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The Effects of a Smoking Cessation Program for Thai Vocational College Students

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Aim/Purpose: This quasi-experimental research study aimed to determine the impact of a smoking cessation program on vocational college students.

Introduction/Background: Smoking remains one of the biggest public health threats in the world, especially in low- and middle-income countries. In Thailand, the typical age when a person first smokes is between 18 and 22, and smoking becomes habitual by the ages of 19 to 23 after approximately one year of continuous smoking. Many smokers are teenagers or young adults, including vocational college students. Many students in this demographic engage in smoking due to various social, psychological, and environmental factors, increasing their risk of developing long-term health complications. Addressing this issue requires targeted interventions, such as smoking cessation programs that focus on modifying behaviors and reinforcing positive attitudes toward quitting smoking.

Methodology: A purposive sampling method was utilized to select participants who met specific criteria relevant to the study's objectives. The sample consisted of 30 vocational college students who were over 18 years old with at least one year of smoking history, a Fagerström Test for Nicotine Dependence (FTND) score higher than 4.0, and a smoking cessation desire score greater than 3.0. The intervention employed in this study was a structured smoking cessation program developed by nine experts using a Delphi-technique. This 9-week structured program was based on Bandura's self-efficacy theory and the 5A Model created by the Action on Smoking and Health Foundation Thailand. Each week incorporated behavioral and psychological strategies: Week 1: awareness, Week 2: commitment, Week 3: perseverance, Week 4: encouragement, Week 5: self-conquest, Weeks 6 and 8: self-regulation, and Weeks 7 and 9: liberation. The total program took nine weeks to support participants in their efforts to quit smoking.

The program emphasized education about the harmful effects of smoking, skill development for resisting smoking triggers, cognitive-behavioral techniques to modify smoking-related thoughts and behaviors, and peer support mechanisms to enhance motivation. Data collection was conducted over the 9-week period during which participants engaged in various components of the smoking cessation program. The effectiveness of the intervention was evaluated using questionnaires. The instrument was a smoking cessation behavior questionnaire that measured perceived harm of smoking, self-efficacy for smoking cessation, and a smoking behavior assessment. Its content validity was .97, and its reliability, assessed using Cronbach's alpha coefficient, was .88. Two standardized instruments assessed nicotine dependence as measured by FTND scores, along with smoking cessation intention scores. Descriptive statistics and a paired *t*-test were used to analyze the data.

Findings: The study included a total of 30 participants. Most of the sample were male (86.7%), with an average age of 19.17 (± .98 years). The average age to first start smoking was 14.57 years (SD 2.16), with 33.3% starting at age 15 years. The participants had been smoking for an average of 4.6 years (SD 2.16). In terms of the reasons for starting smoking, 60% stated it was due to curiosity; 36.7% smoked traditional cigarettes, 33.3% used e-cigarettes, and 26.7% smoked while drinking alcohol as well. In terms of nicotine dependence, 56.7% were at a moderately dependent level. In regards to participant cessation intentions, 23.3% had intention levels from 7 to 10 to cease smoking. There were statistically

significant differences in scores for the perceived harm of smoking, self-efficacy for smoking cessation, FTND scores, smoking cessation intention scores, and smoking behavior assessment scores ($p < .05$).

Contribution/Impact on Society: The results indicated that the smoking cessation program was effective among vocational students, leading to an increased perception of the harm associated with smoking, enhanced self-efficacy, a stronger intention to quit, and greater leadership in encouraging peers to quit. These outcomes support reduced exposure to second-hand smoke and smoking-related diseases. The findings offer practical implications for nursing practice, youth-focused health education, and national tobacco control policies.

Recommendations: Based on the study's outcomes, teachers can use this program in schools for students who want to quit smoking. They can also teach its concepts in health courses to reinforce knowledge about the harmful effects of smoking, and use them as strategies to stop smoking. In hospitals, nurses can use this program to help patients quit smoking, which leads to beneficial treatment and control of non-communicable diseases.

