Peer Education Intervention to Promote Drug Abuse Prevention among Secondary Schools Students

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Abstract

Drug abuse is a worldwide serious health problem. Peer education is an effective method in preventing risky behaviors and educating teens about drug abuse. Aim of the current study was to evaluate the effectiveness of peer education intervention to promote drug abuse prevention among secondary schools students. Methods: a quasi-experimental research design was used. A multi-stage random sample selection of six secondary schools affiliated to the Ministry of Education and Technical Education was utilized. A convenience sample of 1200 students was selected from the 1st, 2nd and 3rd grades of the selected schools at Shebin El kom, Menoufia Governorate, Egypt. Instruments: (1) Socio-demographic data questionnaire; (2) Basic knowledge of students about drug abuse questionnaire; (3) Attitudes of the students toward drug abuse prevention assessment questionnaire and; (4) Self-efficacy of students about drug abuse prevention questionnaire. Results: the mean age of the studied students in both study and control groups were (16.14 ± 1.08 &15.96 ± 1.01) respectively. There were statistically significant differences between study and control group in the total mean score of knowledge about drug abuse post intervention (12.39 ±1.72 & 6.88 ± 1.35; P value .000) compared to pre-intervention (6.95 ± 2.14 & 6.72 ± 2.19; P 0 .535). There was a statistically significant difference between study and control group regarding students' attitudes toward drug abuse post intervention (160.98 ± 11.72 & 75.55 ± 13.35; P 0.000) compared to pre-intervention (77.53 ± 12.14 & 75.89 ± 11.19; P 0.735). Finally, there was a statistically significant difference between study and control group regarding students' self efficacy about drug abuse prevention post intervention (11.84 ± 1.92 & 8.18 ± 1.55; P 0.000) compared to pre-intervention (8.89 ± 3.14 & 7.99 ± 1.92; P 0.598). Conclusions: the findings of the current study suggest that peer education intervention has a positive effect and significantly enhances knowledge, self-efficacy and attitudes of secondary school students toward drug abuse. Recommendation: Peer education intervention as a school-based prevention programs is an appropriate model to be implemented for drug abuse prevention among school students.

Key Words: Peer Education, Drug Abuse Prevention, School-based Intervention, Secondary School Students.

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Introduction

Adolescent substance abuse is a serious issue that contributes to significant medical, psychological, and legal consequences later in life **(Gullone & Moore, 2000)**. The period of adolescence is a challenging time of development as youth are making a series of cognitive, biological, psychological, and physiological transitions into adulthood **(Rabie, Shaker, Gaber, El-Habiby, Ismail, El-Gaafary et al., 2020)**.

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Adolescents come across different challenges and expectations, which drive them into drug experimentation as a form of self-medication **(Lo, Yeung, & Tam, (2020)**.

In Egypt, the prevalence of drug abuse among secondary school students is 8.3%. The most common drugs used by the students are Cannabis 83.3% and Tramadol 27.8 % **(Negm & Fouad, 2014)**. Approximately 9% of the Egyptian students are using "bango" and 3% are using hashish **(Taha, Taalab, Abo-Elez & Eldakroory, 2019)**. Drug abuse is the most common negative factor affecting secondary school students associated with psychological and social problems such as mental disorders, suicide attempts, and escape from home, aggressive violent social behaviors, crime, poor academic performance, school failure, and disinterest in education. Adolescents use substances for entertainment, meeting their social and emotional needs, escaping from problems, seeking excitement, or to challenge their environment **(Akfert, Cakici & Cakici, 2009; Uzun, S., & Kelleci, M. (2018)**.
Drug abuse not only influences the user but also influences the family and the community as a whole **(Ghasemi, Simbar, Fakari, Saei & Kiani, 2019)**. Therefore, it is necessary to design and implement a strategy to prevent drug abuse. Peer education intervention has been suggested as an effective approach in preventing risky behaviors as drug abuse **(Varaei, Shamsizadeh, Cheraghi, Talebi, Dehghani & Abbasi, 2017)**. Peer education is one of the most successful methods to prevent drug abuse by disseminating harm reduction information to the targeted community through the recruitment, training and support of peer educators.

Peer education is based on preparation of pioneer volunteer teenagers and letting them share their acquired knowledge and skills with their peers **(Karaca, Akku & Konuk, 2018)**. Peer education provides the unique learning opportunities for promoting health behaviors in young people and decreases the risk of drug abuse among high school students **(Degenhardt, Stockings, Patton, Hall, & Lynskey, 2016)**. Also, Peer education is a cost-effective approach for drug abuse prevention. A peer educator is defined as "a member of a peer group that receives special training and information and tries to sustain positive behavior change among the group members" **(Şener, Akkuş, Karaca, & Cangür, 2018; Mason-Jones, Flisher & Mathews, 2011)**.

