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# Effect of Health Educational Intervention on Smoking Cessation among Faculty of Nursing Smokers

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*Abstract:* Currently, societies have sufficient opportunity to access correct information regarding smoking and its adverse impacts. So, workers should have high consciousness towards the risks of smoking. Aim: the study aimed to Evaluate the effect of health educational intervention on smoking cessation among faculty of nursing smokers at Suez Canal University at Ismailia City. Design: A quasi – experimental design was used in this study. Setting: The study was conducted in Faculty of Nursing at Suez Canal University at Ismailia City. Sample: All available smokers work in Faculty of Nursing at Suez Canal University (comprehensive sample). Tools: Two tools were used. First tool: A structured- interview questionnaire was developed by the researcher and included the following :Socio demographic data, Socio-economic scale,knowledge about smoking,and smoking history. Second tool: Observational Checklist: It included: assessment of safety school environmen Employees' opinionaire sheet regarding health educational intervention on smoking cessation. The results: In referral to employee smoking history items; the present study showed that more than two thirds of studied subjects had 6-10 years of smoking ,45% of them used to smoke 5-10 cigarettes per day,more than half of them (60.0%) started to smoke at the age of <20 years.

Conclusion: The current study revealed that there was statistically significant (p<.05) improvement in all items of Knowledge of studied sample about smoking cessation from pre- to post implementation of a training program.

Keywords: Cessation . Educational intervention. Smoking. Tobacco.

# 1. INTRODUCTION

The use of tobacco products in Egypt is common. It is expected that about twenty percent of the population uses tobacco products daily. Cigarettes are the most common form of tobacco consumption in Egypt, with an estimated 19 billion cigarettes smoked annually in the country, making it the largest market in the Arab world After cigarettes, shisha waterpipes are the most common form of tobacco consumption (*Central Agency For Public Mobilization & Statistics, 2016*).

Tobacco use is the leading cause of premature death and disability in Europe. Each year, more than 700,000 Europeans die from tobacco-related illness. The main causes of death among smokers are illnesses related to smoking, including cancer and respiratory and vascular diseases. It is a known fact that smokers' life expectancy is ten years shorter than that of a non-smoker and half of tobacco users will lose 20 years of healthy life before dying from a tobacco-related disease(*Hoogendoorn et al., 2010*).

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Tobacco dependence is a disease, which drives the vast majority of tobacco use among adults. Tobacco dependence is related to the long-term, daily use of tobacco-based products (cigarettes, pipes, cigars, bidis, hookahs, chewing tobacco etc.). Most smokers are unable to stop smoking at their own will. In medical terms chronic smoking is defined as: tobacco dependence, nicotine dependence, tobacco addiction or nicotine addiction. Doctors and health professionals must therefore take into account that tobacco dependence is a medical condition and not a habit, vice, pleasure, or life-style choice (*Behrakis, 2017*).

Tobacco smoking is a main avoidable risk factor for the development of non-communicable diseases, including cancer cardiovascular and respiratory diseases. So, 12% of all adult deaths worldwide are because of tobacco use. General, among those aged 15 years and over, the worldwide prevalence of tobacco use is 22%. Smoking prevalence is, however, significantly higher among males (36%) than females (8%) with large difference across countries. ranging between 22% (Brazil) and 60.6% (Russia) among males, and between 0.6% (Egypt) and 28.7% (Bangladesh) among females (*Giovino et al., 2012; WHO, 2014*).

Long-term smoking cessation significantly decreases health hazards and leads to a decrease in the risk of early death. Countrywide applied services for smoking cessation care, such as face to-face support and quit lines, have been found to be operative in assisting smokers to quit. Calm access to such smoking cessation treatment and support has also shown to increase quit rate (*Verbiest et al., 2017*).

Evidence for the efficiency of interventions in this setting is well recognized; rates of smoking abstinence are increased when health professionals recognize smokers, prompt quit attempts, and provide assistance to quit smoking, including pharmacotherapy. Health educational intervention in which this evidence is connected to health professionals can be active in improving clinical practice, although the effects depend upon aspects such as guideline quality, context and professional experience (*Pinnock et al., 2012*).