Research Limitations: First, this research was conducted with a small sample group, and the results from one vocational school may not be generalizable to other vocational students. Second, this program was implemented in only nine weeks, so the time may not have been long enough to assess long-term smoking cessation outcomes. As a result of this program, one student was able to quit smoking; if continued for a more extended duration, perhaps more students might have quit smoking. Lastly, external factors such as peer influences or stress levels related to their studies were not controlled, which could have impacted study variables.

Future Research: Conducting research with a larger sample or among other populations, along with long-term follow-up, would provide a clearer picture of the results among participants who quit smoking.

Keywords: *Smoking cessation program, tobacco, vocational college students*

Introduction

Tobacco use is a major global health problem, resulting in over 8 million deaths each year; this includes 1.3 million from second-hand smoke exposure, and high health care costs to treat tobacco-related diseases in low- and middle-income countries (WHO, 2023). The National Statistical Office of Thailand conducted a 2021 Health Behavior Survey which found that 9.9 million people aged 15 and older smoked, with smoking rates among those aged 15-24 fluctuating over time. The typical age of first smoking is between 18 to 22, and smoking becomes habitual by the ages of 19 to 23, after approximately one year of continuous smoking (National Statistical Office, 2021). A study by Seetisan et al. (2023) on factors affecting smoking behavior among vocational college students found that 37.90% first started smoking at 15 years of age. The average duration of smoking was 4.15 years, and the primary reason for starting was curiosity, accounting for 50.48%. Regarding smoking frequency, 38.40% smoked one cigarette or less per day, 26.30% smoked every other day, 26.30% smoked 2–5 cigarettes per day, and 39.20% smoked daily. Based on these research findings, the researchers were interested in helping vocational college students quit smoking.

Smoking has numerous harmful health effects, including short-term impacts such as reduced smell and taste sensitivity, eye irritation, tear production, increased carbon monoxide levels in the lungs and bloodstream, rapid heart rate, high blood pressure, and body odor from cigarettes. Long-term effects include non-communicable diseases (NCDs), which are the leading health issue worldwide and in Thailand, such as cardiovascular disease, stroke, diabetes, chronic obstructive pulmonary disease, lung cancer, and cancers in various parts of the body (Department of Disease Control, 2021). Not only does smoking have a direct health impact on smokers, but secondhand smoke may also harm those around them. Without controlling these risk factors, the incidence of smoking-related diseases will continue to rise, resulting in a significant economic burden due to healthcare costs. It is estimated that over 8

million people will die from smoking-related diseases annually by 2030 (Tobacco Control Research and Knowledge Management Center, 2021). The National Non-Communicable Diseases Prevention and Control Strategy aims to reduce preventable illnesses, deaths, and disability from NCDs through multi-sectoral collaboration, with policies on smoking prevention and cessation to improve public health and achieve high standards of productivity across all age groups (Department of Disease Control, 2021). Following this policy, various government and private sector organizations have implemented projects aimed at reducing or eliminating smoking, and helping smokers to quit the habit.

Studies on smoking cessation behavior have applied various theories to facilitate both internal and external behavioral changes, such as life skills, behavioral change processes, and health care belief systems. Siangphor (2018) describes health care behavior as an individual's process of engaging in self-health activities to promote, prevent, and control illness. These include internal factors: beliefs, knowledge, attitudes, values, and motivation; as well as external factors: the environment, social structure, economy, education, and religion influence smoking cessation. Thus, smoking cessation behavior change should begin by helping individuals recognize the benefits of quitting and the harm of smoking, fostering awareness and a desire for behavioral change. Individuals must also acknowledge their self-efficacy, demonstrating perseverance, goal setting, planning, and consistent action.

