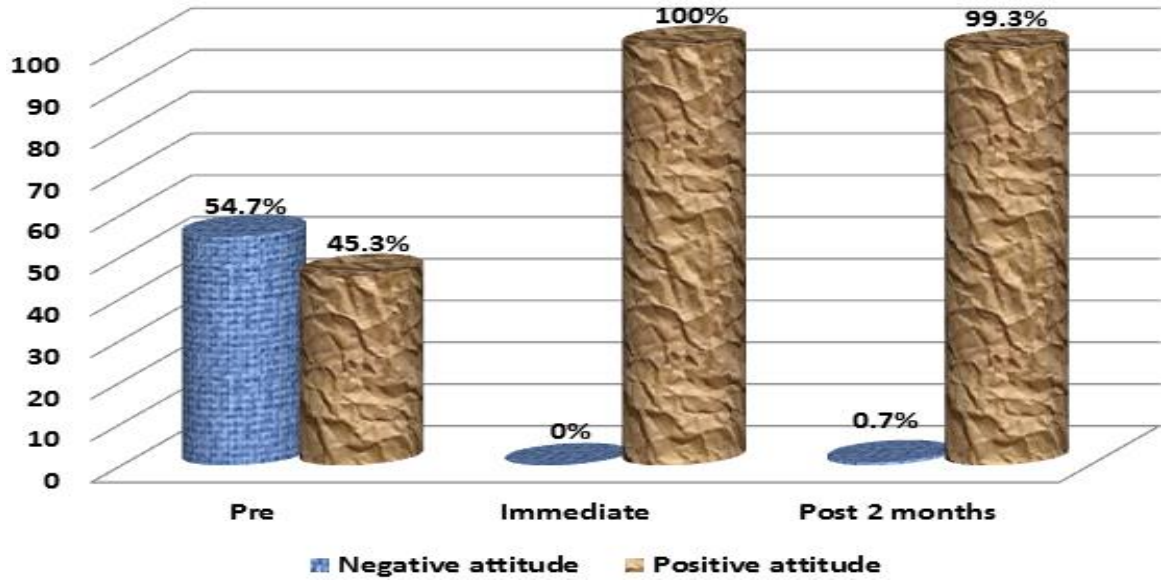


**Figure (3): Distribution of total attitude level throughout the study period among the studied students**

**Table (6): Represents the correlation between socio-demographic characteristics of the studied students and the mean score of their total knowledge.** It revealed that there was highly significant positive correlation between the total knowledge score of the studied students preprogram intervention and the students' age and educational grad where (p = 0.00 & r =0.247 and p = 0.0 & r = 0.208 respectively). While there was negative significant correlation between students' total knowledge score and their fathers' occupation pre program intervention (p = 0.046 & r = - 0.115). As well there was highly significant negative correlation pre program intervention in relation to students' crowding index where (p = 0.00 & r = -204).

**Table (6): Correlation between socio-demographic characteristics of the studied students and the mean score of their total knowledge**

| Socio-demographic data | Total knowledge score | | | | | |
|---|---|---|---|---|---|---|
| | Pre | | Immediate | | Post 2 months | |
| | r | P | r | P | r | P |
| **age** | 0.247 | **0.00**** | -0.093 | 0.108 | -0.037 | 0.518 |
| **Educational Grad** | 0.208 | **0.00**** | -0.088 | 0.130 | -0.051 | 0.379 |
| **Residence** | -0.105 | 0.069 | -0.015 | 0.802 | -0.047 | 0.413 |
| **Birth order** | 0.011 | 0.851 | 0.005 | 0.935 | -0.013 | 0.826 |
| **Father's education** | 0.051 | 0.380 | 0.000 | 0.997 | -0.009 | 0.876 |
| **Mother's education** | 0.016 | 0.779 | 0.041 | 0.480 | 0.036 | 0.540 |
| **Father's occupation** | **-0.115** | **0.046*** | -0.005 | 0.934 | 0.011 | 0.850 |
| **Mother's occupation** | -0.037 | 0.527 | -0.102 | 0.077 | -0.021 | 0.716 |
| **Crowding index** | **-0.204** | **0.00**** | -0.006 | 0.914 | -0.017 | 0.767 |