Significance of the Study

Drug abuse is a rising problem among school students and is associated with an elevated risk of drug use disorders later in life and mental health problems. Knowing the impact of substance abuse in adolescents, it is important that effective interventions and delivery platforms be identified and implemented **(Strange, Forrest & Oakley, 2002)**. The focus of these interventions should be targeting modifiable risk factors and enhancing protective factors through school and community prevention programs **(WHO, 2015)**.

The psychiatric mental health nurse and community health nurse are especially equipped to strengthen the bonds among adolescents and parents, health agencies and schools, to assist the community in the design and implementation of its own prevention program.

Although research continues to examine the efficacy of various intervention programs, less attention is focused on the role of peer educators related to intervention outcomes. Since, a teen's peer can be part of the most important social relationships in a teen's life, they are often contributing more to his/her development than families do and become an important social reference. They also influence their peer attitudes and behaviors on many cultural and social issues, such as drug use. This suggests that the peer education program made great, positive contributions toward self-confidence, motivation, and the enhancement and prevention of substance abuse. Thus, the current study implemented peer education intervention to promote drug abuse prevention among secondary school students. The findings of the current study may help students to move through adolescence and young adulthood without the burden of the destructive effects of drug or other substance abuse.

Aim of the Study

To evaluate the effectiveness of peer education intervention to promote drug abuse prevention among secondary school students.

Research Hypotheses

1) Students who attend the peer education intervention will have increased knowledge on drug abuse prevention compared to

students who do not attend the peer education intervention.

2) Students who attend the peer education intervention will have a positive attitude toward drug abuse prevention compared to students who do not attend the peer education intervention.

3) Students who attend the peer education intervention will have high scores of self-efficacy compared to students who do not attend the peer education intervention.

Theoretical Framework of the Study

The current study used peer education intervention to promote drug abuse prevention among secondary school students. Peer education relies on the social learning theory which is one of several behavioral theories. Social Learning Theory claims that modeling is an important element of the learning process **(Chakravarthy, Shah & Lotfipour, 2013).** The social learning theory asserts that some individuals function as role models of human behavior due to their ability for stimulating behavior changes in other individuals **(Bandura, 2006; Bandura, 1997)**.

Methods

Research Design

A quasi-experimental design (study/control group) was utilized.

Research Setting

A multi-stage random sample selection of six secondary schools affiliated with the Ministry of Education and Technical Education at Shebin El khom, Menoufia Governorate.

Sample

A convenience sample of 1,200 students was selected from a total of 3,200 students from 1st, 2nd and 3rd grades of the chosen setting. Based on this formula:

$$\text{Unlimited population: } n' = \frac{z^2 \times \hat{p}\,(1-\hat{p})}{\varepsilon^2}$$

$$\text{Finite population: } n' = \frac{n}{1+\frac{z^2 \times \hat{p}\,(1-\hat{p})}{\varepsilon^2 N}}$$

z for a 95% confidence level is 1.96. **p** for the population proportion is 0.5. **ε** for the margin of error is 0.023. **N** is population size is 3200

$$\text{n} = \frac{1.96^2 x 0.5(1-0.5)}{0.023^2} = 1815.5$$

$$\mathbf{n'} = \frac{1815.5}{1+\frac{1.96^2 x 0.5(0.5-1)}{0.023^2 x 3200}} = 1158.6$$

