

Stop Vape And Cigarettes: Community Service For A Healthy, Nicotine Free Generation At SMK Al-Washliyah 3 Medan

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Abstract.

The use of conventional cigarettes and e-cigarettes (vapes) among adolescents is a public health issue that requires serious attention. Poor understanding of the dangers of nicotine and the perception that vapes are safer than cigarettes are factors driving the increased use of nicotine products among students. This community service activity aims to increase the knowledge and awareness of students at SMKS Al Washliyah 3 Medan regarding the dangers of cigarettes and vapes, their nicotine content, and their impact on health through scientific evidence-based education. The activity was implemented through a participatory educational approach, including health education, presentations, interactive discussions, and refusal skills training for students who are tempted to use cigarettes and vapes. The target group of the activity was adolescent students at SMKS Al Washliyah 3 Medan. Educational materials covered the differences between cigarettes and vapes, the harmful substances contained in nicotine products, the impact of nicotine on adolescent brain development, the risks of short-term and long-term health problems, and strategies for developing a healthy lifestyle without nicotine. The results of the activity showed an increase in students' understanding of the risks of cigarette and vape use, particularly regarding nicotine content and the potential for dependence. Through discussion sessions, students also began to understand that vaping is not a safe product, but rather carries health risks and can be a gateway to conventional smoking. This activity also encouraged students to develop positive attitudes toward rejecting the use of nicotine products and supporting the creation of a healthy, smoke-free school environment. This community service activity contributed to improving adolescent health literacy through a promotive and preventative approach based on evidence-based education. Continuous education about the dangers of smoking and vaping in the school environment is expected to foster a more health-conscious, productive, and nicotine-free young generation.

Keywords: Health education, teenagers, cigarettes, vape, nicotine and community service.

I. INTRODUCTION

Smoking and e-cigarette (vaping) use among adolescents poses a serious public health challenge, including in vocational high schools (SMK). Adolescence is a developmental period characterized by heightened curiosity, a search for self-identity, and a tendency to try new things, including risky behaviors such as the use of tobacco products and e-cigarettes. These behaviors can negatively impact not only physical health but also psychological, social, and academic aspects of students [1,2].

The World Health Organization (WHO) reports that tobacco use causes more than 8 million deaths annually worldwide, with the majority of adult tobacco users starting smoking as teenagers. This situation suggests that high school is a highly strategic period for implementing preventive interventions to prevent the development of nicotine dependence early on [3]. In Indonesia, cigarette and e-cigarette use among adolescents remains a problem that requires attention. Factors contributing to the increase in vaping use include peer influence, social media exposure, product marketing strategies, and the misperception that vaping is safer than conventional cigarettes [4,5].

Nicotine is the main component in cigarettes and most e-cigarette liquids, and it has highly addictive properties. Nicotine exposure in adolescents can disrupt brain development, which continues until around age 25, particularly in areas involved in impulse control, attention, decision-making, and emotional regulation [6]. The impact of nicotine exposure at a young age can increase the risk of dependence, impaired cognitive function, and mental health problems such as anxiety and emotional regulation disorders [6,7].

Although e-cigarettes are often promoted as a safer alternative to conventional cigarettes, scientific evidence shows that these products still pose health risks. E-cigarettes can contain nicotine, irritating chemical compounds, toxic substances, and metal particles that have the potential to adversely affect the respiratory and cardiovascular systems [7,8]. Furthermore, vaping use in adolescents is known to be associated with an increased risk of trying and switching to conventional cigarettes later in life [9].

Therefore, e-cigarettes cannot be considered a risk-free product for adolescents, but rather can be an initial pathway to nicotine dependence.

Schools are a strategic environment for implementing promotional and preventive efforts to increase health awareness among adolescents. School-based education programs have proven effective in increasing knowledge, building positive attitudes toward healthy lifestyles, and reducing the likelihood of smoking among young people [1,2]. Therefore, community service activities through health education on the dangers of smoking and vaping are a crucial step in building students' health literacy.

Through educational activities, interactive discussions, and the delivery of evidence-based information, it is hoped that vocational high school students will understand the impacts of smoking and vaping and be empowered to make decisions that support a healthy lifestyle. These activities also support the implementation of the Impactful Campus program through the involvement of universities in addressing public health issues, while simultaneously supporting the achievement of Performance Indicators.

II. METHODS

This community service activity was conducted at SMKS Al Washliyah 3 Medan using a participatory health education approach. The target group was adolescent students, a group vulnerable to risky behaviors, including the use of conventional cigarettes and e-cigarettes (vapes). The activity was implemented through three main stages: preparation, implementation, and evaluation.

The preparation stage began with coordination between the community service team and the school to determine the implementation time, number of participants, and technical aspects of the activity. The implementation team, consisting of lecturers and students from the Faculty of Pharmacy at Al Washliyah Muslim Nusantara University, developed evidence-based educational materials on the differences between cigarettes and vapes, nicotine content, mechanisms of nicotine dependence, and the impact of nicotine product use on adolescent health.

The implementation phase of the activity was conducted through health education methods using presentations and interactive discussions. The materials provided included an introduction to the harmful ingredients in cigarettes and vapes, the effects of nicotine on adolescent brain development, the risks of respiratory and cardiovascular disorders, and the clarification of various myths regarding vape safety. In addition to delivering the material, participants were also provided with education on refusal skills to improve their ability to deal with peer pressure that can encourage smoking or vaping.

The evaluation phase was conducted through discussions and direct Q&A sessions to determine participants' level of understanding after the educational activity. The program's success was evaluated based on increased student knowledge about the differences between cigarettes and vapes, the dangers of nicotine, and the development of positive attitudes toward avoiding the use of nicotine products.