Bandura's (1997) Self-Efficacy Theory defines self-efficacy as an individual's judgment of one's ability to manage and perform behaviors to achieve set goals. This belief influences thoughts, emotions, motivations, and guiding behavior. The relationship between cognitive, personal, and environmental factors is central to this theory. Cognitive and personal factors such as expectations, beliefs, perceptions, emotions, and intentions determine the pattern and direction of behavior. Experiences and behavioral patterns reshape cognitive structures in the brain, impacting personal factors. External environmental factors, such as social modeling, guidance, and societal regulations, also shape and motivate behavior (Petchbhum, 2018).

A study by the Tobacco Control Research and Knowledge Management Center (2021) assessed smoking cessation success, revealing that approximately 5% of smokers could quit independently. However, with support, the success rate doubled. With additional interventions, such as counseling, success rates tripled, and combining counseling with medication increased the success rate fivefold. Smoking cessation aids include nicotine replacement therapies (such as gum), behavioral and social therapies to enhance coping skills, and other methods such as herbal remedies and foot reflexology. Those with chronic diseases, who recognize the harm of smoking, are more likely to quit on their own. External support, such as teaching refusal techniques and managing withdrawal symptoms, further enhances success in quitting by building self-confidence and reinforcing the desire to quit.

According to a review of the literature, the factors influencing an individual's decision to quit smoking include the perceived harm of smoking, self-efficacy for smoking cessation, and the severity of nicotine dependence. Pandee et al. (2020) studied the effects of a smoking cessation promotion program on the smoking cessation behavior of Kamphaengphet Rajabhat University students. They found that participants in the intervention group demonstrated greater knowledge about smoking, higher self-efficacy in quitting, and improved nicotine dependence levels compared to their own baselines and the comparison group. These results came from program activities, which included information about the harm of smoking through lectures, discussions, video presentations, along with self-efficacy enhancement, talks with successful models in quitting smoking, sharing, social support, motivation and encouragement, follow-up via telephone, and carbon monoxide measurements to monitor nicotine levels.

These results aligned with research by Raksason et al. (2020), who examined the effectiveness of applying Self-Efficacy Theory and social support in a smoking cessation program for persons with chronic diseases. The study found that after the intervention, participants in the experimental group demonstrated significantly higher average scores in various areas, consistent with Bandura's self-efficacy notions and social support (Bandura, 1977). Specifically, knowledge about the harm of smoking related to chronic diseases was higher after the intervention compared to both before

implementation and the control group. Program activities included educational sessions, giving clear, understandable, and memorable knowledge, and video presentations illustrating the dangers of smoking and smoking-related diseases. For self-efficacy in smoking cessation, the experimental group had higher average scores after the program, and higher scores than the control group. This result was attributed to a variety of activities designed to enhance self-efficacy as follows:

1. Mastery Experience: Participants engaged in challenging scenarios related to quitting smoking, in which they exchanged coping techniques that increased their confidence.
2. Vicarious Experience: Successful former smokers (models) shared their strategies and quitting experiences, enabling participants to learn problem-solving techniques from them.
3. Verbal Persuasion: Participants received motivational encouragement, reassurance that they could quit smoking, and praise for their efforts, even if they had not yet succeeded.
4. Emotional Arousal: Tools such as numerical and color-coded results from carbon monoxide breath tests and videos about smoking's dangers created both awareness and fear of smoking.

The literature review also revealed that self-efficacy in smoking cessation, perceived harm of smoking, smoking cessation intention score, and nicotine dependence severity were crucial factors influencing an individual's behavior change in quitting smoking. This aligns with the research by Seetisan et al. (2023), who studied factors affecting smoking behavior among vocational college students. Their findings revealed that 11.6% had moderate dependence, while 12.1% of students had moderate-to-high nicotine dependence, 5.2% had high dependence, and .9% had very high dependence. Additionally, 34.9% of students were thinking about quitting smoking. Perceived harm from smoking was at a high level ($\bar{x}$ = 3.81, *SD* = .91), self-efficacy in quitting smoking was moderate ($\bar{x}$ = 3.49, *SD* = .93), and attitude towards smoking was high ($\bar{x}$ = 3.85, *SD* = 1.05). The study found that self-efficacy in quitting smoking significantly influenced smoking behavior. When students' self-efficacy increased, their smoking behavior scores decreased. These results led to the development of a smoking cessation program for vocational students, in particular by applying the Self-Efficacy Theory.

