

# Application of a Poster and Slogan Campaign to Prevent Smoking, in Conjunction with a Health Education Program

Tharisara Chirasatienpon

<sup>1</sup> Major of Health Education, Department of Physical education, Faculty of Education, Kasetsart University, Bangkok, Thailand

Correspondence: Tharisara Chirasatienpon, Major of Health Education, Department of Physical education, Faculty of Education, Kasetsart University, Bangkok, Thailand.

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## Abstract

Adolescent smoking is dangerous. This study examined the self-assessment of risk factors to expose student teachers to smoking, compared the scores of health belief model structures in experimental and control groups, and summarized the poster and slogan campaign to prevent smoking. The experimental and control groups (n=30 each) were selected using eligibility criteria and simple random sampling. Three-part questionnaires were used to collect information that was analyzed based on mean, minimum, maximum, percentage, and paired sample t-test data. The key findings were: 1) student teachers in the experimental and control groups had smoked 1–2 cigarettes in the past (20% and 6.67%, respectively). In addition, for both the groups, cigarettes were readily available at convenience stores in residential areas (63.34% and 83.34%, respectively), their fathers smoked (16.67% and 20%, respectively), and their peers persuaded them to smoke (16.67 % and 23.30 %, respectively); 2) the health belief model demonstrated that both the experimental and control groups at 8 weeks had comparable pre-post findings for susceptibility (p=.000 and p=0.049, respectively), perceived severity (p=.000 and p=0.063, respectively), perceived benefits (p=.000 and p=0.065, respectively), perceived barriers (p=.000 and p=0.703, respectively), and cure to action (p=.000 and p=0.070, respectively); and 3) The main study "Online Health Education Program to Prevent Tobacco Use for Student Teachers during COVID-19 Pandemic in Thailand: Design, Challenges, and Outcomes" worked on anti-smoking posters and slogans. The 8-week education program with events could enhance experimental group health beliefs. Thus, student teacher smoking prevention efforts should incorporate posters and slogans.

**Keywords:** poster and slogan campaign, prevent smoking, health belief model

## 1. Introduction

Currently, smoking is a significant risk factor for the development of chronic noncommunicable diseases (NCDs) and premature mortality. Tobacco is one of the most important global public health issues. It is the cause of 25 diseases, including chronic obstructive pulmonary disease (COPD), lung cancer, cardiovascular disease, and several types of cancer. There is also evidence that smoking can cause more than 10 types of cancer, including lung, laryngeal, esophageal, pancreatic, renal, and bladder cancers, cervical, endometrial, and gastric cancers, oral cavity, pharynx, and acute myeloid leukemia (Siegel et al., 2015). According to the Thai Health Promotion Foundation, there were 41,185 fatalities from smoking-related diseases in Thailand in 2011, including 7,907 deaths from cardiovascular disease, 9,979 deaths from lung cancer, and 6,340 deaths from other cancers. There were 10,427 fatalities from emphysema and 6,530 deaths from other smoking-related diseases (Thai health promotion foundation, 2011).

Each year, numerous adolescents enter the cycle of tobacco addiction. Thai adolescents will evolve into more than 300,000 additional smokers. According to a survey conducted by the National Statistical Office of Thailand in 2017, the average age of first smoking among the Thai population in 2014 was 17.8 years, while the average age of habitual smoking was 19.5 years. Department of Disease Control, Ministry of Public Health (2019) provided a summary of data on tobacco consumption behavior of the Thai population based on smoking rate classified by individual factors by gender found an increase in the tobacco consumption rate among the male population from 1991 to 2017. However, males experienced a lower rate of change than females, (36.42% versus 66%, respectively). In all categories, males had a higher rate of tobacco consumption than females in the same

year. In 2017, the average age of initiation to smoking across the nation was 18.1 years. In central Bangkok, the average age at which northeasterners started smoking was 17 years, while the average age at which southerners started smoking was 18 years. However, the youngest smoker was aged only 6 years.

