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Engaging Students as Health Cadres in the Implementation of a Healthy Campus

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ARTICLE INFO

Manuscript Received: 15 Oct, 2024
 Revised: 1 Dec, 2024
 Accepted: 10 Dec, 2024
 Date of Publication: 14 Jan, 2025
 Volume: 8
 Issue: 1
 DOI: [10.56338/mppki.v8i1.6388](https://doi.org/10.56338/mppki.v8i1.6388)

KEYWORDS

Engaging;
 Health Cadres;
 Healthy Campus;
 Implementation;
 Mobilization;
 Students

ABSTRACT

Background: The younger generation has a very important role in determining the success of health development. Efforts to mobilize youth in public health development can be made in the form of participation as health cadres. Universities or campuses as student affairs have a strategic role in creating a healthy and superior young generation. To describe the implementation of student health cadre training as part of healthy campus activities at one of the private universities in Yogyakarta, Indonesia.

Methods: Student health cadre training is part of the healthy campus program which was implemented on October 28, 2021, in collaboration with the Public health office dan Public Health Center at Sleman Regency Yogyakarta. Training materials include healthy living skills education, the urgency of student health cadres, and smoke-free area ambassadors. 30 student representatives were invited to attend the training but participation was voluntary. The criteria for training participants are students who are active in student activities and taken purposively.

Results: The student health cadre training was carried out as planned and 30 students participated from start to finish. Participants were enthusiastic during the training and at the end of the session it was agreed to create a WhatsApp group as a follow-up to the program. Based on the pre-test and post-test, there was an increase in student knowledge about healthy life skills education from a score 69,67 to 78,67 after training with P value < 0,05. In addition, training participants are committed to helping realize a healthy campus, such as admins on healthy campus social media.

Conclusion: Student health cadre training is an important activity in the implementation of a healthy campus. This activity is a form of student involvement as a healthy campus course. Students who have attended the training are expected to be pioneers of peer educators for other students in terms of practicing a healthy lifestyle.

Publisher: Fakultas Kesehatan Masyarakat Universitas Muhammadiyah Palu

INTRODUCTION

Indonesia will experience a demographic bonus because the number of productive age groups increases sharply compared to other age groups in the period 2025-2035. This demographic bonus will be obtained with the main prerequisite of the availability of quality and competitive human resources (HR), namely healthy, intelligent, adaptive, innovative, skilled, and characterized HR. Therefore, in the five Presidential Visions for Advanced Indonesia in 2019-2024, development priorities focus on human resource development, because human resources are the key to Indonesia in the future. Human resource development is carried out to improve the quality of life of Indonesian people through community empowerment, one of which is in the health sector (1).

Efforts to create superior and healthy human resources are carried out through promotive and preventive efforts without ruling out curative and rehabilitative efforts. Promotive and preventive efforts are carried out by education and promotion for the application of a healthy lifestyle from an early age to obtain a quality generation,

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free from disease and productive through multi-stage activities, namely individuals, groups, organizations to health-oriented policies. It is hoped that all components of the nation will participate in promoting a healthy paradigm through participation in efforts to increase awareness, willingness, and ability to live a healthy life starting from individuals, families, and communities through the support of various components of the nation. (2).

Health is a state of complete well-being, both physically, mentally, and socially, not just free from disease or disability. Youth or adolescents are a group of people who are almost always assumed to be in good health and students are part of the youth. But in reality, adolescents face the challenge of serious illness or health problems, and many adolescents even die prematurely. Around 15% of the world's adolescents suffer from illness and injury, and more than one million adolescents die each year from preventable causes. Furthermore, about 70% of premature deaths in adults are related to behaviors that start in adolescence such as tobacco use, poor eating habits, and risky sexual behavior (2,3). There are currently 63.82 million young people aged 16-30 years in the territory of Indonesia and make up almost a quarter of Indonesia's population (24.15%). Of the total youth, the age group of 16-24 years old is 67.76%, which is generally at the level of high school and university students (4).