** Correlation is highly significant at level P < 0.01.
*Correlation is significant at level p < 0.05

**Table (7) represents the correlation between socio-demographic characteristics of the studied students and their mean score of their total practice.** It shows that there was a highly positive significant correlation between students' socio-demographic characteristics and their practices mean score in relation to their age pre program intervention (p = 0.006 & r = 0.158). As well as there was highly positive significant correlation between educational grade and the students' total practices score pre program intervention where (p = 0.00 & r = 0.205) and it was positive significant correlation immediately and 2 months after program intervention where (p=0.036 & r= 0.121 and p = 0.026, r = 0.128 respectively).

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While there was positive significant correlation in relation to birth order pre program intervention and immediately post intervention (p = 0.012 & r = 0.145 and p = 0.016 & r = 0.139 respectively). On the other hand, there was negative significant correlation between rural residence of the studied students' and their total practices score pre program intervention where (p = 0.025 & r = - 0.129) and there was positive significant correlation between urban residence and the total practice score of the studied students pre program intervention (p = 0.025 & r = 0.129).

**Table (7): Correlation between socio-demographic characteristics of the studied students and the mean score of their total practice**

| Socio-demographic Characteristics | Total practice score | | | | | |
|---|---|---|---|---|---|---|
| | Pre | | Immediate | | Post 2 months | |
| | r | P | r | P | r | P |
| **Age** | **0.158** | **0.006**** | 0.102 | 0.076 | 0.083 | 0.153 |
| **Educational Grad** | **0.205** | **0.00**** | **0.121** | **0.036*** | **0.128** | **0.026*** |
| **Residence**<br>▪ Rural<br>▪ Urban | **-0.129**<br>**0.129** | **0.025*** | -0.086<br>0.086 | 0.139 | -0.078<br>-0.078 | 0.179 |
| **Birth order** | **0.145** | **0.012*** | **0.139** | **0.016*** | 0.089 | 0.124 |
| **Father's education** | -0.060 | 0.298 | 0.010 | 0.868 | 0.001 | 0.980 |
| **Mother's education** | -0.058 | 0.320 | 0.026 | 0.652 | -0.010 | 0.857 |
| **Father's occupation** | 0.017 | 0.775 | 0.029 | 0.614 | 0.001 | 0.993 |
| **Mother's occupation** | -0.014 | 0.813 | 0.013 | 0.818 | 0.060 | 0.300 |
| **Crowding index** | -0.102 | 0.079 | -0.001 | 0.980 | 0.045 | 0.436 |

* Correlation is significant at level P < 0.05** Correlation is significant at level P < 0.01.

**Table (8): Represents correlation between socio-demographic characteristics of the studied students and the mean score of their total attitude.** It shows that there was positive significant correlation between the educational grad of the studied students and their total attitude score pre program intervention where (p = 0.041 & r = 0.118), while there was negative significant correlation between them immediately post program intervention (p = 0.022 & r = - 0.132).

On the other hand, it was observed that there was significant negative correlation between students' birth order and their total attitude score 2 months after program intervention (p = 0.049 & r = - 0.114). As well as there was negative significant correlation between crowding index and the total attitude score of the studied students pre program intervention (p = 0.044 & r = -0.116).