Educational intervention also offer an opportunity for raising the profile of smoking cessation and facilitate the implementation of the WHO Framework Convention on Tobacco Control (*Russell et al., 2018; Verbiest et al., 2017*)

#### Aim of the study:

The study aimed to Evaluate the effect of health educational intervention on smoking cessation among faculty of nursing smokers at Suez Canal University at Ismailia City.

## 2. SUBJECTS AND METHODS

#### I. Study Design

A quasi-experimental design was conducted in this study.

#### II. Setting

The study was conducted in Faculty of Nursing, Suez Canal University at Ismailia City.

#### III. Subjects

The subjects of the present study was all available smokers (40 employee) work in Faculty of Nursing, Suez Canal University (comprehensive sample).

#### Inclusion criteria:

- Active/ passive smoker
- Free from chronic diseases.
- Accepted to participate in the study.

#### IV. Data collection

Two tools were used for data collection.

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<u>Tool (1)</u>: A structured- interview questionnaire it was developed by the researcher after reviewing the relevant literature, which include three parts to gather the following data:

#### Part (I):- Socio-demographic Data:-

It was constructed by the researcher and included socio-demographic characteristics of the study group such as gender, age, marital status, education level, occupation, residence and family type.

#### Socio-economic scale:

This scale was developed by **El-Gilany et al.**, (2012) which contains 7 domains with a total score of 84 such as education and cultural domain, occupation domain, family domain, family possessions domain, home sanitation domain, economic domain and health care domain.

Socio-economic level was classified into very low, then low, middle and high levels depending on the quartiles of the score calculated to assess socio-economic status.

**<u>Part II:</u>** It was included questions about knowledge regarding smoking and its effects on the human body, it was modified by the researcher and composed as follows:-

# (Background about the diseases that may caused by smoking, Smoking parents, Effect of Smoking and Cigarette components,...... etc)

#### Scoring for knowledge:-

The employee' questionnaire sheet for assessment knowledge regarding smoking and its effects on the human body consisted of 23 Q., as MCQs and the total scores were 46 degrees .

The result categorized as the following:

Zero = incorrect answer 1 = incomplete and correct answer 2 = complete and correct answers

Summation of all and calculate the mean and standard deviation were computed.

Part III: - It was included questions about smoking history, it was composed as follows:-

# (when he start smoking, how many cigarette/day, spend on cigarettes / month and Which method do you think will be successful in quitting smoking......etc.)

#### ← Scoring for :

The employee' questionnaire sheet for assessment smoking history 20 Q as MCQs and total score were 34 .

The result categorized as the following:

Zero = incorrect answer 1 = incomplete and correct answer 2 = complete and correct answers

Summation of all and calculate the mean and standard deviation were computed.

#### Tool (2): - Employees' opinionaire sheet regarding health educational intervention on smoking cessation.

It is modified by the researcher after reviewing the related literature; it was use to assess employees' opinions regarding using the health educational intervention of smoking cessation.

It was designed in a simple Arabic language to facilitate understanding and to minimize misconception.

#### V. Operational Design

#### 1. Tools validity

The 9 expertise of professors and lecturers from the family and community health nursing and medical surgical nursing departments; Faculty of nursing, Suez Canal University and from the family medicine and community medicine departments, Faculty of medicine, Suez Canal University who revised the tools for clarity, relevance, comprehensiveness, understanding and ease for implementation. According to their recommendation were modified.

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#### 2. Reliability:

Chronbach's alpha test used to measure the internal consistency of tool in this study.

#### 3. Pilot Study

A pilot study was conducted among 4 employee (10 % of the estimated sample) to evaluate the feasibility of implementing the designed tools and time required to fill in each tool. The necessary modification was carried out as revealed from the pilot and subjects included in the pilot study were excluded later from the study samples.

#### 4. Ethical Considerations

The human rights considered by explaining the aim of the study to each participant to be familiar with importance of his or her participation and assured the employees that the information obtained were confidential and used only for the purpose of the study. Consent was taken from the subject that they agree to be included in the study.

#### 5. Field Work

- Approvals:-
- A written approval was obtained from the dean of faculty of nursing before starting the data collection
- The aim of the study explained to the office managers to gain their cooperation during data collection.
- Data collection:-

• Data were collected from beginning of December 2018 to beginning of April 2019, the actual duration was three months.