Youth or adolescents are potential leaders who will determine the fate of the nation in the future, so adolescents need skills in order to live productively. Adolescents must have skills that help them live healthy, study, get a job and participate fully in society. Youth, as the driving force of development, must always be in good health. This is necessary so that youth can proactively develop themselves and manage various development resources for the benefit of society and the country (4). A focus on this phase of the adolescent life course is critical to the new public health agenda. Health-related behaviors and conditions that are a major cause of non-communicable diseases usually start during adolescence such as tobacco and alcohol use, diet and exercise, overweight and obesity. These have a serious impact not only on the health and development of adolescents today but adversely affect their health as adults. (5).

The student is a term for someone who is studying or undergoing higher education in a college such as a high school, academy, and most commonly a university. A student is an agent of change. Being a person who can provide solutions to problems faced by a society. Students also act as movers who invite the whole community to be able to move in making changes towards a better direction, with consideration of the various knowledge, ideas, and knowledge they have (6). To succeed in national development, especially in the health sector, the form of health services is directed to the principle that school-age children and adolescents are not the object but the subject of development (7-9). In essence, health is designed by actively and responsibly involving school-age children and adolescents. Efforts to mobilize their role in public health development can be carried out in the form of participation as health cadres. The approach to health that is currently being pursued is increasingly starting from upstream, namely from school-age children and adolescents who are strategic targets for the implementation of health programs because of their large number (30%) of the population (6). Higher education as one of the centers of learning and development of science as well as a place to form the character of students who are the younger generation of Indonesia is the right target to collaborate in realizing Healthy Indonesia. The Young Generation is in a strategic position in world development according to the commitments contained in the Global Agreement on Sustainable Development Goals(SDGs) (1).

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Universities have a very important role in shaping health behavior among campus residents, especially students. As higher education institutions, universities are not only responsible for providing academic knowledge, but also play a role in shaping the character and healthy lifestyle of students who are part of their community. The large number of students in higher education can be an opportunity for the formation of student health cadres. Student health cadres are tasked with assisting in health improvement efforts, especially disease prevention and health promotion efforts on campus or college such as a) Promoting "Clean and Healthy Living Behavior" (PHBS) or Clean and Healthy Living Behavior and "Healthy Life Skills Education"(PKHS) or Healthy Living Skills Education; b) Disseminate health information to peers in the neighborhood; c) Care about health problems in the school environment and the neighbourhood; d) Supervise the cleanliness of the environment; e) Remind peers in the neighborhood to carry out PHBS; f) Assist health workers in conducting health screening and periodic examinations; g) Help solve health problems of their peers; h) Help facilitate their peers in basic health referrals when needed (6).

The younger generation has a very important role in determining the success of health development. Efforts to mobilize youth in public health development can be carried out in the form of participation as health cadres. Universities or campuses as student fields have a strategic role in realizing a healthy and superior young generation. The definition of cadres contained in Permenkes No. 25 Year 2014 on Child Health Efforts is any person who is

35 selected by the community and trained to deal with individual or community health problems and works in places related to the provision of health services in very close contact with places where health services are provided. (6). Student health cadres are students who voluntarily participate in training and intend to become agents of change who invite their friends to practice a healthy lifestyle. In addition, they also become ambassadors of smoke-free areas on campus. This paper aims to describe the implementation of student health cadre training, which is one part of healthy campus activities in one private university in Yogyakarta, Indonesia. The formulation of this research is how to involve students as health cadres in the implementation of a healthy campus?