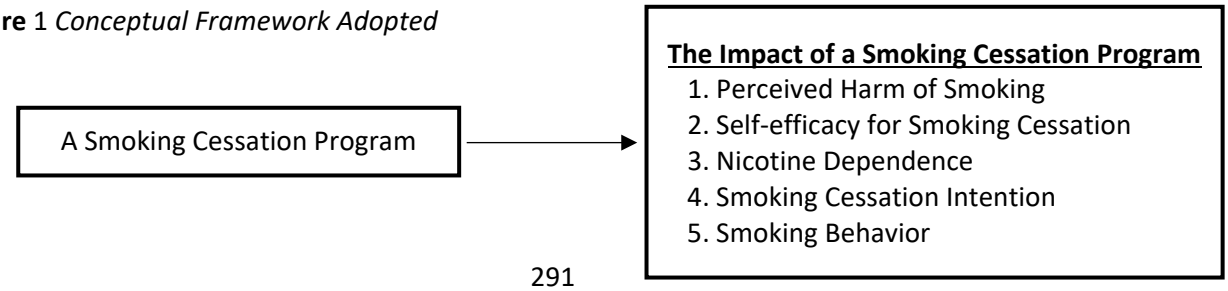
The 5 A's framework is an evidence-based, structured approach widely utilized in clinical settings to promote smoking cessation. It comprises five key steps: Ask, Advise, Assess, Assist, and Arrange. The process begins with systematically asking all patients about their tobacco use to ensure consistent identification. This is followed by advising smokers to quit through clear, personalized, and supportive messages that emphasize the health benefits of cessation. The third step, assessing the individual's readiness to quit, helps tailor the intervention to the patient's level of motivation. For those prepared to make a quit attempt, providers assist by offering practical strategies, behavioral support, and pharmacologic options. The final step, arrange, involves scheduling follow-up encounters to reinforce progress and provide ongoing support. This model, endorsed by the Action on Smoking and Health Foundation Thailand, is recognized for its effectiveness in integrating smoking cessation counseling into routine healthcare practice (Thongphiw et al., 2018).

Based on this study's findings and a comprehensive review of the literature, the researchers developed a structured Smoking Cessation Program specifically designed for overlooked vocational college students and evaluated its effectiveness.

Research Conceptual Framework

In this study, the researchers integrated Bandura's (1977) Self-Efficacy Theory and the 5A Principles from the Action on Smoking and Health Foundation Thailand to develop a smoking cessation program and a survey questionnaire for the research study (Figure 1).

Figure 1 *Conceptual Framework Adopted*



Research Objective

To determine the effectiveness of a smoking cessation program on Thai vocational college students.

Research Hypotheses

1. The smoking cessation program will significantly improve participants' perceived harm of smoking, self-efficacy for smoking cessation, and smoking cessation intention compared to before participating in the program.
2. The smoking cessation program will significantly decrease participants' nicotine dependence and smoking behavior compared to before participating in the program.

Expected Outcomes and Benefits

The smoking cessation program will help students who are smokers quit smoking, be role models for their friends, and reduce second-hand smoke and NCDs. In health care settings, the results will help nurses know how to assist smokers to stop smoking. The study has practical implications for nursing practice, school-based health education, and the national smoking cessation policy, especially in youth-targeted programs.

Research Design and Methodology

Design

A quasi-experimental research approach was designed to study the effectiveness of a smoking cessation program.