- The health educational intervention were conducted in three phases:-
- Phase I (Preparatory phase)
- Phase II (Implementation)
- Phase III (Evaluation)

#### VI. Program Construction

#### 1- Phase I (Preparatory phase):

• Teaching materials were prepared as audiovisual materials, and handouts.

• The pre-test format to assess the baseline data for employees' knowledge regarding health educational intervention of smoking cessation through introducing the sheet (**Tool I**) to each employee and asked them to fill it.

• The aim of the study was explained to the employees', the average time needed to fill the questionnaire was 25-35 minutes.

#### 2- Phase II (Design and Implementation):

• The program was designed by the researcher based on the employees' needs obtained from the study tools; also, after reviewing the relevant literature in various aspects related to the study.

• The employees were divided into groups according to their working department. The health educational intervention was be implemented for each group of employee in each department.

• The health educational intervention were presented in clear and concise form and the focused on the point of learning, using different teaching methods as discussion, lecture.

• The implementation phase was taken 8 sessions (8 theoretical each session was taking 30 minutes for each group, Within 8 weeks.

• By the end of each session a summary was made and time allocated for questions and answers & plan for next session were made. Except for the last session a termination of sessions through feedback was done.

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- The program content included the following:
- An overview of the program
- Health consequences of smoking
- Second hand smoke
- The body improves after quitting smoking
- Symptoms of recovery
- Tips for dealing with the cravings
- Breathing Exercises
- The benefits of being smoke-free
- Program Booklet:

A Booklet and the pamphlet included all contents of the program, were designed and given to the partecipants as an educational reference during program implementation and as self-learning after program implementation.

#### 3- Phase III (Evaluation):-

• This phase aimed to evaluate the level of improvement in knowledge regarding smoking cessation, through post-test after the program.

• The evaluation phase (post-test) it was done through one weeks after approximately two months from the program beginning.

#### VII. Statistical methods

All Data were collected, tabulated and subjected to statistical analysis. Statistical analysis is performed by SPSS in general (version 17, 2008), also Microsoft office Excel is used for data handling and graphical presentation.

Quantitative variables are described by the Mean, Standard Deviation (SD), and the Range (Maximum – Minimum)

Qualitative categorical variables are described by proportions and Percentages.

Paired sample t test is used for comparing pre and post quantitative scales. Independent samples t test is used for comparing two groups.

For qualitative categorical variables chi-squared test is applied.

Pearson correlation coefficient and Spearman rho correlation coefficient are used for correlation analysis as appropriate.

Significance level is considered at P < 0.05 (S); while for P < 0.01 is considered highly significant (HS). Two Tailed tests are assumed throughout the analysis for all statistical tests.

## 3. RESULT

**Frequency distribution of Socio-demographic characteristics of the study group:** Half (50.0%) of the studied subjects aged 20-30 years with a mean age of  $(33.05 \pm 7.977)$ , about (82.5%) of the studied sample were married. About (60%) of the studied sample came from urban areas as shown in **table (1)**.

**Table (2) shows that** more than two thirds of studied subjects had 6-10 years of smoking ,45% of them used to smoke 5-10 cigarettes per day,more than half of them (60.0%) started to smoke at the age of <20 years. Only 37.5% had attempted to quit smoking and the number of attempts smoking cessation was one time. The most common reasons for trying to quit were advice and example from others and cost of cigarettes (50.0%, 40.0%, respectively).

Table (3) clarifies that there was statistically significant different (<.05) improvement in the knowledge of studied sample about smoking post implementation of the program compared to pre implementation of the program.