METHOD

Student health cadre training is part of the healthy campus program, namely zero-tolerance tobacco (ZTT) which was held on October 28, 2021. This activity is a collaboration between the organizing university with the health service and the Public Health Center at Sleman Regency, Yogyakarta. The resource persons consisted of two lecturers who have experience in tobacco control activities and have experience in assisting adolescents in empowerment activities. Meanwhile, one health worker with a scientific background in health promotion. Funding for this activity is supported by Sleman Health Service, especially the health promotion and community empowerment section. There were 30 student representatives participated in the training with the theme of fostering student health cadres. Participants were students representing each study program in the faculty, namely public health, nursing, nutrition, physiotherapy and midwifery. Participants were selected by the study program and invited to attend the training. Participation in this activity is voluntary. The criteria for training participants are students who are active in student activities. The training materials include healthy living skills education, the urgency of student health cadres, and smoke-free area ambassadors. The training took place from 8-15 WIB. The training began with a pretest and ice breaking, then at the end of the training session, the training participants also took a post-test and reflected together with the committee. Between the second and third sessions, participants were invited to do stretching exercises to refresh the atmosphere. The pretest and post-test aimed to determine changes in participants' knowledge related to healthy living skills. All participants have filled out the willingness to volunteer sheet through the g form before attending the training. Univariate analysis to find the average value before and after training, then bivariate analysis with pair T test.

Ethical Approval

8 This study has received ethical approval from one of the universities in Yogyakarta, numbered 228.3/FIKES/PL/XI/2021.

RESULTS

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15 The student health cadre training was carried out according to plan and 30 students participated in the activity from start to finish. This training began with ice-breaking activities, where participants were asked to write their hopes on colorful paper and then attached to a blackboard shaped like a tree. In the briefing session, three materials were very interesting and important for the younger generation. The first material is healthy living skills education which includes social skills (Self-awareness, Interpersonal Relationships, Empathy, and Effective Communication); thinking skills, and emotional skills (overcoming stress and controlling emotions). The second material, the urgency of the Student Health Cadre as an agent of change needs to be involved in becoming a "campus health cadre" to realize a healthy campus by encouraging the achievement of "GERMAS (healthy living community movement)" or Healthy Living Community Movement. Student involvement starts with planning, implementing, monitoring, and evaluating the program. The third material is the No Smoking Area (KTR) Ambassador or KTR Task Force on Campus. In this third part, students are equipped with the knowledge and skills to become a KTR task force on campus. During the training, the participants seemed enthusiastic as shown by actively asking questions and responding positively to the material provided by each resource person, and at the end of the session it was agreed to create a WhatsApp group as a follow-up to the program. Based on the pretest and post-test, there was an increase in the average knowledge of students related to healthy living skills education, with an average score before training of 69,67 to 78,67 after training with P value < 0,05 (Table 1). In addition, trainees are committed to helping implement healthy campuses such as admins on healthy campus social media in the form of Instagram accounts and Facebook

accounts (Figure 1). Trainees are expected to be pioneer peer educators for other students in terms of practicing a healthy lifestyle.

Table 1. Result of Paired T Tes

	n	Mean±SD	Difference Mean±SD	IK 95%	P-value
Pretest	30	69,67±3,58	9,00±6,79	5,90-12,04	0,000
Posttest	30	78,67±3,58			

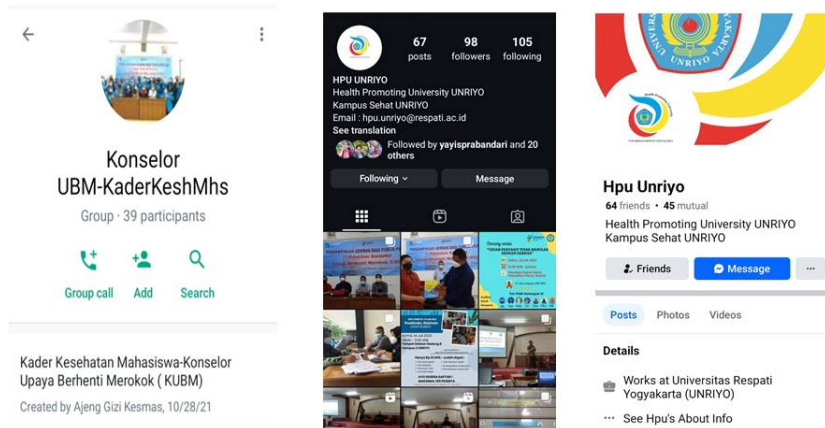


Figure 1. Student health cadres as social media account admins and content creator

