

Health Intervention Programme on Education Against Tobacco at Secondary School in Malaysia

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Abstract

The school intervention program aimed to create awareness among the secondary school students regarding the harm of cigarette smoke. A total of 70 participants took part in the program. The age bracket of participants was in between 13-16 years. The program was divided into four stations. Station 1 conducted an activity showing the effects of smoking on lungs whereas station 2 illustrated about the consequences of tobacco usage on one's complexion, teeth and overall skin appearance in the long term with the aid of the 'smoker face' app. Station 3 demonstrated about arteriosclerosis, with the aid of models and also about the systemic disorders occurring due to tobacco usage which affects different organs, and the last station 4, discussed regarding the different phases of tobacco usage. School health intervention program such as education against tobacco can prevent youths from starting to smoke and help youths stop smoking.

Keywords: Smoking, Smoking cessation, Tobacco, Education against tobacco, Tobacco use disorder, Skin, Secondary school, Prevention, Students, Awareness, Adolescents

Introduction

A school health program in an integrated set of planned, sequential, school-affiliated strategies, activities and services designed to promote the optimal physical, emotional, social and educational development of students. The significance of giving school age special considerations is because they constitute a big sector of the population (about 1/6). This sector is easily reached through schools, as by law, children are compelled to attend schools and spend about half of their day for a period of 9 years. Furthermore, school people are considered a vulnerable group. They are growing exposed to physiologic, mental and emotional stress at home or school. In addition, school pupils are very active and curious, thus they're liable to accidents. Health status of pupil is a strong determinant of their school achievement. Therefore, school years are the best opportunity for health education.

Smoking is the single most important preventable cause of death. The teenage is a critical period in the formation of the smoking habit. Globally, smoking is still on the rise among teenagers. The habit of smoking is considered a true drug addiction and is widespread all over the world.¹ Smoking-related diseases such as cancer and cardiovascular disease are the main cause of premature death worldwide.² The current global estimate of 1.3 billion smokers is expected to increase to 1.6 billion by 2025, and the number of deaths due to smoking-related diseases is expected to reach 8.3 million by 2030, up from 4.8 million in 2006.³ In Malaysia, smoking-related diseases have been the primary cause of mortality for the past three decades.⁴ In Malaysia, there are 5 million

smokers who are classified as children or adolescents younger than 18 years old as of 2010.⁵

Cigarette smoking is a known cause of at least 25 diseases, including lung and other cancers (bladder, cervical, esophageal, kidney, laryngeal, oral, pancreatic and stomach, and acute myeloid leukemia), heart disease, stroke, chronic obstructive pulmonary disease, acute respiratory illnesses, and adverse reproductive effects (including sudden infant death syndrome). Smoking kills one-third to one-half of all lifetime users, and smokers die an average of 15 years earlier than nonsmokers. In 2010, tobacco will kill 6 million people, 72 percent of whom reside in low- and middle-income countries. Tobacco smoke, which is known to be one of the harmful substance in cigarette, contains more than 7000 chemical compounds. Many of these agents are toxic, and more than 69 - including polyaromatic hydrocarbons (PAHs) and tobacco-specific nitrosamines-cause cancer.⁶ Asia Metropolitan University, Faculty of Medicine is connected to Education Against Tobacco in Germany, a multinational network driven by medical students and physicians of more than 80 medical schools located in 14 countries around the globe. Their mission is to support informed-decision-making of 10-16 year old adolescents by the help of school based prevention, to educate the public by app based campaigns and to improve smoking cessation counselling by influencing medical education. In conjunction with this, the school that we chose to conduct our health intervention program this year is Sekolah Tinggi Muar or Muar High School.

Sekolah Tinggi Muar or High School Muar (HSM) was founded in 1902 and began as a Government English school. Around 1957-1959, it became the center for DTC Teachers Training Centre and in 1965-1967 it became the center for RTC Training. For the first time in 1965 the school took in Form Six students to cater the needs of students from Northern.