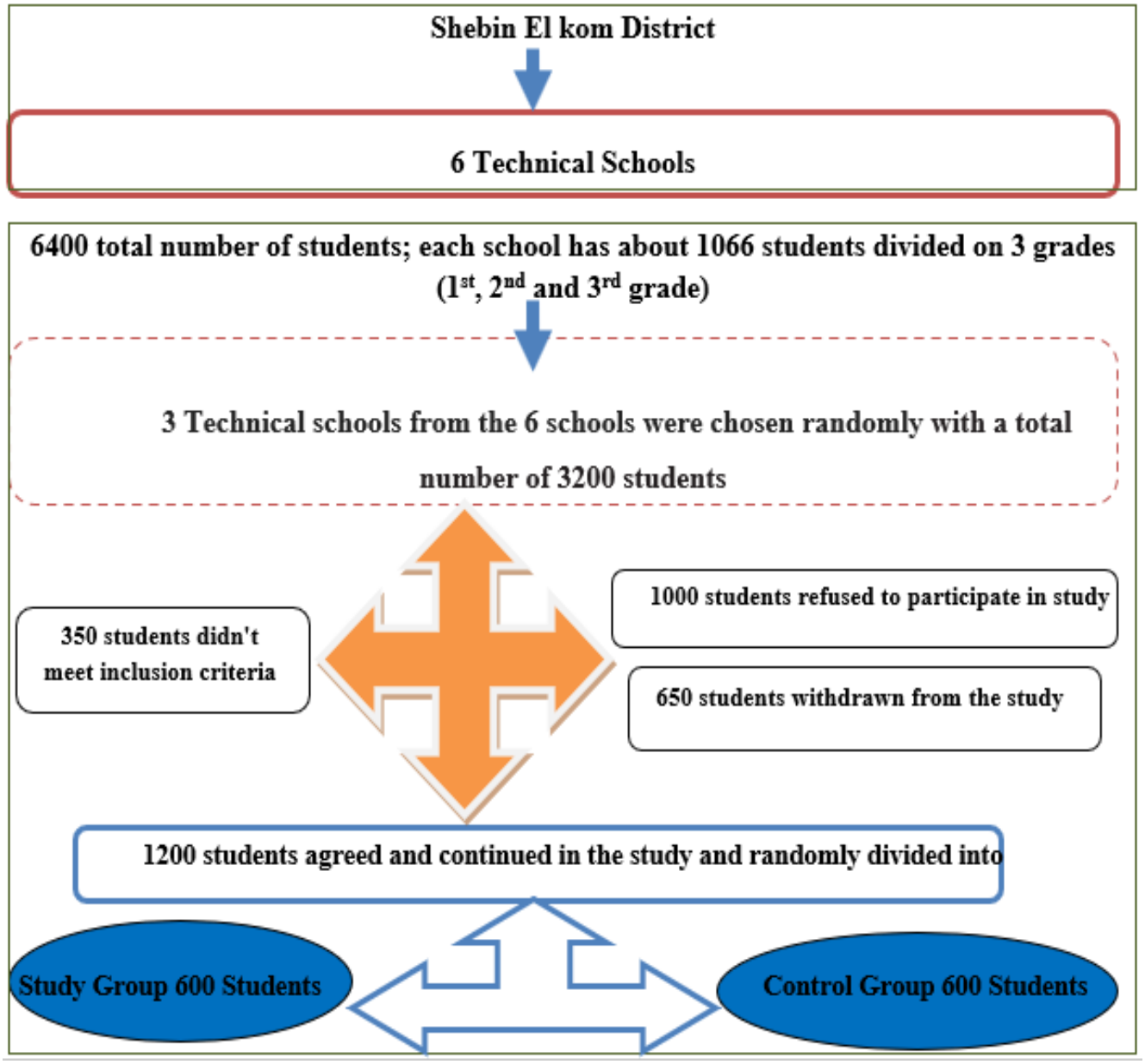
Thus, a sample size of at least 1159 and maximum 1200 students would be necessary.

Inclusion Criteria

a) Both sexes; b) Students in first, second and third grades at secondary schools; c) Students free from any mental health problems or drug addiction; d) willing to participate in the study.

Sampling Technique

A multi-stage random sample selection of three secondary schools affiliated with the Ministry of Education and Technical Education at Shebin El kom, Menoufia Governorate was performed. Shebin El Kom district was chosen to conduct the study because it represents the largest district with the biggest population. Shebin El Kom educational administration consists of six technical educational schools with a total number of 3,200 students (three schools were randomly selected). The three schools were selected randomly by writing the names of the schools on a slip of paper and folded. One of the administrators was then asked to draw three folded papers one at a time. The three selected schools have a total number of 1,200 students representing all the three grades (1st, 2nd and 3rd grade) that meet the study inclusion criteria and were willing to participate in the study. The total number of the recruited students were randomly assigned to either study or control group. See diagram.



Instruments

Four instruments were used to collect data of the study.

i. An interviewing questionnaire was used to collect data about socio-demographic characteristics such as sex, age, school grade, number of family members and family income.

ii. A drug abuse knowledge questionnaire was used to assess students' knowledge about drug abuse. The questionnaire was developed by the researchers after reviewing the related literature **(Burke & Mancuso, 2012; Mahdi, 2015)**. It consisted of nine questions including definition of drug abuse, difference between drug abuse and drug addiction, types of drugs related to addiction, contributing factors related to drug abuse, manifestations, forms of addictive drugs, short term and long-term consequences of drug abuse. This nine-item questionnaire utilized a (0) don't know, (1) incorrect response and (2) correct response format. The total scores were summed and the scores ranged from 0 to 18. A higher score indicates satisfactory knowledge (> 50 %). In the current study, the reliability of the scale was tested using test-retest reliability with a two-week interval. The internal consistency Cronbach Alpha Coefficient of the total scale was r = 0.87.