DISCUSSION

Student Health Cadres Training is part of a healthy campus program known as a health-promoting university, especially for tobacco control on campus or zero-tolerance tobacco. The implementation of this training went well and the training objectives could be achieved. Indicators of success in increasing cadre knowledge in the implementation of cadre training are measured by the average pre-test and post-test scores. Knowledge is gained from the learning process. In this cadre training, the learning process carried out is the delivery of material and discussion after the provision of material. The increase in scores between the pre-test and post-test may be due to new information received in the training (10), The new information can replace previously obtained information or refine previously received information (11). The increased knowledge of cadres in training is influenced by the activeness and attention of cadres during the training process. Increased retention of one's knowledge and skills can be influenced by the presence of frequent and repeated information or knowledge. Lack of cadre knowledge can be caused by limited cadre coaching, especially from health workers at public health centers (12). Thus, it is very important that cadre training is conducted on an ongoing basis to maintain their skills and knowledge over time. This ensures that the role of health cadres remains effective, and able to adapt to evolving health challenges, especially those within their communities (13).

This research is different from previous studies because the target of the research is students of the faculty of health sciences. However, there is still a common thread with the results of previous studies. Research in Sleman Yogyakarta states that the role of cadres in the implementation of “posyandu” or integrated health service post is as health promoters, who can provide health information to the community, mobilize the community to carry out clean and healthy living behavior, and invite the community to come to the integrated health service post. (14). The role of cadres in integrated health service posts can help the community in reducing the incidence of malnutrition and maternal and infant mortality (14). Thus, the role of cadres is very important to carry out behavior change strategies

16 through tailored interventions (15). One strategy to change behavior is to provide information to increase knowledge so that awareness arises which will make someone behave following this knowledge.

8 One way to provide this information is through training. In the theory put forward by Azwar it is stated that a person's knowledge is one of the factors that can influence a person's attitudes and actions (16). The results of Sukiarto's research also state that training with certain learning methods can provide direct benefits to changes in cadres' abilities (14). Training has shown significant improvements in knowledge and skills among health cadres. One study reported an increase in cadre knowledge on controlling NCD risk factors from 60% to 80% post-training (17). From the new knowledge and skills gained in the training, cadres can improve their performance and ability to manage healthy campuses.

18 The training and legalization provided by the school to the children increased their motivation to remind each other to always maintain health protocols by washing hands with soap, using masks, maintaining distance eating healthy food, and being willing to receive vaccines (18). Based on the results of previous research, it was found that the problem often faced by pesantren is the low awareness of clean and healthy living behavior. As a result, many students experience illness and high transmission of infectious diseases among students. Education of the basics of clean and healthy living behavior of students— clean and healthy living behavior (PHBS) is expected to increase the value of “student” or student knowledge related to the urgency of PHBS implementation. The formation and training of Healthy student Cadres is also expected to be one of the efforts to improve healthy living life skills for students to live healthy independently while maintaining the stability of the quality of a healthy environment in the pesantren that will be formed (11). Another problem that is often experienced by school adolescents is related to reproductive health, and often the problem stems from a lack of information and understanding as well as awareness of adolescents to achieve reproductive health. Therefore, cadres are formed and training is conducted for school adolescents' healthy reproductive peer cadres so that they can become a source of information for other adolescents related to reproductive health (20).