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Table (1) Frequency distribution of	Socio-demographic characteristics	of the study group	(n=40):
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Sacia democranhia shawatawiting		Total partici	pants (n=40)
50010	o-demographic characteristics	No.	%
Age (years)	20-30 years	20	50.0
Range (20-55)	31-40 years	13	32.5
	41-50 years	5	12.5
	<60 years	2	5.0
	Mean ±Std. Deviation	$33.05 \pm$	7.977
Marital Status	Single	7	17.5
	Married	33	82.5
Educational level			
Secondary education		19	47.5
Higher education		21	52.5
Occupational status	Non-working (unemployed)	0	0.0
	Working (employed)	40	100.0
Type of family	Nuclear	19	47.5
	Extended	21	52.5
Residence	Rural	16	40.0
	Urban	24	60.0

#### Table (2) Frequency distribution of employee smoking history (n=40) :

	Total participants (n=40)				
Employee smoking history	No.	%			
Smoking duration	1-5years	4	10.0		
	6-10 years	26	65.0		
	11-15years	6	15.0		
	16-20 years	4	10.0		
The number of cigarettes per day	5-10 cigarettes	18	45.0		
	11-15 cigarettes	2	5		
	16-20 cigarettes	10	25.0		
	>20 cigarettes	10	25.0		
Age on start smoking	<20 years	24	60.0		
	20-24 years	8	20.0		
	25-30 years				
	4	10.0			
First cigarette smoking after waking up					
	Within 5 minutes	22	55.0		
	4	10.0			
	More than hour	14	35.0		
	500 pounds	8	20.0		
The cost of signature during the month	> 500 : < 1000	10	25.0		
The cost of cigarettes during the month	pounds				
	>1000 pounds	22	55.0		
Factors that keeping you smoking	Lonely	0	0.0		
	Stress	18	45.0		
Family member		0	0.0		
	Friends				
	10	25.0			
Attempts to quit smoking	15	37.5			

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Employee queling history items	Total participants (n=40)		
Employee shoking instory items		No.	%
	No	25	63.5
Number of attempts smoking cessation	Once	22	55.0
L C	Twice	8	20.0
	Five times	4	10.0
	Six times 6 stop smoking less than week 10		15.0
Duration in the last take-off attempt to stop smoking	ng less than week 16 1-2 week 20 5.6 month 4		40.0
	1-2 week	20	50.0
	5-6 month	4	10.0
Count of member that help quit smoking	no one	16	40.0
	1-5 person	18	45.0
	more than10 person	6	15.0
The reason for trying to quit smoking	Family pressure	ssure 4	
	Advice and example	20	50.0
	from others		
	Cost of cigarettes	16	40.0
	Restrictions in the	0	0.0
	workplace and public		
	transport.		
Methods for quit smoking	Willpower22Change attitude12		55.0
	Change attitude	12	30.0
	Family assistant	6	15.0
The most influential person to quit smoking			
The most minerical person to dam smorthly	Family member	24	60.0
	Work colleagues	12	30.0
	Doctors	4	10.0
The most important factors affecting you to smoke		<i>c</i>	15.0
when trying to quit?	Sit with smoker	6	15.0
	Stress	26	65.0
	Lonely	4	10.0
	all above	4	10.0
The most negative factors for relapse	Low self -esteem	14	35.0
	Effect of other smoker	10	25.0
	Lack of the smoking	16	40.0
	cessation methods		

Table (3) Distribution frequency of knowledge about smoking of employee (n=40).

It and		Pre-knowledge		Post- knowledge			
Item	Answer	No.	%	No.	%	t-test	P value
Parents smoking effects on	Correct	12	30.0	36	90.0	6.059	000***
children	Incorrect	28	70.0	4	10	0.938	.000
Smoking effect smoker health	Correct	29	72.5	34	85.0	1 533	133
only	incorrect	11	27.5	6	15.0	1.555	.155
Children expose for smoking risk	Correct	13	32.5	33	82.5	5 002	.000***
for pneumonia	incorrect	27	67.5	7	17.5	5.992	
	Correct	12	30.0	36	90.0	7 1 2 3	.000***
Cigarette components	incorrect	28	70.0	4	10	7.125	
Adhesive dark produced when	Correct	11	27.5	38	95.0	0.108	.000***
tobacco is burned	incorrect	29	72.5	2	5.0	9.190	
Dangerous gas produced by	Correct	2	5.0	32	80.0	0.884	.000***
cigarettes	incorrect	38	95.0	8	20.0	7.004	
Smoking types	Correct	4	10.0	36	90.0	10.840	.000***
	incorrect	36	90.0	4	10	10.649	