iii. Students' attitudes toward drug abuse questionnaire to assess students' attitudes toward drug abuse prevention. The questionnaire was designed by the researchers after reviewing the related literature. It consisted of 45 questions divided into 29 positive items and 16 negative items. The questionnaire is a five-point Likert type scale whereas, (1) strongly disagree, (2) disagree, (3) don't know, (4) agree and (5) strongly agree. The scoring system for positive and negative items is reverted. The total scores of the questionnaire is 225; the score ≤ 112 indicate a negative attitude and the score of >112 indicate a positive attitude. This cut off point was suggested to be the half of the total score based on the higher the score the higher tendency to positive attitude.

iv. Self-Efficacy Scale for drug abuse prevention adopted from **(Eker, Akkuş, & Kapısız, 2013)**. It consisted of 24 items that was designed to assess self-efficacy of students about drug abuse. The scale included four parts: 1) staying away from Drugs/Stimulant; Drugs - General (12 items); staying away from Drugs/ Stimulant Drugs - under pressure (4 items); seeking help about drugs/stimulants (4 items); and supporting friends on drugs/stimulants (3 items); and one control question, indicating that information on self-efficacy can be given by oneself. It is a five-point Likert type scale. The responses categorized as (1) not confident at all; (2) slightly confident; (3) little confident; (4) quite confident and (5) extremely confident. The total score ranged from 23 to 120. A high score indicates a high self-efficacy of the student on protection from drug abuse. The reliability of the scale was assessed by **(Iranpour, Jamshidi, Nakhaee et al., 2015)** and the internal consistency of the four subscales ranged from 0.45 to 0.87. In the current study, the reliability of the scale was assessed using test-retest reliability with a two weeks interval and the internal consistency Cronbach Coefficient of the total scale was found to be 0.89.

Validity of the Developed Tools

Face and content validity of the developed tools were tested by a peer review committee of five academic professors who are experts in family and community health nursing, psychiatric health nursing, psychiatric medicine, pediatric development specialist and medical surgical nursing specialist to examine the relevance and comprehensiveness of the tools. Based on the feedback of the committee, slight modifications were carried out.

Pilot Study

A pilot study was conducted in order to test the feasibility and the clarity of the questionnaire items and to estimate the needed time to fill the questionnaire. A total of 10% of the recruited sample participated in the pilot study. The students who participated in the pilot study were excluded from the final analysis.

Ethical Considerations

An official approval was obtained from the Research and Ethics Committee of the Faculty of Nursing. Also, an oral approval was obtained from the students' parents over the phone after explaining the nature and the purpose of the study. The researchers explained to the students that participation in the study is voluntary and they have the right not to continue if they choose.

Data Collection Procedure

Data collection started from September 15, 2019 to March 30, 2020.

Peer Educators Selection and Training

All students were asked to nominate the most influential and compassionate students in their grade group. Those who received the most nominations were invited to become peer educators. Fifty students were selected as peer educators by the students.

There was a meeting with the identified peer educators to explain the nature and the purpose of the study in addition to their roles as peer educators. A training week was scheduled for the peer educators. During training, peer educators were instructed on how to be sensitive, open minded, a good listeners and how to communicate their ideas and feelings in a positive and non-judgmental way as well as how to possess and project a positive attitude about working with their peers and how to recognize and respond to substance related problems among friends. In addition, available sources of information and counseling services were identified so the peer educators could guide other peers to the appropriate help. A 60-minute training

session was scheduled every day for five days. At the end of the week an entire day was scheduled for role playing to demonstrate and mimic how they are going to deliver the peer education intervention.

Implementation of the Peer Education Intervention

Each peer educator created a WhatsApp group to promote the program and invite students to participate. A total of 1,200 students from 1st, 2nd, and 3rd grades agreed to participate in the study. All the students who agreed to participate were divided equally and randomly into a study and control group. There were 600 in each group.