**Table (8): Correlation between socio-demographic characteristics of the studied students and the mean score of their total attitude**

| Socio-demographic characteristics | Total attitude score | | | | | |
|---|---|---|---|---|---|---|
| | Pre | | Immediate | | Post 2 months | |
| | r | P | r | P | r | P |
| **age** | 0.057 | 0.322 | -0.090 | 0.118 | -0.003 | 0.964 |
| **Educational Grad** | **0.118** | **0.041*** | **-0.132** | **0.022*** | 0.041 | 0.479 |
| **Residence** | 0.100 | 0.084 | 0.070 | 0.224 | -0.030 | 0.607 |
| **Birth order** | -0.022 | 0.703 | 0.021 | 0.717 | **-0.114** | **0.049*** |
| **Father education** | 0.092 | 0.111 | -0.003 | 0.964 | -0.041 | 0.476 |
| **Mother education** | 0.077 | 0.183 | 0.027 | 0.635 | -0.054 | 0.351 |
| **Father occupation** | 0.047 | 0.417 | 0.076 | 0.186 | -0.044 | 0.444 |
| **Mother occupation** | -0.068 | 0.237 | 0.009 | 0.873 | 0.043 | 0.457 |
| **Crowding index** | **-0.116** | **0.044*** | 0.035 | 0.551 | -0.059 | 0.310 |

* Correlation is significant at level P < 0.05.

**Table (9): Correlation between the total knowledge, total attitude and total practice mean scores of the studied students.** It shows that there was a highly positive significant correlation between the total knowledge score and total practices score of the studied students pre program intervention, where (p = 0.00 & r = 0.241). On the other hand, there was highly positive significant correlation between total knowledge score Vs total attitude score and the total practice score of the studied students post immediately and two months after program intervention ( p= 0.003 & r =0.169 and p= 0.004 & r =0.165).

**Table (9): Correlation between the total knowledge, total attitudes and total practices mean scores of the studied students**

| Total knowledge score & total attitude score | Total practice score | | | | | |
|---|---|---|---|---|---|---|
| | Pre | | Immediate | | Post 2 months | |
| | r | P | r | P | r | P |
| **Total knowledge score** | **0.241** | **0.00**** | 0.005 | 0.925 | -0.009 | 0.880 |
| **Total attitude score** | -0.013 | 0.826 | -0.007 | 0.908 | -0.051 | 0.375 |
| **Total knowledge score Vs total attitude score** | 0.103 | 0.075 | **0.169** | **0.003**** | **0.165** | **0.004**** |

***** Correlation is significant at level P < 0.05** Correlation is significant at level P < 0.01.

## 5. DISCUSSION

Drug abuse is one of the major challenges facing the world today. It is a serious social problem that can affect the future of youth who are considered the most valuable asset for every nation. Substance abuse and addiction are amongst leading causes of adolescent death. Because increasing rate of drug addiction among adolescents and young age, its prevention need to be apriority for health care professionals. Hence, we need specific attention toward the younger age to promote their knowledge, attitude and practices toward drug use and addiction [20, 21].

There are many factors that can lead to drug abuse such as age, residence, birth order, parent's educational level, parents' occupation, crowding index, income, family member relationship, how spending free time family history, peer pressure, lake of knowledge and negative attitude toward drug addiction. So, the present study was carried out to evaluate the effect of educational program on the knowledge, attitude and practices of preparatory school students regarding drug addiction. Different age groups are liable to use drug for different reasons, however adolescents and young adults are particular venerable to drug abuse because these ages hold a special position in each society and occurrence of any serious physical and psychological problem among them can expose the society to considerable problems[22].

Regarding socio demographic characteristics of the studied students, the results of the present study revealed that the age of slightly less than half of the studied students was ranged from 13 years to less than 14 years and the age of more than one quarter of them was 12 years to less than 13 years (table 1). And also there was highly positive significant correlation between students' age and their total knowledge score and total practices score pre program intervention **(table 6, 7)**. This demonstrates the importance of this age as a high risk group for drug addiction which has obvious effect on their knowledge and practices. The results of the current study come in agreement with the study done by Desliva PV and Fonseka P, (2008), about drug addicts and their behavior related to drug addiction among the institutional addicts of Galle district, who reported that the majority of drug addicted started using drugs when they were in the age group of 10-20 years [23]. This result is also come in agreement with Al Musa H M and Al-Montashri S D, (2016), who's study conducted in Saudi Arabia about substance abuse among male secondary school in Abha city, prevalence and associated factors, who reported that smoking was started among adolescents whose age was ranged from 10 - 15 years [24].