The number of new smokers in Thailand continues to rise for a variety of reasons and factors, such as (1) adolescents whose family members and friends smoked had a higher risk of smoking than those whose family members and friends smoked and did not smoke (Chaikoolvatana, Sutti and Jaimalai (2017). ;(2) One risk factor for new smokers is being persuaded to smoke by close acquaintances; and (3), accessibility and ease of purchase (Chidnayee and Yottavee, 2018). Positive attitudes toward smoking and academic performance were also found to reduce hazardous smoking behaviors. However, the significance of family and education must be emphasized when attempting to instill a positive attitude and positive role model regarding nonsmoking.

The health belief model (HBM) is widely used in smoking cessation research (Mohammadi et al., 2017). It was substantially correlated with smoking control self-efficacy in Thailand's high schools (Silpakampises and Suesat, 2020). Consequently, the purpose of the current study was to investigate the cognitive variables to prevent smoking by applying the HBM with a campaign poster and slogan to prevent smoking and to investigate the risk factors associated with smoking among student teachers at a Thai public university. It was hypothesized that this would result in smoking prevention, which is the first line of defense against substance use.

## 2. Methodology

### 2.1 Study Design

This research was a quasi-experimental study with a two-group (pre-test and post-test) design. The participants in the experiment group (n = 30) and the control group (n = 30) were chosen using a simple random sampling method. The experiment group subjects participated in a health education program that lasted for eight weeks. The control group was only given a leaflet. However, both groups were invited to participate in the campaign activity of "creating advertising via social media and slogan," which urged people not to smoke. The flow chart for the study is provided in Figure 1.

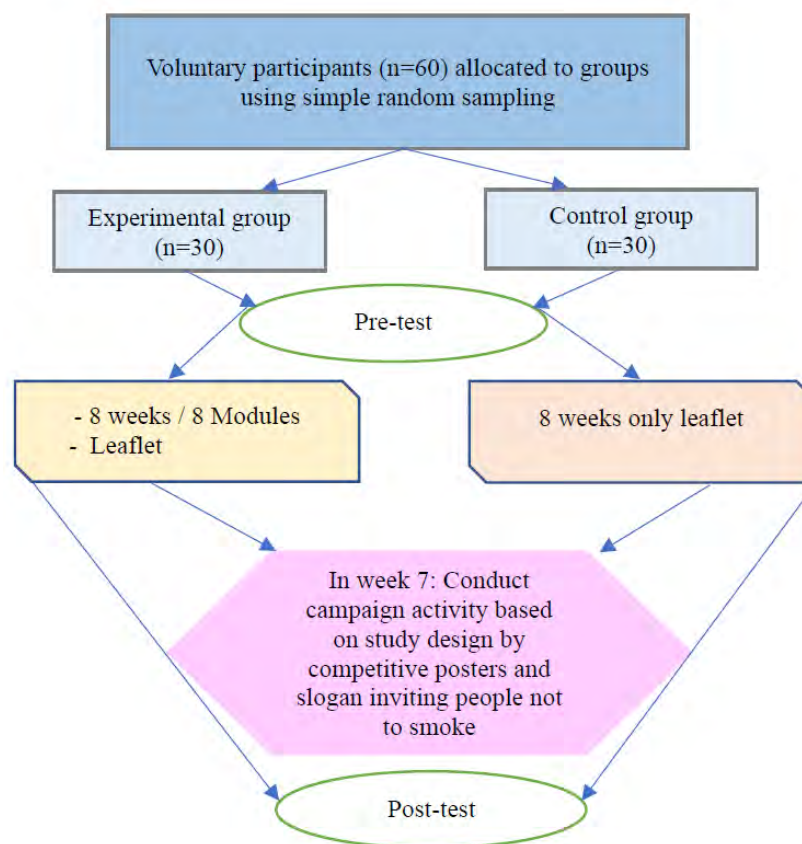


Figure 1. Study flow chart for Online Health Education Program to Prevent Tobacco Use for Student Teachers during COVID-19 Pandemic in Thailand: Design, Challenges, and Outcomes (Chirasatienpon et al., 2022)

## 2.2 Study Population and Sampling

The participants in this study were undergraduate student teachers who were in their first through to fifth year at a public university. Purposive sampling with simple random sampling was used to allocate individuals to either the experimental group ( $n = 30$ ) or the control group ( $n = 30$ ). None of the participants had ever smoked. The majority of participants in the experimental group were female ( $n = 17$ ), and their ages ranged from 18 to 23 years. Eleven of the individuals were in their first year at university. The majority of those who took part in the study's control group were female ( $n = 23$ ), between the ages of 18 and 24, and were in their third year at university ( $n = 11$ ).