Each peer educator had a group of 10-15 students. An official permission was obtained from the school directors to conduct a 60-minute session after the school timetable. During the session the peer educator explained to the students the basic information about drug abuse and ways of prevention. Also, simple self-illustrated brochures were distributed to the students. The brochures were designed by the researchers to explain the harmful effects of substance abuse, the peer pressure effect and how to say no and how to avoid engaging in any unhealthy behaviors. Each group met for two sessions over two consecutive days. The third day was planned to be an open discussion to give students a chance to ask any questions and explain any inquires. The peer educators assured the participating students that their confidentiality during the discussion will be guaranteed. The last day was designed to get the students' suggestions and feedback about the whole program. The peer educators distributed the study questionnaires before starting the sessions (pretest) and once again after a month to guarantee the information retention. The students were asked not to write their names on the questionnaires to put them at ease and allow them to answer questions freely. The questionnaires took about 40–45 minutes to complete.

Results

Table 1: The mean age of the participating students was (16.14 ±1.08 &15.96 ±1.01) in the study and the control group respectively. Male students represented 66.7% in both study and control group. First grade students constituted 38.3% of the study group and 42% of the control group; second grade students represented 28.7% of the study group and 30.7% of the control group; and third grade students comprise 33.0 % of the study group and 27.3% of the control group. Thirty six percent in both study and control group indicated that their family income is enough.

Table 2: Illustrates that there is a highly statistically significant difference between the study and the control group regarding students' knowledge about drug abuse prevention post intervention comparing to pre-intervention (12.39 ±1.72 & 6.95 ±2.14; P 0.000) indicating that the peer education was an effective intervention to improve the students' knowledge about drug abuse prevention.

Table 3: Shows that there is a statistically significance difference between study and control group of the mean score of the students' attitude about drug abuse prevention post intervention indicating that the participating students in the study group have a more positive attitude about drug abuse prevention (160.98±11.72) compared to the students in the control group (77.53± 12.14) post intervention.

Table 4: Illustrates that there is a highly statistical difference between study and control group in the mean score of the students' self-efficacy post intervention indicating that the peer education is an effective intervention to enhance the students' self-efficacy in the study group (100.84±18.92) post intervention comparing to pre-intervention (84.18± 13.55).

Figure 1: Shows that about three quarters of the students in the study and control groups have unsatisfactory knowledge on pre-intervention (73.3% &70.0%) respectively. Whereas, post intervention, the majority of students in the study group (87.3%) have satisfactory knowledge compared with two third of the students in the control group (68.7%) have unsatisfactory knowledge.

Figure 2: Illustrates that more than two third of the students in the study group (70.3%) had negative attitudes pre-intervention. Whereas, post intervention, the majority of the students in the study group (84.3%) had positive attitudes.

Figure 3: Shows that more than three quarters of the students (78.7%) had low self-efficacy pre-intervention compared with 90.3% of the students had high self- efficacy post intervention.

Table 1. Demographic Characteristics of the Studied Sample (N= 1200)

Demographic characteristics	Study Group n= 600		Control Group n= 600	
	No.	%	No.	%
- Sex				
Male	400	66.7%	400	66.7%
Female	200	33.3%	200	33.3%
- Age Mean ±SD Range	16.14 ±1.08 (15-18)		15.96 ±1.01 (15-18)	
- School Grade				
1st Grade	230	38.3%	252	42.0%
2nd Grade	172	28.7%	184	30.7%
3rd Grade	198	33.0%	164	27.3%
- Number of Family Members				
3-	132	22.0%	112	18.7%
4-	62	10.3%	184	30.7%
5-	216	36.0%	160	26.7%
6	190	31.6%	144	24.0%
- Family Income				
Enough	216	36.0%	218	36.3%
Not enough	200	33.3%	254	42.3%
Enough and more	184	30.7%	128	21.3%

Table 2. Mean score of the total knowledge about drug abuse prevention post intervention (N =1200)

Items	Study Group (Mean ± SD)	Control Group (Mean ± SD)	Independent t test	P-value
Mean score of the total knowledge about drug abuse prevention				
Pre-intervention	6.95 ±2.14	6.72±2.19	0.621 ns	0.535
Post intervention	12.39 ±1.72	6.88 ±1.35	18.366 *HS*	0.000
Paired t test	-19.979-*HS*	-0.751- ns		
P-value	0.000	0.635		

Table 3. Mean score of the total attitude about drug abuse prevention post intervention (N =1200)

Items	Study Group (Mean ± SD)	Control Group (Mean ± SD)	Independent t test	P-value
Mean score of the total attitude about drug abuse prevention				
Pre-intervention	77.53± 12.14	75.89±11.19	1.72 ns	0.735
Post intervention	160.98±11.72	75.55 ±13.35	14.66 *HS*	0.000
Paired t test	-29.110- *HS*	1.165 ns		
P-value	0.000	0.250		

Table 4. Mean score of the total Self-efficacy post intervention (N=1200)