Regarding parent's education, the level of education and attaining knowledge can affect the persons' health behavior which may role in transfer to his / her children and affect their awareness and norms [25]. The current study revealed that 39.3 % of studied student's father attained university / post graduate education and more than one third of students' mother had secondary education or university / post graduate education. This could be a factor and explanation for the minority number of students who used addictive drugs in this study. This nearly comes in agreement with Al Musa H M and Al-Montashri S D , (2016), who found that about one half of his students' father attained university education compared with more than one half of students' mother had university education[24]. While the result of this study is in contrast with Mohamed R A and Khaton S, (2017), who found that forty of the students' parents education were illiterate or read and write [26].

In relation to parents' occupation which is another factor that can affect students' practices regarding of drug addiction, Kingendo M, (2010), stated that the prevalence of substance abuse is affected by social norms including level of parental supervision, and personal value [27]. The result of the present study revealed that the majority of fathers of the studied students were work, while 60.7% of students' mother were housewives and more than one third of them were working(table 1) and there was negative significant correlation between students' total knowledge score and their fathers' occupation pre program intervention(table 6). This may resulting in the students may have lack of parent's supervision and unhealthy family relationship because parents were busy with their jobs and neglect their children. This in role negatively affects the students' knowledge. This result is nearly in agreement with Mohamed R A and Khaton S, (2017), who found that nearly three quarters of students' father had a job while more than three quarters of students' mother were housewives and also found significant difference between students' parent occupation and knowledge score among the studied group [26]. This result of the current study is also supported by Al- Houqani M, et als., (2012), who stated the higher prevalence of substance abuse among students of employed mother [28].

Concerning crowding index, the current study revealed that more than one half of the studied students had crowding index level from 0 -< 2 and more than one third of them had 2- < 3 crowding index ( table 1) and there was highly significant negative correlation between crowding index and students' total knowledge score (table 6). This may explained the effect of poverty and crowding stress on the ability of students to attain healthy knowledge regarding drug abuse and addiction. As well as there was negative significant correlation between crowding index and the total attitude score of the studied students pre program intervention (table 9).

Regarding students' family history about smoking and substance abuse, family can play an important role in maintaining family members' escalation into substance abuse or the recovery from its effects. According to Hakama M, et als., (2010), [29] and Faulkner GE, et als., (2010 ) , [30] smoking by family member increase the risk of adolescents' smoking and addiction. The present study revealed that less than one half of the students' fathers were smokers and about one half of the students' family members smoke cigarettes (table 2). This may be an important predisposing factor for students' smoking and addiction i.e. students or young age may smoke for imitating their fathers or preferred person. This come nearly in the same line with Babar B A, (2016), who found that nearly one quarter of the smoker medical students, had smoking family members [31]. The result of the current study is also in agreement with Fazelpour SF, (2009), in his study about students' attitudes of Guiilan University of medical sciences smoking- related, who found that 25 % of the students had smoker parents [32]. The results of the present study in context with Masbio R M, et als., (2013), in a study about an assessment of knowledge, attitude and practices of psychoactive substance use among secondary school students in Dodoma Municipality, Tanzania whose found significant relationship between psychoactive substance use by students and having family member using the psychoactive substance [33].