## 2.3 Data Collection Tools

A panel of five experts evaluated the content validity and index of item objective congruence (IOC) of the study questions. The results were IOC values in the range 0.60–1.00. Subsequently, the questions were revised according to the advice of the experts to ensure that the validity of the questionnaire was designed using the sources and articles. Questions pertaining to the following information were included in the constructs: 1) Demographic questions about the respondent's age, academic year, and gender; 2) The risk factor smoking questions created by the researcher; and 3) Questions based on health belief models to evaluate the data from both groups (experimental group and control group). The questionnaire had 5 primary sections: perceived susceptibility (9 questions); perceived severity (7 questions); perceived barriers (6 questions); perceived benefits (5 questions); and cues to action (7 questions).

## 2.4 Data Collection

Following receiving approval from the Ethics Committee of Kasetsart University, Bangkok, Thailand, the researcher contacted the willing volunteers who fulfilled the qualifying requirements. Participant information sheets were distributed to each participant and a signed informed consent form was collected from each participant before any activity was carried out. Google forms were used to collect the responses to the questionnaire for this study.

## 2.5 Data Analysis

Mean, minimum, maximum and percentage were used to analyze descriptive statistics for quantitative variables, while count and percentage were used for categorical variables.

Pre-test and post-test administration results for the experimental and control groups were compared using a paired sample t-test.

## 2.6 Ethics Consideration

This research received approval from the Research Ethics Committee of Kasetsart University (KUREC) on November 25th, 2020 with the code no. COE63/238. The committee's purpose was to assess research proposals involving humans to ensure the proposed research complies with the University's ethical standards.

### 3. Results

Table 1. Frequency of contributory risk factor to smoking among student teachers (n=60)

Contributory risk factor to smoking	Experimental group (n=30)		Control group (n=30)	
	Frequency	Percentage	Frequency	Percentage
<i>Exposure to smoking</i>				
You smoked 1–2 cigarettes in the past	6	20.00	2	6.67
You think you are at risk of smoking due to stress	2	6.67	1	3.34
You have been persuaded to smoke by friends	5	16.67	7	23.30
You have been persuaded to smoke by relatives (cousin)	1	3.34	0	0.00
Your father smokes	5	16.67	6	20.00
Your mother smokes	1	3.34	0	0.00
Your brother or sister smokes	6	20.00	4	13.34
Your aunt or uncle smokes	2	6.67	2	6.67
Your grandfather smoked	1	3.34	1	3.34
In residential areas, cigarettes can be easily purchased from convenience stores	19	63.34	25	83.34
<i>Feeling regarding smoke</i>				
You feel indifferent when you see someone smoking near you	9	30.00	8	26.67
You quickly leave the area when you see someone smoking near you.	18	60.00	21	70.00
You show a dissatisfied reaction when you see someone smoking near you	2	6.67	1	3.34
You rebuke someone when they are smoking near you	1	3.34	0	0.00
<i>Future exposure to smoke</i>				
You may not smoke if an acquaintance or friend invites you to smoke	1	3.34	1	3.34
You might smoke if an acquaintance or friend invites you to smoke	3	10.00	0	0.00
In the next 12 months you may not smoke	1	3.34	0	0.00
In the next 5 years you may not smoke	0	0.00	0	0.00

#### Findings from Table 1

- Expose to smoking; A small number of participants in both groups had been exposed to smoke, had smoked 1–2 cigarettes at some point in their lives and nevertheless, some people had been exposed to smoke to relieve stress. In residential areas, the ease with which cigarettes can be acquired from convenience stores and the fact that members of the student teacher's own family are smokers were all factors that had an impact on the student teacher's exposure to smoking.
- Feeling regarding smoke; When the majority of members of both groups saw someone smoking nearby, they quickly left the area.
- Future to expose smoke; There is a possibility that some members of the experimental group are smokers if they have been invited to smoke by a friend or acquaintance.