Through interactive, evidence-based educational methods, this community service activity is expected to improve students' health literacy and support the creation of a healthy young generation free from nicotine dependence.

III. RESULT AND DISCUSSION

The World Health Organization (WHO) states that tobacco use remains one of the leading causes of preventable death worldwide, with the majority of tobacco users developing a smoking habit during adolescence. This situation indicates that adolescence is a crucial period for preventive interventions through school-based health education programs. The school environment is a strategic setting because it can shape students' knowledge, attitudes, and health behaviors through a sustainable promotive and preventive approach [3]. Community service activities carried out at SMKS Al Washliyah 3 Medan are one form of educational intervention to raise student awareness about the risks of cigarette and e-cigarette use.

Nicotine exposure in adolescence is of particular concern because brain development continues until around age 25. The Centers for Disease Control and Prevention (CDC) explains that nicotine can affect the parts of the brain that play a role in attention, impulse control, decision-making, and emotional regulation.

Therefore, cigarette and e-cigarette use during school age not only impacts physical health but can also affect adolescents' learning abilities, cognitive development, and psychological stability [6].

E-cigarettes are often perceived by some adolescents as safer than conventional cigarettes. However, scientific evidence shows that vaping still contains nicotine and various chemical compounds that have the potential to negatively impact health. The U.S. Department of Health and Human Services, through a Surgeon General's report, confirmed that e-cigarette use among adolescents is associated with the risk of nicotine dependence and potential involvement in the use of other addictive substances [7]. Providing evidence-based information in this community service activity is crucial to improve the perception of students who still view vaping as a risk-free product.

E-cigarette use among adolescents is also known to be associated with an increased likelihood of future conventional cigarette use. Systematic studies have shown that adolescents who have used e-cigarettes have a higher risk of becoming conventional cigarette smokers compared to adolescents who have never used vapes [9]. These findings reinforce the concept that e-cigarettes can act as an initial pathway to nicotine dependence, making prevention efforts in school-age groups an important strategy in reducing long-term smoking prevalence.

In addition to nicotine dependence, low perceived risks of vaping are also a factor that encourages adolescents to try these products. Hammond et al. reported that the perception that e-cigarettes are less harmful than conventional cigarettes is associated with an increased desire among adolescents to try vaping. Attractive product design, a variety of flavors, and promotions through social media contribute to the appeal of e-cigarettes among young people [5]. This aligns with findings from educational activities at SMKS Al Washliyah 3 Medan, where curiosity and social influences were among the factors influencing students' interest in vaping.

The National Academies of Sciences, Engineering, and Medicine reports that the aerosol produced by e-cigarettes is not only water vapor, but can also contain various hazardous substances such as ultrafine particles, toxic compounds, and heavy metals, which have the potential to negatively impact the respiratory and cardiovascular systems [8]. This information is a crucial part of health education, as adolescents still misunderstand that vaping only produces harmless vapor.

School-based education programs are an effective approach to preventing smoking behavior in adolescents. Thomas et al. demonstrated that school-based interventions conducted in an educational manner and involving active student participation can increase knowledge and reduce the likelihood of smoking behavior [2]. In this community service activity, interactive outreach methods and discussion sessions provide opportunities for students to share their experiences, clarify misinformation, and understand the health risks of smoking and vaping more comprehensively.



Fig. 1. Speakers from Faculty of Pharmacy Universitas Muslim Nusantara Al-Washliyah Medan and all students from SMKS Al Washliyah 3 Medan also participated in the event

In addition to educating students, school policy support also plays a crucial role in creating an environment conducive to healthy lifestyles. The WHO states that implementing a smoke-free school environment and consistent health promotion can help reduce the prevalence of tobacco use among school-age children [10]. Therefore, program sustainability through school support is crucial for maintaining long-term behavior change.

Preventing smoking among adolescents requires not only increased knowledge but also strengthening students' abilities to cope with social pressures from their environment. Espelage et al. demonstrated that a social skills intervention program can help improve adolescents' ability to resist peer influence on substance use [1]. This approach is relevant for further development at SMKS Al Washliyah 3 Medan, ensuring that students not only understand the dangers of smoking and vaping but also develop the skills to make healthy decisions.



Fig. 2. The overall atmosphere was that students enjoyed the presentation.

Overall, this community service activity demonstrates that school-based health education is an effective strategy for improving students' health literacy regarding the dangers of cigarettes and e-cigarettes. Increasing knowledge, changing perceptions of the risks of vaping, and providing support from the school environment are crucial components in creating a healthier young generation free from nicotine dependence [3,6].

IV. CONCLUSION

The community service activity entitled “Stop Vape and Cigarettes: Community Engagement for a Healthy Generation Free from Nicotine at SMKS Al Washliyah 3 Medan” successfully improved students' knowledge and awareness regarding the risks of cigarette and vape use. Through evidence-based health education, interactive discussions, and refusal skills training, students gained a better understanding of nicotine addiction, the harmful substances contained in cigarettes and electronic cigarettes, and the potential short-term and long-term health consequences.

The activity also helped correct misconceptions among students, particularly the perception that vaping is a safer alternative to conventional cigarettes. Students became more aware that vape products still contain nicotine and other harmful substances that may negatively affect adolescent development and overall health. Furthermore, the program encouraged students to develop a positive attitude toward avoiding nicotine products and supporting a healthier school environment.

Overall, this community service program demonstrates that school-based health education is an effective preventive strategy to increase adolescent health literacy and promote a nicotine-free lifestyle. Continuous collaboration between educational institutions, health professionals, and students is needed to sustain awareness and strengthen efforts in preventing smoking and vaping behavior among young generations.

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