Population and Sample

The population chosen consisted of 115 students who were studying in Year 3 of a Vocational Certificate Program or Years 1–2 of a Vocational Diploma Program during the 2021 academic year and met the inclusion criteria.

Kerlinger's (1964) sampling method was used to calculate the sample size. Therefore, 25% of the 115 qualified participants, totalling 30 students, who were studying in Year 3 of a Vocational Certificate Program or Years 1–2 of a Vocational Diploma during the 2021 academic year, were purposively sampled from the group that met the inclusion criteria. The inclusion criteria for participant selection were as follows: (a) smoking history of at least one year, (b) Fagerström Test for Nicotine Dependence (FTND) score greater than 4.0, (c) desire to quit smoking score greater than 3.0, and (d) no illnesses related to smoking during the data collection period.

Research Instruments

Two main instruments were used in the study: A smoking cessation program and a questionnaire.

The smoking cessation program was developed based on Bandura's (1977) Self-Efficacy Theory and the 5A Principles from the Action on Smoking and Health Foundation, Thailand. A Delphi technique was used to develop a consensus approach for a smoking cessation program. Nine experts participated in an evaluation assessing the feasibility and appropriateness of this program. The Delphi process consisted of three rounds:

Round 1: Content Analysis: Experts provided feedback on the design of a smoking cessation program.

Round 2: Expert Evaluation: Experts rated the importance of each activity using a 5-point rating scale; > 4.50: Highly appropriate, 3.50–4.49: Very appropriate, 2.50–3.49: Moderately appropriate, 1.50–2.49: Slightly appropriate, and < 1.50: Least appropriate. Median scores and interquartile ranges (IQR) were calculated; an IQR of ≤1.50 indicated a strong consensus among experts regarding the appropriateness of each activity.

Round 3: Consensus Confirmation: Experts reviewed the aggregated responses to confirm the appropriateness of the activities, or adjust their ratings to align with the consensus. This

iterative process ensured that the final smoking cessation program was well-supported by expert opinion.

Based on the synthesized content and recommendations, the researchers developed and implemented a structured smoking cessation program consisting of nine weekly activity sessions. Each session focused on a specific theme aimed at guiding vocational students through the stages of behavioral change:

Week 1–Awareness Initiation: Group activities included discussions on the health risks associated with smoking, sharing of personal smoking experiences, and viewing educational videos highlighting smoking-related diseases to enhance risk perception and awareness.

Week 2–Commitment: Participants viewed videos featuring successful smoking cessation stories, discussed their motivations and intentions to quit, engaged in conversations with former smokers, and received guidance on recognizing smoking triggers and managing cravings.

Week 3–Perseverance: The session involved watching videos on the physical effects of smoking, reflecting on personal reasons for quitting, and having discussions with experienced smokers. Participants identified common barriers to cessation and explored coping strategies for nicotine dependence.

Week 4–Encouragement: A psychologist facilitated this session, offering emotional support and motivation. Participants shared their achievements in reducing cigarette consumption, exchanged strategies for cutting down, and offered praise to peers who had successfully reduced or quit smoking.

Week 5–Self-Conquest: Participants discussed persistent challenges in quitting smoking and received peer and professional support. Information about available cessation resources, such as national quit lines and smoking cessation centers, was provided to support continued efforts.

Weeks 6 and 8 Self-Regulation: Participants selected their preferred methods for smoking cessation and self-management strategies for coping with nicotine cravings.

Weeks 7 and 9 Liberation: Follow-up sessions were conducted to assess progress, reinforce behavioral changes, and provide ongoing encouragement and support post-intervention.

The working hypothesis developed *(H_1)* was that the smoking cessation program will significantly improve participants' perceived harm of smoking, self-efficacy for smoking cessation, and smoking cessation intention compared to before participating in the program

The survey questionnaire measured the smoking cessation program's impact on perceived harm of smoking, self-efficacy for smoking cessation, nicotine dependence, smoking cessation intention, and smoking behavior.