Table 2. Comparison of scores for health belief model structures in experimental group and control group of Health Beliefs Model for the susceptibility, perceived severity, perceived benefits, perceived barriers and cues to action of student teachers (n=60)

Variables	Group	Prior intervention (week 1)			Post intervention (week 8)			t	Sig. (2 tails)		
		Minimum	Maximum	Mean	SD	Minimum	Maximum			Mean	SD
Person's susceptibility	Experimental	2.44	5.00	4.04	0.64	4.00	5.00	4.80	0.33	-8.431	.000*
	Control	3.33	5.00	4.16	0.45	3.33	5.00	4.24	0.44	-2.055	.049*
Perceived severity	Experimental	3.00	5.00	3.97	0.53	4.00	5.00	4.86	0.26	-10.406	.000*
	Control	3.71	5.00	4.22	0.40	3.85	5.00	4.01	0.41	-1.930	.063
Perceived benefits	Experimental	2.83	5.00	4.14	0.54	4.00	5.00	4.89	0.26	-8.872	.000*
	Control	3.83	5.00	4.28	0.40	3.83	5.00	4.37	0.39	-1.917	.065
Perceived barriers	Experimental	2.00	5.00	4.06	0.80	3.00	5.00	4.77	0.49	-7.377	.000*
	Control	3.80	5.00	4.48	0.49	4.00	5.00	4.50	0.48	-3.385	.073
Cues to action	Experimental	2.85	5.00	4.13	0.55	4.00	5.00	4.73	0.39	-7.430	.000*
	Control	3.85	5.00	4.23	0.40	3.85	5.00	4.34	0.44	-1.878	.070

\*P-value < 0.05

Findings from Table 2

Comparing the scores of the HBM structures in the experimental and control groups (person's susceptibility, perceived severity, perceived benefits, perceived barriers, and cues to action of the student teachers), we found that the experimental group had significantly higher scores than the control group.

The significance level comparisons of the pre-post results for the experimental and control groups, respectively, at 8 weeks were: person's susceptibility (p=.000; p=0.049), perceived severity (p=.000; p=0.063), perceived benefits (p=.000; p=0.065), perceived barriers (p=.000; p=0.703), and cues to action (p=.000; p=0.070). Thus, the susceptibility of the individual was substantial for both groups during week 8, which indicated that student teachers had a propensity for smoking.

In week 7, a campaign was conducted using posters and slogans that encouraged people not to smoke. The finding was:

**Poster;** The majority of the information on the posters from both groups of participants contained direct and indirect health effects of smoking.