8 The results of this study are also in line with previous researchers who stated that the training increased knowledge in parents, teachers, and peers from before and after health education and training (21). Health education is given to adolescents to increase understanding in adolescents related to non-academic understanding of adolescents. Health education related to body fitness also needs to be given to adolescents to improve adolescent health. In addition to health education, demonstrations need to be carried out, in this case, training related to obesity prevention in adolescents. (21). Increased knowledge usually occurs after health education activities. Various health education provided to adolescents to increase adolescent knowledge so that they become healthy and accomplished adolescents. The training activities were also recognized as an efficient effort to improve knowledge and skills as well as confidence in mental health trainees for pharmacists, pharmacy staff, and students (22).

The results of this study have provided evidence-based information that providing health counselling using printed and electronic poster media will effectively increase knowledge and improve the attitudes of community leaders toward the prevention and control of Pulmonary TB disease. Thus, this health counselling can also be implemented in other Health Center working areas. In addition, the results of this study have validated the ecological approach to health promotion. The linkage of concepts in the Precede and Proceed Model in this study can be seen in the aspects of knowledge and attitudes of community leaders as predisposing factors, health education programs as enabling factors, and community leaders as reinforcing factors have functioned synergistically in achieving program goals (23).

40 To maintain the sustainability of the program, a WhatsApp group of smoking cessation counsellors has been created whose members consist of students and lecturers. Furthermore, the use of social media such as Instagram and Facebook as health promotion media has been started by involving student health cadres as content creators. 34 Furthermore, a strong commitment from the institution and financial support are needed for the sustainability of the smoking cessation counselling corner program on campus. Smoking cessation training aimed at enabling participants to become smoking cessation counsellors was conducted using lectures and question-and-answer methods. The results of the training can be seen from the participants' pretest and post-test scores. Based on the pretest-post-test results, almost all participants experienced an increase in scores. This shows that the participants were able to understand the training material provided well (24). The existence of peer counsellors as an effort to stop smoking is known to have a very significant effect on the motivation of adolescents to stop smoking. It can be seen that the presence of peer cadres is very effective in increasing motivation to quit smoking (25). While education and training

are essential in health promotion activities, challenges also remain, such as the need for more engaging training programs that ensure sustained interest and student participation in health initiatives (26).

On a different topic, the training of health cadres for the prevention of non-communicable diseases began with a pretest on the first day and continued with the provision of modules and explanation of module content, and at the end of the training session, a post-test was conducted. On the second day, health cadres simulated health education using flipchart media. The third stage: is the application of health education to people who have one or more risk factors for non-communicable diseases. At this stage, questionnaires were filled in before and after the health education. Results. Based on the results of this activity, the average knowledge of cadres before training was 56%, and after training increased to 83.3% while the average cadre score during simulation was 76.67 or good category. Community knowledge after being given education by health cadres shows a difference. Conclusion. This activity shows an increase in cadre knowledge after training and the effect of education provided by health cadres on community knowledge. In the future, activities like this need to be improved and can encourage the formation of Non-Communicable Diseases (NCDs) “posbindu” di in this activity area (11). Research related to elderly cadre training, which aims to provide education on healthy aging and elderly well-being, significantly improves the skills of health cadres by equipping them with essential knowledge and practical abilities to provide comprehensive health services for the elderly (27).

Different methods are conducted through education and training on non-communicable diseases for health cadres in the Piyungan Health Center working area, namely the CBIA method. Methods Cara Active Human Learning (CBIA) which consists of 2 activities, namely counselling containing materials and training on NCDs early detection skills. This activity was attended by 30 cadres who were very enthusiastic during the activity. The results of the activity showed an increase in cadre knowledge with a good category of 80%, and sufficient by 20%. Improved cadre skills showed good results, namely 100% of cadres were able to check vital signs and anthropometry and 70% of cadres were able to check blood sugar levels. This PKM activity is concluded to be able to improve the knowledge and skills of cadres about NCDs (12).

The establishment of health cadres was also made to address reproductive health issues. Adolescent health cadres conduct reproductive health counselling at MTs Annidhomiya NU in Desa Buniwah. The output of this activity is the increased knowledge of adolescents about reproductive health and the formation of adolescent health cadres totalling eight adolescents from IPNU IPPNU Desa Buniwah so that they can provide reproductive health information, especially the dangers of HIV AIDS. The youth health cadres that have been formed then receive cadre training with material and practice of simple physical examinations (28).