In relation to students' knowledge about drug addiction, the present study revealed that the majority of the studied students had poor knowledge level pre program intervention( table 3)This come in accordance with Mohamed R A and Khatone S, (2017), who found that more than two thirds of his sample had low knowledge preprogram intervention [26]. The findings of the current study come in contrast with Masibo RM. et. als., (2013), who found that his sample has adequate knowledge on substance abuse [33]. Significant improvement in students' knowledge nearly for all knowledge items as well as the majority of the students had good total knowledge level immediately and two months after implementation of the program. These results come in agreement with Mohamed R A and Khaton S, (2017), who found that there was significant improvement in students' knowledge score, the majority of students had high knowledge score immediately post intervention and two months after intervention [26]. The results of the current study also come in in the

same context with Baraz S, (2012), who reported a significant increase of knowledge level from pretest to posttest in both intervention groups [34].

Educational preventive programs about drug addiction is very important not for only increasing knowledge and improve view but also for improving the performance [35]. The present study revealed that there was statistical significant improvement in students' practices after implementation of the educational program. The majority of the studied students had satisfied practices immediately post intervention as well two months post program intervention (table 4). This highlights the importance of the educational program which conducted by the researcher in improving the students' practices toward early prevention of drug addiction. This result is in the same context with Medhi T, (2008), who reported that after application of educational program, the students seemed to be informed because there was statistical significant difference between the percentage of correct answer of the pre test and the posttest [36]. This result is supported by Barati M, et. als. (2011), who also reported that the educational program was effective in the promotion of drug abuse preventive behavior of university students and the comparison of post-test mean score of drug abuse preventive behavior of both group showed significant increase [37].

Person attitude play an important role in development of his or her personality and stability of their behavior. The present study revealed that more than one half of the studied students had negative attitude pre program intervention while all the students had positive attitude immediately and 2 months after program intervention (table 5). This could be attributed to the immaturity of the students in this age and lake of decision making skills which make them liable to easily have negative attitude from the surrounding environment. This result come in agreement with Mohamed R A and Khaton S (2017), who found that more than one half of his sample had negative attitude in pre intervention[26]. While our results are in contrast with Heydarabadi A B, et. als., (2015) who studied knowledge and attitude of dormitory students of Shahid university of medical science about substance abuse, who found that the majority of the students had moderate and good attitude toward drugs [38]. The results of this study found a significant improvement in the attitude of the studied students toward drug addiction immediately post and 2 month after program implementation. This finding of the present study comes in agreement with Mohamed R A and Khaton S (2017), who found that the positive attitude markedly increased post program intervention with highly significant in pre, immediately and two months post intervention [26]. And also in the same line with Jirapa S ,et. als., (2012), who found that there was a statistical significant improvement in relation to attitude score in pretest and posttest phases [39].

The current study revealed that the total score of students' knowledge was highly significantly and positively correlated to the total score of their practice pre program intervention (r=0.241 and p=0.000).And there was highly significant correlation between the total knowledge score vs total attitude score and the total practices immediately and 2 months after program intervention(table 9) .This comes in agreement with Jirapa S, etals., (2012), who found statistical significant difference between score of knowledge, attitude and drug abuse prevention practices from primary school students before and after participating in the training program [39].

## 6. CONCLUSION AND RECOMMENDATIONS

### Conclusion

There was an obvious significant improvement in the mean score of the students' knowledge after program implementation, all students exhibited positive attitude toward drug addiction and there was significant improvement in satisfied practices of the students after implementation of the health educational program.

### Recommendations

Based on the results of the present study, the following recommendations are suggested:-

1. Health educational programs should be directed to adolescents and young age students to increase their awareness regarding risk factors, consequences and methods of protection from drug addiction.
2. School health programs should integrate specific life skill training program in their curriculums to help students to combat the problem of drug addiction in all different educational stages.

3. Mass media, friends, schools and families should assume their roles in increasing the awareness of students and young adolescents about protection of addiction.
4. Health educational campaigns concerning drug addiction should be directed to vulnerable groups through collaboration between different sectors as health, educational and social sectors.
5. Laws against drug abuse and drug trafficking should be strictly applied and announced to all populations.
6. Further researches which deal with factors and behaviors of addiction are needed among school age students to prevent this problem.

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