The working hypothesis (*H_2)* adopted was that the smoking cessation program would significantly decrease participants' nicotine dependence and smoking behavior compared to before participating in the program.

The test for dependence (FTND) and smoking cessation intention were assessed using standardized tools. By reviewing the literature, the researchers developed survey items to investigate the perceived harm of smoking, self-efficacy for smoking cessation, and smoking behavior, and these were tested for validity and reliability. The test for validity was based on the index of Item Objective Congruence according to the rating scores provided by three experts. The total value that experts gave to each item divided by the number of experts was .97. The questionnaire was pilot tested on 30 vocational students who met the inclusion criteria, but were not part of the sample group. Overall reliability assessed using Cronbach's alpha coefficient was .88: perceived harm of smoking was .91, self-efficacy for smoking cessation was .87, and smoking behavior was .81. This questionnaire was used in the first week before starting the program, and again in Week 9 when following up the results.

Protecting the Rights of Participants

Research ethics approval was obtained from the Institutional Review Board of Asia-Pacific International University (IRB) (AIU 26/2563-RRDC2021-60, April 30, 2021). The rights of the

participants in the study were protected from the preparation phase through to the completion of data collection. The ethical procedures were as follows:

1. Before data collection, the researchers obtained approval from the administrator of the vocational college to conduct a survey and identify the target group.
2. The researchers met with the target group and explained the details of informed consent, including the study's objectives, experimental procedures, expected outcomes, potential risks and benefits, participant criteria, and the rationale for inviting students to participate in the study. Participants were informed of their right to decline or withdraw from the study at any time without affecting the scores of any subjects.
3. The researchers passed out information sheets to provide a complete understanding of the study and requested potential participants to sign them, indicating their willingness to take part in the study.
4. The results have been reported in aggregate to ensure that no individual can be identified. After the study ended, the data was destroyed.

Data Collection

Data were collected by the researchers using self-administered questionnaires completed by the participants at baseline (Week 1) and post-intervention (Week 9).

Data Analysis

General data was analyzed using descriptive statistics. A paired *t*-test was used to compare students' perceived harm from smoking, self-efficacy for smoking cessation, FTND scores, smoking cessation intention scores, and smoking behavior assessment scores ($p \leq .05$).

Results

The total number of vocational college students in the study was 30. Most of them were male (86.7%), with an average age of 19.17 ($\pm$ .98) years. Most participants were in their first year of upper vocational education (73.3%), 56.7% of participants were from nuclear families. Their average age to first start smoking was 14.57 ($\pm$ 2.16) years, with 33.3% starting at age 15 and 23.3% starting at age 14. The average number of years that participants had smoked was 4.6 ($\pm$ 2.16) years; among this number, 30% had smoked for approximately 5 years.

Regarding the reasons for starting smoking, 60% stated that it was due to curiosity, 20% indicated that it was to relieve stress, and 16.7% cited peer influence. In terms of smoking methods, 36.7% smoked traditional cigarettes and 33.3% used e-cigarettes as well. The reasons for continuing to smoke included 26.7% smoked while drinking alcohol, 23.3% felt unable to quit, and 16.7% followed the behavior of friends. Regarding attempts to quit smoking, 93.3% had tried to quit, with 53.3% attempting to quit through abrupt cessation, and 30% using a gradual reduction method. In terms of nicotine dependence, 56.7% were moderately dependent, 26.7% were highly dependent, 13.3% were moderately dependent with a tendency toward high dependence, and 3.3% were highly dependent. Regarding the intention to cease smoking, 23.3% had an intention level from 7 to 10, 20% had a level of 10, and 13.3% had no intention of quitting smoking at all. Moreover, after follow-up in Week 9, it was found that one student (3.33%) successfully quit smoking.

The smoking cessation program affected participants' perceived harm of smoking, self-efficacy for smoking cessation, and smoking cessation intention scores; the findings are presented in Table 1 below.