Methodology

General structure

- In this section, the medical students start introducing themselves to the participants of Form 1 students of High School Muar.
- General view and knowledge on smoking were tested among them to see their awareness and self-experience.
- They were asked to do some light cardio exercises which called 'Latihan Penyedut Minuman' which comprises of jumping jack, sit-up, and squat for 2 minutes. They need to breathe through the straw provided.
- After the activity, participants were divided equally into 4 groups for the 4 stations.

Station 1: Different ways of consuming tobacco and extraction of visible components of tobacco smoke

Set-up:

Images of "Ways of consuming Tobacco" are placed on a table together with lungs model.

"Plastic Lung" experiment.

Procedure: In an open area, bottles with holes on the lids are attached to a cigarette are prepared.

Goals:

To educate the students about the different forms of tobacco.

To demonstrate the effects of tobacco to our lungs.

Experiment “Plastic Lungs”.

Materials Used:

Materials	Quantity
Bottles	4
Cigarette	2 boxes
Lighter	1
Laminated pictures of different forms of Tobacco	12
Lung model	1
Tissues	1 packet

Activity:

Time	Activity	Instructions	Resources
10 min	Different Ways of Consuming Tobacco	<p>Discussion on different ways of consuming tobacco and emphasized on effects of smoking to the lungs based on the images set up on the table.</p> <p>Different forms of tobacco was set up (in pictures) to educate the students not to consume any product related to tobacco.</p>	<p>Light & menthol cigarette: https://cdnph.upi.com/svc/sv/i/8341495456260/2017/1/14954598159735/Use-of-light-cigarettes-linked-to-rise-in-lung-adenocarcinoma.jpg</p> <p>Pipe: https://www.pipeshop-saintclaud.com/17645-large_default/butz-choquin-regence-1304-pipe.jpg</p> <p>Kretek: https://www.ciggiesworld.ch/wp-content/uploads/2017/11/kretek.jpg</p> <p>Hookah:</p>

[https://
cdn.shopify.com/s/
files/1/1189/1924/
products/130040_3-
min.png?
v=1530187905](https://cdn.shopify.com/s/files/1/1189/1924/products/130040_3-min.png?v=1530187905)

Sinus tobacco:

[http://
i102.photobucket.com/
albums/m81/briaryos/
2009%20Army/
09camel400.jpg](http://i102.photobucket.com/albums/m81/briaryos/2009%20Army/09camel400.jpg)

Chewed tobacco:

[http://
mediad.publicbroadcast
ing.net/p/wpr/files/
styles/medium/public/
201202/chewing-
tobacco77.jpg](http://mediad.publicbroadcasting.net/p/wpr/files/styles/medium/public/201202/chewing-tobacco77.jpg)

Bidis:

[http://
3.bp.blogspot.com/
_b7J54W1JOoc/
Skwqkg22HoI/
AAAAAAAAACYk/
ccDLZi6Kjxs/s400/
scan0313.jpg](http://3.bp.blogspot.com/_b7J54W1JOoc/Skwqkg22HoI/AAAAAAAAACYk/ccDLZi6Kjxs/s400/scan0313.jpg)

Cigar:

[http://
csd2018.wpengine.com
/wp-content/uploads/
2017/11/Cigar.jpg](http://csd2018.wpengine.com/wp-content/uploads/2017/11/Cigar.jpg)

Cigarette:

[https://
dehayf5mhw1h7.cloud
front.net/wp-content/
uploads/sites/
726/2018/01/25002547
/
012418_Thinkstock_Ci
garettes.jpg](https://dehayf5mhw1h7.cloudfront.net/wp-content/uploads/sites/726/2018/01/25002547/012418_Thinkstock_Cigarettes.jpg)

Vape: https://vaping.com/media/catalog/product/cache/1/image/1500x1500/9df78eab33525d08d6e5fb8d27136e95/2/0/2017-01-04-09_44_475596.png

Clove cigarette:

<http://www.wesleys.co.za/AssetsB/40s/49-DjarumOpen.jpg>

5 min	<p>Extraction of Visible Component of Tobacco Smoke</p>	<p>Some volunteers (students) were requested to help us out throughout the activity. At the open space, the bottle cap which was initially holed and inserted with the cigarette was lighted and the bottle was gently squeezed. This is to imitate the breathing lungs (bottle) while smoking the cigarette. We then gently squeezed the bottle until the cigarette shutdown. Afterwards, we removed the cigarette leftover and covered the cap hole with tissue. Soon after that, we observed the yellow or black staining on the tissue: this indicates the smoke particles entering our lungs. The more times the same tissue is used, the darker the stain is. This experiment demonstrates one of the impacts of smoking which is blackening of the lungs.</p>	<p>Mineral bottles from PETRONAS Cigarette boxes (Brand U2) Tissue from convenience store</p>
5 min	<p>Other effects of tobacco are also explained based on the chemical contents in the cigarette.</p>	<p>http://mediad.publicbroadcasting.net/p/waer/files/201801/smoker_quitline_cig_chemicals.jpg</p>	

Station 2: Effects of smoking on the face

Setup: Place images on transparency film and put tablets on the desk.

Goal: Show that consuming tobacco has visible consequences after a short period of time. At this station we have images of identical twins. We can tell them apart because

one of them smokes and the other does not. There are also tablets with the “Smokerface” app. We should illustrate clearly that staying as a non-smoker greatly benefits one’s looks. Even though their images mostly depict older people we stress that these effects are also visible in younger people even though after a short period of time.

Allocation time for each station is 20 minutes.

This station basically provides information to the students about the effects on skin and facial changes in tobacco consumption.

Materials used:

Materials	Quantity
Elastic fiber cloth	90 pieces
Plasticine	One box
Glass jar	2 units
Cotton wool	4 cotton balls
Cigarette	2 buds
Laminated images	3 images

Process:

Time	Activity	Instruction	References
2 min	Identify the differences	Students are provided with identical images and asked to differentiate the images.	http://www.vorply.com/health/list/see-how-these-smokers-look-like-compering-to-their-nonsmoker-twins/ https://perfectskinsolutions.co.uk/lifestyle/environment/alcohol/smoking/
10 min	Increased wrinkle formation/skin aging	A piece of elastic fiber cloths are given to each student to destroy it as much as they can.	Book Store
	Pigmentation disorder and teeth discoloration	A glass container with a burned cigarette and a cotton wool is kept in and the lid is closed. After sometimes the cotton wool and	Eco-Shop

the inner part of
the glass is stained.

More pimples formation An images that illustrate how pimple is developed is shown and explained. <http://www.knowabouthealth.com/basic-formation-of-pimple/2688/>

8 min Demonstration of 'Smokerface' app Students are ask to take a selfie and had a chance to play with their face, the classmates are asked to notice the differences. <https://play.google.com/store/apps/details?id=com.agt.smokerface&hl=en>

Station 3: Long term effects of tobacco smoking

Setup: Normal body images on transparency films are placed on the two canteen tables.

Goal: Long-term effects of tobacco, as well as basic notions about the human body and position of organs within the body were explained to the students.

Station 3 is then sub divided to another two stations:

1. Station 3 (A) - "Arteriosclerosis" model demonstrations.
2. Station 3 (B) - Explanation on systemic disorders due to smoking.

Materials used:

Materials	Quantity	Resources
Plastic bottles	8	Recycled bottles
Plasticine	2	
A4 box	4	Recycled A4 paper box
Plastic cups	16	Recycled cups
Water	2 liters of water	
Laminated images	3	https://www.valleyhypnosis.com/stopsmoking/ https://depts.washington.edu/growth/module7/text/page3b.htm

<https://www.shutterstock.com/image-vector/diagram-internal-organs-anatomy-human-body-593354342>

Poster 2 <https://educationtobacco.org/>

Process:

Time	Activity	Instruction	Resources
2 min	Group 3A Group 3B	The students are grouped to two groups Pairing	Not applicable
9 min	Group 3A	Arteriosclerosis model	Alternating in turns
9 min	Group 3B	Explanation on systemic disorders due to smoking	Alternating in turns

Station 3A:

Experiment: Arteriosclerosis

Procedure: Four sets of blood vessels valves were built using A4 boxes and plastic bottles.