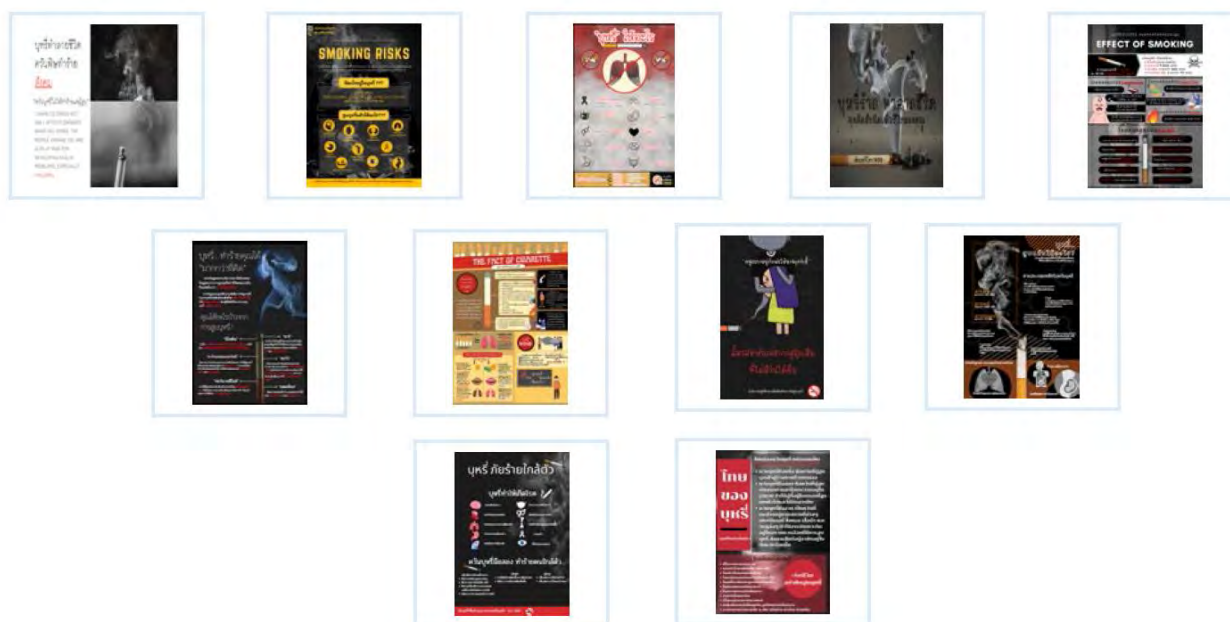


Figure 2. Participants from both experimental and control groups created these posters to encourage not smoking

**Slogan;** Both groups of volunteers composed anti-smoking slogans using concise and easily understood language. The messaging conveyed the hazards of smoking, and the hazards of secondhand smoke to those in close proximity to smokers

Table 3. Participants in experimental and control groups created their own slogans

No.	Slogan inviting people not to smoke
1.	Smoking is harmful to your lungs. Chronic smoking severely damages the airways, which should be preserved I hope you bid farewell to cigarettes for a very long time.
2.	Do not smoke, have a good life and good fortune, do not look bad in public by smoking.
3.	Don't even consider attempting to kill yourself with cigarettes.
4.	If you want to know something that could be harmful, cigarettes contain a toxin that is extremely lethal. Simply take a deep breath and smell the body. Might kill all acquaintances.
5.	Tobacco is toxic; think twice before trying it.
6.	Heart disease is caused by smoking. We were upset, and we eventually lost her.
7.	Cigarette smoking is harmful to those around you.
8.	Your life will be ruined by cigarettes, so think carefully before you start smoking.
9.	Tobacco smoke is toxic for the smoker and people nearby.
10.	Just think and avoid taking the risk. Avoid today for a better life tomorrow.
11.	Nicotine is bitter, eating candy is better.
12.	Keep your lungs for breathing, it's better than dying because of the poison from smoking.
13.	Smoke, smoke life, have the right to die.
14.	Tobacco is poisonous and life threatening. If you care about someone close, don't make the mistake of smoking.
15.	Tobacco, danger to life, toxic to society.
16.	Love life, don't think about smoking.
17.	A single "roll" is a silent threat. "Killed countless lives" because of its poison.

## 4. Discussion

### 4.1 Contributory Risk Factors to Smoking among Student Teachers

During the course of research, hypotheses were put forward regarding the connection between social pressure and the act of smoking, such as the social influence of one's family and friends is correlated with the development of a dependence on nicotine as well as the habit of smoking.

#### 4.1.1 Family Member

Participants learned about the dangers of smoking from family members, including their father, mother, sibling, aunt or uncle, and grandfather, according to this study. There is also substantial evidence from prospective cohort studies that parental smoking contributes to the familial propagation of cigarette smoking by increasing the likelihood that their children will become smokers (Alberg and Korte, 2014). According to a study by Saari, Kentala, and Mattila (2014), adolescents who are exposed to cigarette smoke at home are more likely to try smoking; a parent who smokes makes an adolescent more receptive to nicotine.