Items	Study Group (Mean ± SD)	Control Group (Mean ± SD)	Independent t test	P-value
Mean score of the total self-efficacy				
Pre-intervention	88.89± 13.14	78.99±12.92	0.932 ns	0.598
Post intervention	100.84±18.92	84.18±13.55	11.366 HS	0.000
Paired t test	-12.011- HS	-0.289- ns		
P-value	0.000	0.774		

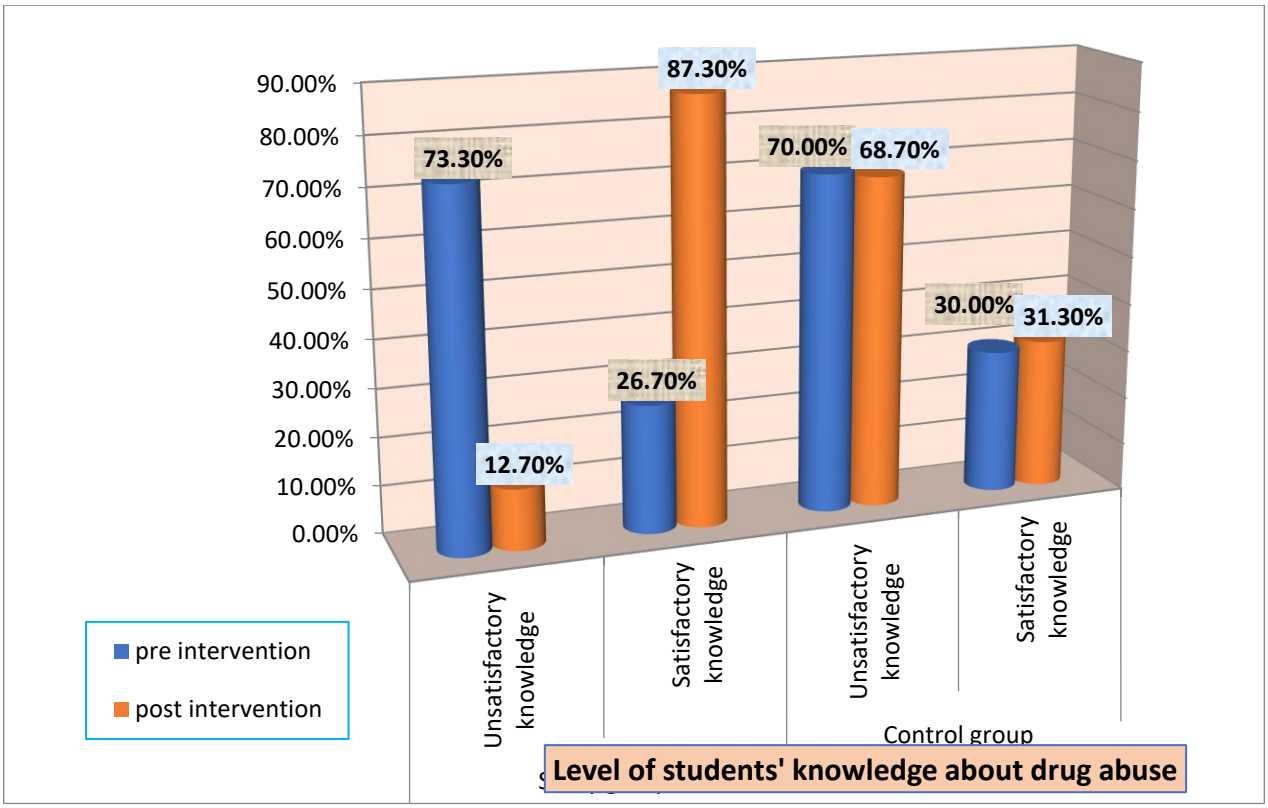


Figure 1. Total score of students' knowledge about drug abuse prevention pre and post intervention (N =1200)