Each set with one normal valve and one with clogged narrow vessels. Plasticine is used to clog the blood vessels.

The students then were asked to pour water using plastic cups to each vessels to compare the rate of flow of water. The narrow hose takes more time then the wider one.

Station 3B:

The students are shown different organs, especially the ones that's are most damaged by smoking (heart, lungs, brain).

The risk factors of cancer are also discussed with the students.

The systemic disorders in concerned with smoking are explained to the students with visual aids.

Station 4

Personal experiences: How can I stay away from smoking? What is smoking addiction and how do I avoid it?

Set-up: 16 cards are placed at random with statements regarding the different stages of tobacco usage. Four boxes are provided, each box labeled to the specific phase of tobacco use.

Goals: This station aims to educate the teens on the four different stages of tobacco use, namely Interest, Curiosity to Try, Habit and Addiction. By playing this station game, we

hope that they realize that tobacco addiction is something that doesn't happen overnight, but rather develops gradually. Therefore, teenagers should be wary of their thoughts and behavior patterns from the time they first develop even the slightest interest in tobacco use, as this can lead to devastating states of addiction sooner than later.

This station basically provides information to the students about the 4 phases of tobacco consumption which are interest, give a try, habit and addiction. A game was conducted in this station to check the understanding of the students about the 4 phases of tobacco consumption. First of all students were divided into several groups and a small briefing was given by the facilitators of the station regarding the 4 phases of tobacco consumption and the procedures of the game. Then, the game was conducted within a specific period of time. The winning group was awarded with goodie bags.

Total time allocated for this station was 20 minutes

Process:

Time	Activity	Instruction
2 min	Grouping	Students were divided into 2-3 groups
6 min	Briefing	A short briefing was given by the facilitator about the 4 phases of tobacco consumption and also about the procedure of the game
7 min	Game	16 cards with statements and scenarios related to the phases of tobacco cessation were given to each group. Students were required to read the statements and classify it according to the 4 phases.
5 min	Result	The number of cards classified correctly by the students were counted by the facilitators and the winners were awarded with goodie bags.

Materials Used:

Materials	Quantity
Cards with statements and scenarios	16
Boxes labeled with phases of tobacco usage	4
Goodie bags with gifts	5

4 Phases of Tobacco Consumption

Phase 1: Interest

Teenagers think that smoking is a great habit to possess, thus their desire to try it out heightens

The influence of other smokers, such as family members, provokes the teenager to smoke

The teenager wants to feel independent of his/her own decisions and often feels driven to try new things which are risky and full of adrenaline

The teenager feels very excited to see his/her favorite actor perform dangerous stunts and exhibit a macho persona on screen, which includes smoking

Phase 2: Curiosity/ Giving It A Try

Trying to imitate or adapt to habits practiced by adults and peers just to feel accepted and deemed 'cool'.

22.8% of teenagers begin trying to smoke from the age of 10 and up to 30% of this age group had already tried a stick or two of cigarettes by this point.

The issue of beauty and self-image plays a vital role among female teenagers, as they tend to believe that smoking leads to helping them maintain a slim figure.

Teens want to be more like their idols, by copying the things that their role models do or project as being 'cool'.

Phase 3: Habit

"Every time I feel stressed out at my work place, I tend to take a few minutes out of my desk to smoke a few sticks in the bathroom".

"Each time I drive long distance, subconsciously, I'll opt for a cigarette just so I don't feel exhausted and I can focus on the road".

"It is an absolute necessity for me to smoke up two cigarettes after a meal".

"Every morning, I wake up and have a cigarette for myself, or else I feel this intense desire to do so".

Phase 4: Addiction

Involving oneself in heinous crimes, such as stealing money from other people just to afford a box of cigarettes.