The smoking cessation program significantly improved participants' perceived harm of smoking, self-efficacy for smoking cessation, and smoking cessation intention compared to before participating in the program. The details relevant to H_1 are given below.

1. Participants demonstrated a statistically significant increase in their perceived harm of smoking following the intervention. The mean score rose from 3.48 (SD = .58) at baseline to 4.58 (SD = .52) post-intervention, $t = 12.425$, $p < .05$.

2. Self-efficacy in smoking cessation also showed a significant improvement, with mean scores increasing from 3.13 (*SD* = .50) to 4.24 (*SD* = .56), $t = 10.536$, $p < .05$.
3. Similarly, intention to quit smoking significantly increased, with scores rising from 5.83 (*SD* = 3.21) to 7.40 (*SD* = 2.94), $t = 3.164$, $p < .05$.

Table 1 *Comparison of Mean Scores Before and After Participating in Smoking Cessation Program* (n=30)

Feature	*M*	*SD*	*t*	*p*
Score of perceived harm of smoking				
Before participating in the program	348.	58.	12.425	.000
After participating in the program	458.	5.2		
Score of self-efficacy for smoking cessation				
Before participating in the program	313.	50.	10.536	.000
After participating in the program	4.24	56.		
Smoking cessation intention score				
Before participating in the program	5.83	3.21	3.164	.004
After participating in the program	7.40	2.94		

Note. *$p < .05$.

The smoking cessation program also affected participants' FTND scores and smoking behavior assessment scores; the results gathered that are relevant to H_2 are shown below in Table 2.

Table 2 *FTND and Smoking Behavior Scores* B*efore and After the Smoking Cessation Program* (n = 30)

Feature	*M*	*SD*	*t*	*p*
FTND score				
Before participating in the program	5.70	218	13.012	.000
After participating in the program	2.13	2.95		
Smoking behavior assessment score				
Before participating in the program	9.40	167	8.197	.000
After participating in the program	6.17	2.99		

Note. *$p < .05$.

1. Nicotine dependence, as measured by the Fagerström Test for Nicotine Dependence (FTND), significantly decreased following the intervention. Participants' mean scores dropped from 5.70 (*SD* = 2.18) at baseline to 2.13 (*SD* = 2.95) post-intervention, $t = 13.012$, $p < .05$.
2. Similarly, smoking behavior assessment scores significantly improved, with mean scores dropping from 9.40 (*SD* = 1.67) before the program to 6.17 (*SD* = 2.99) after completion, reflecting positive behavioral changes, $t = 8.197$, $p < .05$.

Discussion

The comparative analysis revealed that after participating in the smoking cessation program, the vocational students reported significant statistical differences at the .05 level in terms of their awareness of the harmful effects of smoking, self-efficacy in quitting smoking, level of nicotine dependence, intention to cease smoking, and smoking behavior when compared to before the program.

Specifically, the students' awareness of the harms of smoking and self-efficacy in quitting smoking improved after participating in the program. This is because program participants received increased awareness of both the harms of smoking and their own ability to quit, based on the Self-Efficacy Theory (Bandura, 1977). Success stories and experiences were shared by role models who had successfully quit smoking, both in person and through videos. This method has been shown to be effective in enhancing an individual's self-efficacy. Students who believe in their own abilities are less likely to give up easily and will persist in achieving their goals.

In addition, students were provided with manuals prepared by the Thai Health Promotion Foundation on the harm and dangers of smoking, methods to quit smoking, and strategies for dealing with cravings. Individual consultations and follow-up calls were also offered, along with psychological counseling, all of which are methods that gradually build up an individual's self-efficacy. Moreover, the emotional stimulation provided each week during the activities had a positive impact on their belief in their own abilities. The study by Jungsomjatepaisal and Tuaymeerit (2021) showed that motivating students to reduce and quit smoking is one strategy for promoting health and preventing smoking among secondary school students. Thus, it was observed that both the perceived harm of smoking and self-efficacy for smoking cessation improved significantly after the program, as predicted by the research hypothesis. These findings were consistent with a study by Ruamsook et al. (2021), which found that the community health workers who participated in the program had increased knowledge about smoking and showed higher confidence in helping others to quit. Similarly, a study by Sae-han et al. (2020) revealed that an increase in security personnel's self-efficacy led to a reduction in the quantity of their daily smoking.