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Narcotic substance results from smoking effect in heart and brain.	Correct incorrect	4 36	10.0 90.0	35 5	87.5 12.5	8.149	.000***
Physical dependence	Correct incorrect	6 34	15.0 85.0	38 2	95.0 5.0	12.338	.000***
Substance of tobacco not harm	Correct incorrect	0 40	0.0 100.0	37 3	92.5 7.5	12.523	.000***
Tar produce from cigarette cause alveolar collapse	Correct incorrect	4 36	10.0 90.0	36 4	90.0 10	12.029	.000***
Factors that leads to smoking cigarette	Correct incorrect	0 40	0.0 100	38 2	95.0 5.0	19.463	.000***
Disease causes lung damage	Correct incorrect	2 38	5.0 95	36 4	90.0 10	15.064	.000***
Diseases cause irritation in airway	Correct incorrect	4 36	10.0 90.0	38 2	95.0 5.0	16.580	.000***
Disease cause from smoking cigarette	Correct incorrect	14 26	35.0 65.0	38 2	95.0 5.0	4.088	.000***
Effect of smoking in body system A. Gastrointestinal tract effect	Correct incorrect	5 35	12.5 87.5	39 1	97.5 2.5	6.958	.000***

P value is significant <.05

# 4. DISCUSSION

Currently, societies have sufficient opportunity to access correct information regarding smoking and its adverse impacts. Consequently workers should have high awareness towards the hazards of smoking. Comprehensive knowledge about smoking influences the attitude and practice towards smoking. The majority of smokers have the intention to abandon smoking, but some issue may inhibit their aim (**Uppal et al., 2013**).

The determination of the most effective smoking cessation interventions in the middle and advanced age periods is needed. It has been aimed to increase the success of smoking cessation prevalence and preventing tobacco dependence. In order to achieve success in smoking cessation activities, it is crucial to determine the most effective interventions and apply them to the practice (**TERZİ et al., 2019**).

In referral to the personal characteristics of the participated workers; the present study showed that 50.0% of them aged 20-30 years; this result in agreement with (Martínez et al., 2018), who studied "Impact of an online training program in hospital workers' smoking cessation interventions in Bolivia, Guatemala and Paraguay", and reported that 51.0% of them  $\leq$ 35 years. On the other hand this result disagreed with (La Torre et al., 2019) , who studied "Effectiveness of a training course on smoking cessation knowledge and behaviour for health profession students" and mentioned that nearly three quarter of the studied subject aged 19-24 years.

In referral to employee smoking history items; the present study showed that more than two thirds of studied subjects had 6-10 years of smoking ,45% of them used to smoke 5-10 cigarettes per day,more than half of them (60.0%) started to smoke at the age of <20 years.

This result in agreement with(**Abdulateef et al., 2016**), who studied "Smoking Knowledge, Attitude, and Practices Among Health Care Professionals from Sulaymaniyah City/Iraq" and reported most of the smokers smoked less than 10 cigarettes per day. This also agreement with WHO survey on health care professionals of Eastern Mediterranean Region; which resulted that average cigarette smoked per day was 16 in WHO survey on health care professionals of EMR,35 and it was lowest in Saudi Arabia (11 cigarette per day).

Also in the line with (Abu Shomar et al., 2014) who reported that, 74.1% initiated smoking cigarettes at < 18 years of age and the average number of cigarettes smoked daily was 14 cigarettes. This is in consonance with (Taha et al .,2010) who reported that 64% of the studied sample started smoking at 16–18 years.

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On the other hand these results disagreeing with (**Mostafa & Momen, 2017**), who studied "Effect of physicians' smoking status on their knowledge, attitude, opinions and practices of smoking cessation in a University Hospital, in Egypt", and reported that, more than half of them (52.7%) started to smoke at the age of between 20 and 30 years with 33.0% of them had 5–10 years of smoking. About (31.3%) used to smoke less than five cigarettes per day.

Regarding to reasons to smoke the present study revealed that most of them were to reduce/relieve work-related stress and friends(48.2%,30.0%, respectively). Only 37.5% had attempted to quit smoking and the number of attempts smoking cessation was one time. The most common reasons for trying to quit were advice and example from others and cost of cigarettes (50.0%, 40.0%, respectively).