#### 4.1.2 Friend

According to the findings, one of the contributing factors to smoking was being encouraged to do so by friends. According to Suranartwatchawong and Sombat (2022), there are several ways in which friends can influence cigarette use, such as through the modeling of risky behaviors and through normative peer pressures. This was consistent with the statement that there are several ways in which friends can influence cigarette use. Nonetheless, the number of friends who smoke is the most prevalent risk factor associated with cigarette usage, and it is a stronger predictor than other measures of peer influence Liao Y et al., (2013).

#### 4.1.3 In the Residential Area, Cigarettes Can Be Easily Purchased from Convenience Stores

Based on the findings, the fact that cigarettes are readily available for purchase in local convenience stores led to an increased risk of smoking among the participants. There is also evidence from Siegel et al., (2022) that residing in locations with a high density of tobacco shops contributes to pro-smoking attitudes and a greater initiation of cigarette smoking among adolescents. Living in close proximity to tobacco merchants has been prospectively associated with a reduced likelihood of quitting smoking among persons who are presently smokers because living in close proximity to tobacco retailers can provoke cravings and increased smoking.

#### 4.2 Health Belief Model Constructs Along With Health Education to Prevent Smoking

The HBM was used in this study to help participants avoid smoking. The findings showed that the HBM questionnaires had a significant impact on the post-test for the experimental group. This outcome was in line with the findings of Tawfik, Soliman, and Elotla (2022), who reported that following the intervention, the percentage of students who had high scores on knowledge and belief tests significantly increased compared to the control group. Furthermore, Pribadi and Devy (2020) discovered that there was a substantial association between the intention of young adult smokers to quit smoking and the perceived factors of the HBM. Furthermore, Reisi et al., (2014) suggested that the constructs of the HBM can be incorporated when examining the predictors of cigarette smoking and developing smoking prevention programs among pre-college students. These researchers were led by the hypothesis that the constructs of the HBM could be used to predict whether or not a student would smoke cigarettes. Furthermore, with a greater understanding of the elements affecting this complicated habit (smoking cigarettes), it may be possible to take useful steps toward lowering the incidence of deaths, lowering expenses, and also improving the health outcomes for the community as a whole.

#### 4.3 Week 7: Conduct a Campaign Using Posters and Slogans Inviting People Not To Smoke

The researcher invited all participants in both groups to create posters and slogans urging people not to smoke during the seventh week of the study. Each participant in this event used a free computer program called Canva to create a poster emphasizing the importance of not smoking. In total, 17 participants submitted slogans for the competition. In addition, this campaign could encourage participants to abstain from smoking because, when designing their poster or slogan, they would personally contemplate the information and dangers of smoking. Australia's first national campaign against smoking was the National Warning Against Smoking campaign between 1972 and 1975. The campaign consisted of anti-smoking posters and slogans. It was Australia's most concentrated and long-lasting mass media campaign against tobacco use. One of the program's greatest strengths was the collaboration between national, state, and territory administrations and non-government organizations in its development and operation. During this national tobacco campaign, there was a substantial decline in the prevalence of smoking among Australian adults. The campaign survey findings, regarding advertising recall, recognition, evaluation, new learning, and changes in health beliefs and attitudes were consistent with contributing to these smoking prevalence changes. Overall, the results of campaign surveys indicated that the majority of the target audience saw and remembered the campaign advertising, with levels of prompted recognition of approximately 90%. About one-half of the smokers who recognized the campaign advertising reported that it increased their likelihood of quitting (Tobacco in Australia, 2019).

In Thailand, numerous organizations have supported anti-smoking campaigns. In 2021, it was announced that Thaksin University, in collaboration with digital communicators, would hold a contest for the design of a campaign poster with the motif "Young (no) smoking or not" for public relations and campaigning purposes. This campaign aimed to encourage society to recognize and understand the hazards of smoking in public areas, including the opportunity for students and the general public to demonstrate their design skills, knowledge, and creativity in the design stage. They had the opportunity to present their work to the public (Thaksin University, 2021).