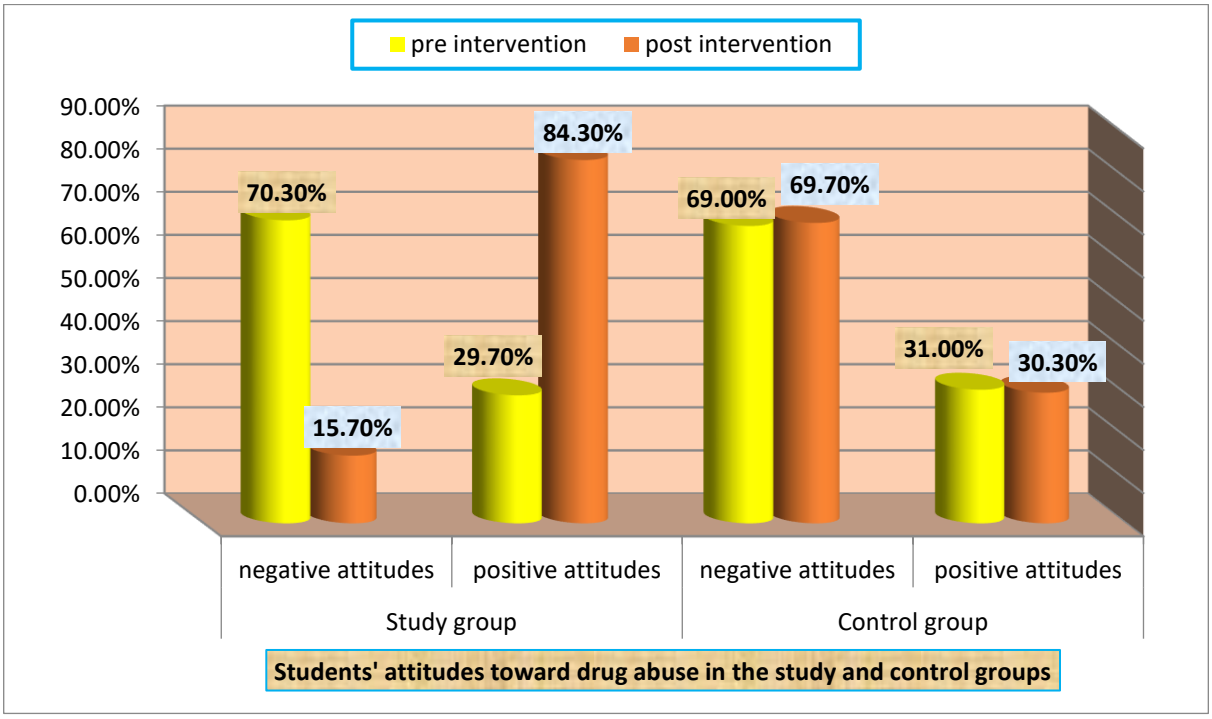


Figure 2. Students' attitudes toward drug abuse prevention pre and post intervention (N =1200)

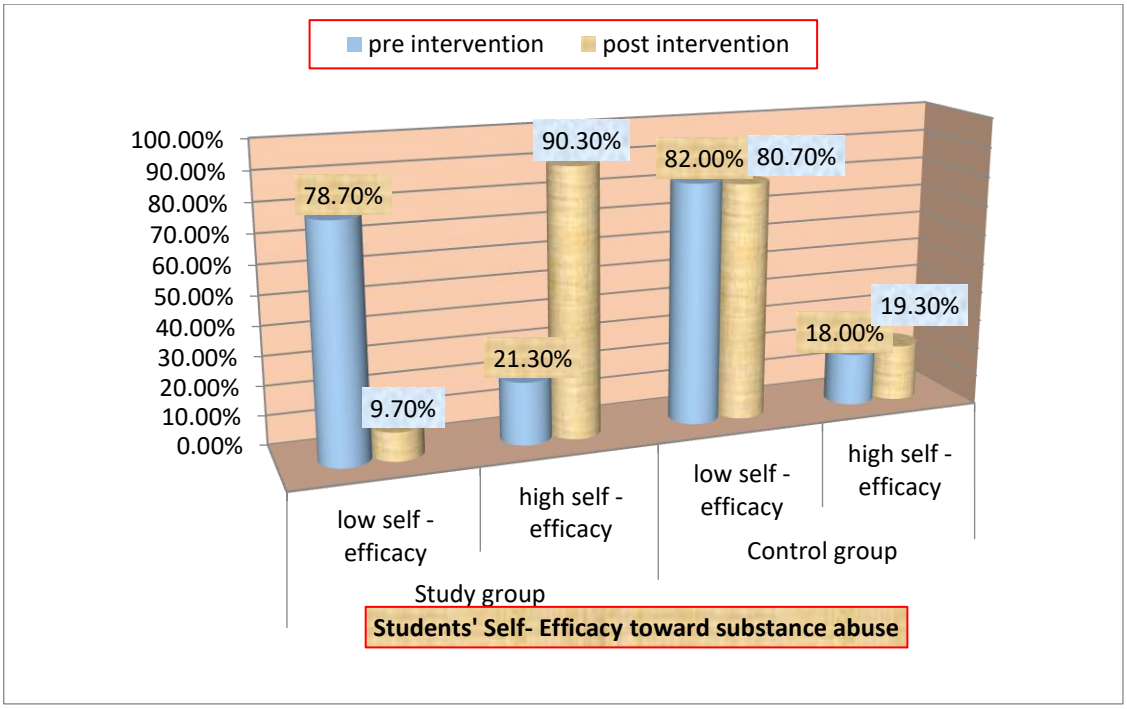


Figure 3. Total score of the students' self-efficacy toward drug abuse prevention post intervention (N=1200)

Discussion

The aim of the current study was to evaluate the effectiveness of peer education intervention to promote drug abuse prevention among secondary school students. The study findings showed that peer education intervention was effective in enhancing knowledge, self-efficacy and attitudes of secondary school students' toward drug abuse prevention.