In a different place, training on NCD screening and prevention was conducted for health cadres. This training aims to provide skills to determine a person's health condition based on Body Mass Index (IMT). And simple blood tests. Health cadres who have been equipped with the skills to determine BMI and simple blood tests can then independently detect NCDs in the community. Nutrition training aims to provide skills to calculate the nutritional adequacy of a day's menu. Educational videos on how to do simple blood tests were made to replace hands-on training due to the limitations of the COVID-19 protocol. Before and after the training, pre and post-tests were conducted. The training was attended by 15 health cadre participants in Pedukuhan Gamping Kidul, Ambarketawang, Gamping, Sleman, Yogyakarta. The pre-training mean score of 67.14 increased to 73.57 afterward. The paired T-test analysis showed no significant difference in pre- and post-scores ($p=0.076$). After receiving training, it is hoped that health cadres can carry out screening independently in their respective the integrated health post environments, so that early detection of NCDs in the community can run, and then prevention can be carried out so that they do not become complications. It is concluded that the training can improve the understanding of health cadres about PTM screening, prevention, and calculating a balanced nutritious menu but not significant (29).

The number of students in higher education can be a potential challenge for the implementation of mobilizing healthy campus activities. The Healthy Campus Program is a synergy of promotive and preventive efforts as an embodiment of the application of Healthy Living Community Movement (GERMAS) in Higher Education following the mandate Presidential Instruction No.1 Year 2017 Higher Education is a place of learning and development of knowledge as well as a place to form the character of students as a superior young generation of Indonesia. The Healthy Campus Program is the basis for realizing superior human resources from higher education. (30,31). Universities as a place of education for the younger generation and also a gathering place for productive age groups, have the potential to become agents of change for healthy living behaviors that contribute to realizing superior human

resources. The potential that exists in higher education is very good to be developed as a Healthy Campus as recommended by the ASEAN University Network (AUN). Healthy University developed by AUN was adopted by the Ministry of Health in the form of a Healthy Campus Program which aims to form healthy living behaviors in the productive age population consistently which becomes a culture supported by campus policies through the Tri Dharma of Higher Education and is consistently applied in the Campus environment (1). Creating a cohesive wellness team on a campus or college and implementing evidence-based strategies for health promotion initiatives is considered effective for fostering health and wellness on campus (32).

With the training of student health cadres that focuses on increasing awareness of a healthy lifestyle, it is hoped that students can become active agents of change in encouraging the realization of a healthy campus environment. In addition, with the material on the impact of cigarettes on health and the economy, it is hoped that students can better understand the risks they face, not only in terms of personal health, but also in terms of broader social and economic aspects. The process of identifying smoking behavior in students that is carried out directly in this training also provides a more concrete understanding of smoking behavior patterns among students, so that preventive measures and interventions can be carried out more precisely. This activity will certainly have a positive impact on creating a smoke-free campus, supporting the smoke-free policy that is increasingly emphasized in many universities. However, to achieve this success, universities need to conduct periodic evaluations and supervision of the implementation of this health cadre training, to ensure that the material presented can be understood and applied properly by students.

In addition, collaboration with various parties, such as health agencies, local governments, and student organizations, is also very important to support the sustainability of this program. It is also important to consider the supporting and inhibiting factors in implementing a healthy campus program. Supporting factors such as the commitment of university leaders, facility support, and active involvement of students in campus health organizations can facilitate the program. Conversely, inhibiting factors such as a lack of understanding from students about the importance of healthy living or the existence of a cultured smoking habit among some students can be a challenge. Therefore, effective communication strategies, a humanist approach, and incentives for students who are active in supporting a healthy campus need to be considered. In the future, with the replication of the health cadre training program in various universities, it is hoped that campuses throughout Indonesia can work together in creating a healthy, smoke-free environment, and support the achievement of broader public health development goals. This will not only benefit the students themselves, but also the surrounding community and future generations.