### 5. Conclusion

It was determined that having a family member or acquaintance who smokes can influence student teachers to begin smoking themselves. It was possible to enhance health education by employing HBM constructs. This includes the individual's sensitivity, perceived severity, perceived advantages, perceived barriers, and action cue. In conjunction with a health education program, a campaign of anti-smoking posters and slogans will be more effective in preventing student teachers from smoking. In order to reduce the number of adolescents who smoke, it is recommended that significant consideration be given to the aforementioned factors when developing educational programs. It would be beneficial to conduct additional research to determine whether or not increased participation and prolonged intervention could be successful additions to the campaign.

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**Appendix**

Table 1. Questions of Health Belief Model

<p>Person’s susceptibility (9 questions)</p> <ol style="list-style-type: none"> <li>1. Do you think smoking puts you at risk of lung cancer.</li> <li>2. Do you think smoking puts you at risk of heart disease and stroke.</li> <li>3. Do you think that smoking puts you at risk of gastritis?</li> <li>4. Do you think smoking puts you at risk of emphysema</li> <li>5. Do you think that smoking puts you at risk of hyperlipidemia?</li> <li>6. Do you think that smoking puts you at risk of getting COVID-19?</li> <li>7. Do you think smoking puts you at risk of oral cancer?</li> <li>8. Do you think that smoking puts you at a higher risk of gum disease and tooth decay than a non-smoker/</li> <li>9. Do you think that non-smokers exposed to smoke will have the same risk of developing various diseases as those who smoke/</li> </ol>
<p>Perceived severity (7 questions)</p> <ol style="list-style-type: none"> <li>1. Do you think that diseases caused by smoking, such as an ischemic stroke, can lead to paralysis?</li> <li>2. Do you think that cigarette smoke exacerbates the symptoms of allergy sufferers?</li> <li>3. Do you think that emphysema or lung cancer are diseases that have no cure?</li> <li>4. Do you think people who smoke have indigestion or more anorexia than non-smokers?</li> <li>5. Do you think that emphysema causes you to feel tired all the time until it causes death?</li> <li>6. Do you think that on average people with lung cancer will live about 6 months after symptoms begin, or die within 1 year?</li> <li>7. Do you think ischemic heart disease (when the blood vessels constrict, resulting in blood being unable to supply to the heart) causes chest pain, which can lead to death?</li> </ol>
<p>Perceived benefits (6 questions)</p> <ol style="list-style-type: none"> <li>1. Do you think that not smoking makes you healthy?</li> <li>2. Do you think that not smoking makes your lungs healthy and it is easier to breathe?</li> <li>3. Do you think that not smoking makes a good personality?</li> <li>4. Do you think that not smoking reduces the risk of cancer?</li> <li>5. Do you think that not smoking is a good role model for those around you?</li> <li>6. Do you think that not smoking will help you to save money?</li> </ol>
<p>Perceived barriers (5 questions)</p> <ol style="list-style-type: none"> <li>1. Do you think you couldn’t turn down a friend or acquaintance if they asked you to smoke?</li> <li>2. Do you think you could avoid trying smoking if your close friends smoke?</li> <li>3. If there were new products related to cigarettes such as e-cigarettes or cigarette gum do you think you could restrain yourself from trying them?</li> <li>4. If there is propaganda about the advantages of cigarettes, could you restrain yourself from trying smoking?</li> <li>5. Do you think that if you are stressed you could avoid trying smoking?</li> </ol>
<p>Cues to action (7 questions)</p> <ol style="list-style-type: none"> <li>1. Did you know that if you try smoking just once, you can become addicted?</li> <li>2. Did you know that if you smoke, you may contract various diseases related to smoking, such as lung cancer, emphysema, cardiovascular disease, and other diseases?</li> <li>3. Do you think that if your family or close friends don’t smoke that you won’t try smoking?</li> <li>4. Did you know that if you smoke, you will have bad breath and body odor?</li> <li>5. Did you know that people who smoke are debilitated and look older than their actual age?</li> <li>6. You know that if you do not smoke, you can save that money to buy things you want?</li> <li>7. If you received information about the dangers of smoking, would you not want to try smoking?</li> </ol>

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