Effect of Peer Education on Students' Knowledge about Drug Abuse Prevention

There is growing interest in the role schools can play in the prevention of risk behaviors in adolescent students **(Uzun, & Kelleci, 2018)**. The current study hypothesized that students who attend the peer education intervention program will have an increased level of knowledge on drug abuse prevention compared to students who do not attend the peer education intervention. The findings of the current study revealed that peer education intervention increased the students' knowledge about drug abuse prevention post intervention compared with pre-intervention.

The current study finding is consistent with **Bond, Butler, Thomas, Carlin, Glover, Bowes, & Patton, 2007**; who found that there was a significant difference in the knowledge of school-aged children after peer education in the study group compared to the control group. In addition, the findings of this study were aligned with other studies conducted by **Fitriana, Suryawati, & Zubaidah, 2018; Moshki, Zamani-Alavijeh, & Mojadam, 2017** and revealed that education by peers has a positive influence on the knowledge of school-aged children. However, the findings of the current study are different from **Elkazh and El Mahdy ,2017** findings who reported that there was no significant difference between the score averages of the group educated with peer education and the group educated by traditional education methods to prevent substance addiction in terms of basic information level on substance abuse.

Effect of Peer Education on Students' Attitudes Toward Drug Abuse Prevention

The study hypothesized that students who attend the peer education intervention will have a positive attitude toward drug abuse prevention compared to students who do not attend the peer education intervention. The findings of the current study revealed that there was a statistically significant difference between study and control group in the mean score of the total attitude about drug abuse prevention post intervention. These findings are similar to **Ping Lingli, Manoj SHARMA, Yong ZHANG, & Yong, 2014**; findings who studied the effectiveness of peer-led media education programs for drug use prevention among students in Turkey and found that there was a significant difference

between the peer-led group and the control group in students' attitude about drug abuse prevention. However, the findings of the current study are different from the findings of a Dutch school-based drug prevention study conducted by **Hasel, Mohammad, Javad, Elaheh & Rezvan, 2016**; who reported that there was no clear evidence for any effect on students' attitude towards substance use.

Effect of Peer Education on Students' Self-efficacy About Drug Abuse Prevention

Peers are the second source of efficacy information for children after the family. The study hypothesized that students who attend the peer education intervention will have high scores of self-efficacy compared to students who do not attend the peer education intervention.

The findings of the current study showed that there was a statistically significance difference between study and control group in the mean score of the students' self-efficacy post intervention. The study findings are similar to **Bond, Butler, Thomas, Carlin, Glover, Bowes, & Patton, 2007**; who found that peer education increased self efficacy in school-aged children in preventing sexual violence. Additionally, the current study findings are similar to **Degenhardt, Stockings, Patton, Hall, & Lynskey, 2016**; who reported that the mean score on the self-efficacy scale for students in the study group increased after being provided with a peer education program, indicating that self-efficacy can be increased through training.

Limitation of the Study

Substance use was only measured with self-reporting questionnaires. Participants may have been more likely to report using fewer drugs than they actually use. Another limitation is the short follow-up period. Finally, it is limited to one geographical area and included only middleclass rural students.

Conclusion

The findings of the current study suggest that peer education intervention to promote drug abuse prevention has a positive effect and significantly enhances knowledge, self-efficacy and attitudes of secondary school students.

Recommendations

- Peer education intervention as a school-based prevention program is an appropriate model to be implemented for drug abuse prevention among school students.
- Applying the peer education intervention in the schools to decreases other risky behaviors such as obesity.
- Long term studies should be conducted to include many schools and different settings of adolescents' residence with a large sample.

Implications for Nursing Practice

The peer education model has a simple, understandable, and inexpensive design; thus, it can be implemented at different settings on a large sample.

The inclusion of drug use prevention in the curriculum may be an effective strategy for decreasing drug use among adolescents.

Implications for Future Research

Future research is needed to evaluate the sustainability and long-term effectiveness of substance abuse programs targeting adolescents.

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