These results were corresponding with (Mostafa & Momen, 2017), who studied "Effect of physicians' smoking status on their knowledge, attitude, opinions and practices of smoking cessation in a University Hospital, in Egypt", and reported that the reasons to smoke for most of them were to reduce/relieve work-related stress and improve sociability among peers (66.1 and 48.2%, respectively). Only 45.5% have attempted to quit smoking.

Also in the line with(**Abu Shomar et al., 2014**), who studied"Smoking, awareness of smoking-associated health risks, and knowledge of national tobacco legislation in Gaza, Palestine" and reported that current smokers' main reasons for smoking were peer pressure (32.3%), stress release (29%).As regards to quitting, 81% of our current cigarette smokers tried to quit smoking at least once during their life, and 53% expressed readiness to quit if cessation assistance was provided.

From the researcher point of view young people start smoking to enhance their social status, relieve anxiety, for stimulation, out of curiosity, or peer pressure . Indeed, many smokers started smoking for entertainment purposes , and curiosity was significant for initiation . Our sample cited stress release as reason for smoking initiation, suggesting that workers need knowledge about stress management strategies to help them cope with stressors and not depend on smoking for stress relief (**Abu Shomar et al., 2014**).

More than half of studied sample first cigarette smoking after waking up Within 5 minutes. These results were corresponding with (Solberg et al., 2007)who studied "Smoking and Cessation Behaviors Among Young Adults of Various Educational Backgrounds", and reported that 20% of the studied sample first cigarette smoking after waking up Within 5 minutes.

The study findings also illustrated that more than half of the studied subjects method for quit smoking was depended on their willpower ,and two third of them family member were considered the most influential person to quit smoking .

**More** than two third of them reported that the most important factor affecting them to smoke when trying to quit was stress.Less than half of them reported that the most negative factors for relapse was lack of the smoking cessation methods. These results were corresponding with(**Mostafa & Momen, 2017**) who studied "Effect of physicians' smoking status on their knowledge, attitude, opinions and practices of smoking cessation in a University Hospital, in Egypt" and reported that the most common reasons for not trying to quit were fear of loss of way to handle stress (52.7 %).

The current study revealed that there was statistically significant (p<.05) improvement in all items of Knowledge of studied sample about smoking cessation from pre- to post implementation of a training program. These results are in agreement with(Abdelazim et al., 2018), who studied "Effect of training program regarding smoking cessation counseling for primary health care physicians in Port Said City, Egypt", and reported that highly significant improvement in primary care physicians' knowledge, attitude, and practice scores from pre- to post-implementation of a training program regarding smoking cessation counseling with acceptance of the alternative hypothesis.

The significant improvement in total knowledge scores was also consistent with a previous study by **Labib et al. (2012)** conducted among internal medicine residents at Cairo University Hospitals, Egypt. Also, another study by **Guoet al. (2010)** in Taiwan showed significant improvement in knowledge scores of trainees from different specialties, explaining their lack of knowledge in the pre-intervention by no previous courses on teaching smoking cessation in their medical schools along with few continuing medical education courses related to this issue.

However, the study by **Strayer et al. (2013)** found that overall smoking cessation knowledge was unchanged after the intervention.

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As regard to relation between the employee's knowledge and selected demographic variables such as age, level of education, marital status, family income and occupational status the present study showed that there were statistically significant relation between knowledge (pre and post implementation of a training program) and occupational status. There also was statistically significant relation between knowledge (pre implementation of a training program) and family income.

As regard to relation between the employee's history and pre and post knowledge the current study revealed that there were statistically significant significant relation between knowledge (pre and post implementation of a training program) and Smoking duration, Age on start smoking, Count of member that help quit smoking, and The most negative factors for relapse

There also were statistically significant relation between knowledge (pre implementation of a training program) and attempts to quit smoking and methods for quit smoking

#### 5. CONCLUSION

Implementation of a training program on smoking cessation led to markedly improved knowledge of smokers work in Faculty of Nursing at Suez Canal

#### 6. **RECOMMENDATIONS**

- Continuous educational and training programs for workers about smoking and smoking hazards.
- Distributes educational booklet about smoking and smoking hazardsfor for workers.

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