The intention to quit smoking among vocational students increased after participating in the smoking cessation program. This increase in intention was influenced by the program's goal-setting activities, such as watching videos and having discussions with role models who had successfully quit smoking. It was found that the intention to cease smoking increased after the program, which was aligned with the research hypothesis. This result was consistent with a study by Jantarapas et al. (2021), which found that employees in workplaces showed a statistically significant increase in their intention to cease smoking after participating in a similar program ($p < .01$). Moreover, in a study by Addjanagitti et al. (2022), the results showed that after participating in the program, vocational college students' intention not to smoke was higher than in the comparison group.

Nicotine dependence levels decreased after participating in the program; this reduction was due to the program's variety of activities designed to promote smoking reduction, particularly those that strengthened students' self-efficacy in quitting smoking. Using a variety of activities can help smokers quit smoking (Rungreunghiranya & Kropthong, 2021). When self-efficacy was reinforced effectively, the daily smoking rate decreased, which in turn led to a reduction in nicotine dependence. This finding was consistent with a study by Pandee et al. (2020), which found a significant statistical difference in nicotine levels between the experimental and control groups after the former had participated in a smoking reduction program. This result also aligned with the findings of Napattaradechanon et al. (2023), who found that students participating in a smoking reduction program with a self-efficacy approach showed a significant reduction in nicotine dependence and a decrease in urinary nicotine levels.

The smoking behavior assessment scores of the students showed a reduction in the number of cigarettes and frequency of smoking per day. In the program, successful role models were invited to share their methods and techniques for quitting smoking. Individual counseling, encouragement, motivation, and various techniques for managing cravings were provided. These findings aligned with research by Sae-han et al. (2020) and Jantarapas et al. (2021), which found a reduction in the number of cigarettes smoked per day among participants.

However, some individuals were still unable to quit smoking, despite an increase in their self-efficacy to quit. This was due to peer influence, where students continued to smoke because they were invited to do so by friends, and feared rejection or a lack of acceptance in their social group. This aligns with the findings of Seetisan et al. (2023), which highlighted the influence of peers as an interpersonal factor that contributes to students' continued smoking behavior.

Nonetheless, after the program concluded and a follow-up at Week 9 was conducted, it was found that one student, or 3.33%, successfully quit smoking. This result was consistent with the study by Ruangrith et al. (2023), which found that some students continued to smoke due to peer influence, such as smoking in the restroom after smelling cigarette smoke. However, when the students' families were involved in the process, the success rate of quitting increased to 87% during a one-year follow-

up. This finding also aligned with research by Jantarapas et al. (2021), where 36.56% of employees were able to successfully quit smoking due to motivation and follow-up support.

Implications

According to the results of this study, school administrators and teachers can implement this program in their schools for students who wish to quit smoking, and emphasize the harmful effects of smoking in the health education courses. In health care settings, multidisciplinary health care teams can use this program to assist patients in quitting smoking, which can improve treatment outcomes and help manage non-communicable diseases. These results may be used as data for further research studies so that they can be more specific and their results more generalizable.

Research Limitations

The generalizability of this study was limited by its small sample size from a single vocational school. The nine-week duration may not have captured long-term cessation outcomes, as it may have been influenced by uncontrolled external factors such as peer pressure and academic stress, which could have affected the results.

Conclusion

The smoking cessation program effectively enhanced vocational students' perceived self-efficacy and intention to quit smoking, while reducing nicotine dependence and smoking behavior.

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