Based on several studies from previous research, it can be concluded that health cadre training with student targets aimed at supporting the implementation of healthy campuses has not been widely carried out, so this is a future opportunity to involve students in strengthening the sustainability of healthy campus programs. Training student health cadres who equip students with healthy living skills education material, the impact of smoking on health and the economy, and the identification of smoking behaviour in students directly is a novelty of this paper. Moreover, the innovation of student health cadre mentoring activities to strengthen the implementation of a healthy campus can be replicated in other universities by adopting training materials and processes. The next thing to consider is the supporting and inhibiting factors of the campus to be initiated. If this can be prepared and anticipated, many other healthy campuses will emerge.

Limitations and Cautions

This research has several limitations that can impact its effectiveness. These limitations include challenges in student engagement, resource constraints, and the complexity of implementing health initiatives across diverse university environments. Engaging students as health cadres relies heavily on voluntary participation, which can be inconsistent and may not attract a representative sample of the student body. Sustaining student motivation and commitment over time can be difficult, especially when competing academic and personal priorities are present. Implementing health initiatives often requires significant financial resources and time, which can be a barrier for universities with limited budgets. Aligning health initiatives with academic programs can be complex, requiring careful planning and collaboration across departments. While engaging students as health cadres presents challenges, it also offers opportunities for fostering a health-conscious culture on campus. By addressing these limitations through strategic planning and resource allocation, universities can enhance the effectiveness of their health initiatives.

Additionally, involving students in health promotion can empower them to become advocates for health in their communities, potentially leading to broader societal benefits.

Recommendations for Future Research

Capacity building of health cadres needs to be carried out regularly as a means of sharing experiences and maintaining commitment among these cadres. Furthermore, it is necessary to advocate for university leaders to provide funding support for healthy campus programs so that activities can continue to run. In addition, universities can integrate health cadre activities into the curriculum or create training modules for program sustainability. For future research include exploring the long-term impact of student health cadres on healthy campus implementation, improving research methods with control groups and the use of longitudinal designs.

CONCLUSION

Student health cadre training is one of the important activities in implementing a healthy campus. This activity is the realization of involving students as subjects of a healthy campus. Health cadre training that involves students as agents of change to support the implementation of a healthy campus is still a great opportunity to be developed. This training can equip students with knowledge about healthy lifestyles, the negative effects of smoking, and how to identify smoking behaviour among students. The innovation of student health cadre mentoring activities can be replicated in other universities by adapting training materials and processes that have proven effective. The success of the healthy campus program is highly dependent on supporting factors such as the commitment of university leaders, facility support, and active student participation. However, challenges such as smoking habits that have been cultivated among some students need to be overcome with the right approach. If supporting factors can be maximized and obstacles can be overcome, many other healthy campuses will emerge in the future, having a positive impact on the health of students and the wider community. Students who have attended the training are expected to become pioneer peer educators for other students in terms of practicing a healthy lifestyle. Good cooperation between universities and campus partners, in this case, the Sleman Regency Health Office, determines the success of the activity.

AUTHOR'S CONTRIBUTION STATEMENT

All authors confirmed their contributions to the paper as follows: study conception and design—HT. Data collection—AAS; analysis and interpretation of results—HT & AAS. Draft manuscript preparation—HT & AAS. All authors reviewed the results and approved the final version of the manuscript.

CONFLICTS OF INTEREST

The author(s) declare no conflicts of interest.

SOURCE OF FUNDING STATEMENTS

This research received funding from the Ministry of Health in August 9, 2021 as a joint commitment to implementing a healthy campus in Indonesia.

ACKNOWLEDGMENTS

Thanks to the Ministry of Health of the Republic of Indonesia who funded this research, and the entire team involved in this research.

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