A destructive emotional pattern, such as easily angered, confused and anxious.

The individual finds it impossible to concentrate on anything and is constantly having urges to smoke.

Physical signs such as anxious, shivers, tachycardia and shallow breathing .

Results and Discussion

Participants' Feedback

Station 1:

Student 1: "I have learnt that the tobacco that is present in tobacco causes darkening of lungs, and later the other chemicals contents of cigarette may cause to serious diseases like lung cancer, chest pain, skin cancer and atherosclerosis. And as overall, what I've learnt from this workshop is "Don't smoke!"

Student 2: "What I have learnt from this station is that, there are different types of tobacco which causes negative impact to us. Based on the Plastic Experiment" which was demonstrated, I know that the cigarette smoke can lead to blackening of lung."

Station 2:

Student 3: “I learned so many things. They thought us how smoking affects our body. Like our skin, they use elastic as our skin represent that what happen if we smoke. Smoking is a risk factor of getting pimples and I am afraid I will look older when I smoke. The “smokerface” app was very funny. If I take my photo and see what happen after I smoke for 15 years, it looks very scary than funny to me. I must tell other people especially my family and friends about what happens if they smoke. I enjoyed this session very much and learn many things about tobacco smoking.

Station 3:

Student 4: “I learned about what will happen to our blood vessel if we smoke. In the demonstration using plastic bottle and plasticine, the blood flow with arteriosclerosis due to smoking will slow down the flow of our blood. We saw also pictures of differences between smoker and non-smoker people. I learn that if I smoke for a very long time, I can have arteriosclerosis”.

Station 4:

Student 5: “Prior to attending this program, I would have never even guessed how dangerous tobacco actually is to our internal organs. I was shocked to learn that the damage smoking causes to our lungs happens gradually, and we never realize how severely we are affected until it is too late. In addition to that, I was in dismay to discover that smoking addiction happens in stages, and we as teenagers should practice good self-control over our temptations and curiosity to try tobacco, as there is nothing adventurous about this experience, it is only destructive. I would like to thank the organizers of this activity. My peers and I have truly gained a lot of insight and we would absolutely encourage further venturing into activities as such to wider demographics”.

Supervisors’ Feedback

Supervisor 1: “The school health intervention program done in Muar High School is very vital because it teach adolescents about the dangers of secondhand smoke, build participants’ capacity to identify and resist the influence of peers and tobacco marketers, and teaches refusal skills. School administrator may also consider building partnerships with local and international providers like Education Against Tobacco in order to strengthen the efficacy of school-based cessation programs. Definitely, the hands-on training in four stations done by medical students is excellent way to convince the target audience to be away in this bad habit.”

Supervisor 2: “Smoking is responsible for a heap of awful diseases, contributing to the tobacco epidemic we face today. Health intervention program on tobacco cessation at Muar High School is the best move for prevention of such kind of smoking related diseases. From this program I believe that not only the secondary students have now an idea that smoking tobacco damages the lungs, faces, blood vessels and many organs of our bodies. This is a worth intervention program to stop smoking or not to start smoking by demonstrating bad effects with real cigarettes as well as using a famous application like Smoker Face App. In conclusion, I myself also got my shocked smoker face on next 15 years time by using Smoker Face App on phone application and I have decided not to smoke ever in my life.

Recommendations

Health intervention program in education against tobacco should be conducted in both primary and secondary schools and must be integrated in their curriculum. Reaching the mass public by social marketing and mass media intervention whilst approaching the community via community mobilization and changing the environment by media

advocacy. Developing a whole school-wide smoke-free policy in consultation with young people and staff can be an effective strategy too. This should include smoking prevention activities and staff training and development.

Conclusions

School-based interventions appear to be promising as options to help youth stop smoking. It is important for tobacco control programs to take a comprehensive approach to address the systemic, psychosocial, and environmental factors that influence smoking behavior and smoking cessation. It is imperative to continue to research and develop policies and interventions to prevent the uptake of smoking among young people.

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