e-ISSN : 2597-6052

MPPKI MEDIA PUBLIKASI PROMOSI KESEHATAN INDONESIA

Review Articles Open Access

How Does Media Literacy Affect Smoking and Vaping Behaviors among Adolescents? A Systematic Literature Review

Danang Wahansa Sugiarto[1*], Fajrin Violita[2]
[1]Faculty of Medicine, Universitas Sebelas Maret, Surakarta, Central Java, Indonesia
[2]Faculty of Public Health, Universitas Cenderawasih, Jayapura, Papua, Indonesia

***Corresponding Author: E-mail:** danang.wahansa@staff.uns.ac.id

ARTICLE INFO

Manuscript Received: 18 May, 2025
Revised: 18 Aug, 2025
Accepted: 25 Aug, 2025
Date of Publication: 04 Oct, 2025
Volume: 8
Issue: 10
DOI: 10.56338/mppki.v8i10.8113

KEYWORDS

Media Literacy;
Adolescent;
Smoking;
Vaping

ABSTRACT

Introduction: Smoking remains a global health problem. In addition to conventional cigarettes, a new type of cigarette has emerged called electronic cigarettes (e-cigarettes or vapes). It is known that media exposure greatly influences adolescents' initiation into smoking. Based on this, a concept and intervention called media literacy was developed. This study examines how media literacy is measured or implemented in adolescents' smoking behavior, both conventional and electronic.

Methods: This study is a systematic literature review, and a review protocol based on the Preferred Reporting Items for Systematic Review and Meta-Analyses (PRISMA) was used. A literature search using 4 reputable databases, namely Scopus, PubMed, Sage Journal, and Wiley Online Library, yielded 215 article findings. After the screening and review process, 7 eligible articles were selected based on the inclusion and exclusion criteria.

Results: From the 7 selected research articles, it was found that media literacy has a positive relationship or influence on adolescent smoking behavior. This is evident from various research findings that show media literacy can increase knowledge and awareness of depictions of encouragement to smoke in the media they see and/or hear. These results were found from research on 4 continents, and no research results from the African and South American continents met the inclusion criteria.

Conclusion: It is shown that media literacy is considered effective in increasing adolescents' knowledge and awareness of how the media tries to persuade them to try smoking, continue smoking, or vape. The results suggest developing learning modules or curricula that introduce and discuss media literacy in schools, either intracurricular, co-curricular, or extracurricular. Suggestions for future research include developing media literacy research tailored to local wisdom conditions and its application to measure or intervene in other risky health behaviors.

Publisher: Fakultas Kesehatan Masyarakat Universitas Muhammadiyah Palu

INTRODUCTION

Smoking remains a global health problem. Tobacco, the primary ingredient in cigarettes, kills approximately 8 million people worldwide each year. Specifically, 7 million people die from direct tobacco use (as active smokers), and the remaining 1 million die from passive smoking. All forms of processed tobacco are hazardous, and there is no safe level or dosage. It is estimated that there are approximately 1.3 billion annual tobacco users, 80% of whom live in low- and middle-income countries (1).

In addition to conventional cigarettes, a new type of cigarette has emerged called electronic cigarettes (e-cigarettes or vapes). There are many types of e-cigarettes available, but the most common are electronic nicotine delivery systems (ENDS) and electronic non-nicotine delivery systems (ENNDS). Many believe that e-cigarettes are safer and healthier than conventional cigarettes. However, e-cigarettes are inherently dangerous. This is because the liquid used in ENDS e-cigarettes typically contains nicotine and other harmful substances. Smoking e-cigarettes containing nicotine is not 100% risk-free (2).

Nicotine exposure in pregnant women will negatively impact fetal development. Furthermore, nicotine consumption in children and adolescents will negatively affect brain development, resulting in long-term consequences and potentially leading to learning disabilities and anxiety. According to the WHO, the increase in e-cigarette use has tripled, especially among adolescents who initially did not smoke (2).

From the research results, it is known that media exposure greatly influences adolescents' initiation to smoking, both in the form of narrative contexts, such as films, and in persuasive contexts, such as advertising (3,4). Based on this, a concept and intervention called media literacy was developed. The development of media literacy (in the realm of health communication) is considered more cost-effective than trying to advocate for the formulation of policies that completely prohibit promotions related to cigarettes and e-cigarettes (5). Media literacy is the ability to understand, analyze, evaluate, and produce a message in various forms of media critically (6). Media literacy shows the capacity or competence to do something with media, both in terms of knowledge, production, or understanding its role in society (7). The goal of media literacy is to get people to stop and/or not smoke, by reducing the impact of pro-tobacco media messages by educating people to critically identify how messages from media exposure about smoking that they encounter every day are trying to influence them negatively (8).

Based on the theoretical framework developed by Manganello, media literacy is one dimension of health literacy in adolescents. Within this framework, Manganello describes health literacy as consisting of four dimensions: functional literacy, interactive literacy, critical literacy, and media literacy. These four dimensions of health literacy in adolescents will influence health outcomes, including health behaviors, such as smoking, whether conventional or e-cigarettes (9).

Based on this, this study aims to examine how media literacy is measured or implemented in smoking behavior, both conventional and electronic, among adolescents. This research will also examine where media literacy research has been implemented. This will also serve as a reference for the geographic representation of the research conducted, which will inform the implementation and development of media literacy policies for controlling smoking behavior. The authors want to see how effective and successful this media literacy concept is in changing adolescents' perceptions of smoking behavior, and even changing their behavior. This constitutes a critical issue given adolescents' substantial exposure to tobacco-related and/or smoking-related media content.

METHOD

This research is a review research and uses a systematic literature review approach. This systematic literature review uses a protocol based on the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA). In practice, to facilitate the interpretation of the findings, flow diagrams and checklists are used, which are also based on PRISMA standards (10). The research questions in this study are further elaborated using the PICO (Population, Intervention, Comparison, and Outcome) method.

Table 1. Research Questions with the PICO Approach

PICO Approach	Explanation
P (Population)	Individuals who are or have entered the adolescent phase (10-24 years)
I (Intervention)	Adolescents who were measured or received intervention related to media literacy
C (Comparison)	Adolescents who were not measured or received intervention related to media literacy
O (Outcome)	The relationship or influence of media literacy on smoking behavior, both conventional and electronic

The use of the PICO method will make it easier for authors to analyze research content from search results, both from the title, abstract, or by looking at the contents of the journal (from the introduction, methods, results, discussion, or conclusion).

This study used 4 reputable databases, namely Scopus, PubMed, Sage Journal, and Wiley Online Library. In the process of searching for scientific articles, the author used a Boolean operator with the keywords "media literacy" AND ("smoking" OR "vaping") AND "adolescent", in all four databases. The author also used a filtering feature to make it easier to find the desired articles according to the predetermined inclusion criteria. The author used filters: 1) published in the last 5 years, 2) open access journals, 3) articles are original research articles, and 4) use English. The process of searching and analyzing articles was carried out in May-June 2025.

The inclusion criteria used in search keywords and search filters in reputable databases are useful for making it easier for authors to find appropriate and desired articles that are in line with research objectives. In addition, this filter and keyword function is also useful for finding the latest and most relevant articles. This systematic review focused on media literacy related to smoking (both conventional and e-cigarette) among adolescents. Therefore, articles that did not address media literacy, or were unrelated to smoking behavior, or did not show a causal relationship between variables (for example, instrument testing), or were not adolescent subjects were excluded.

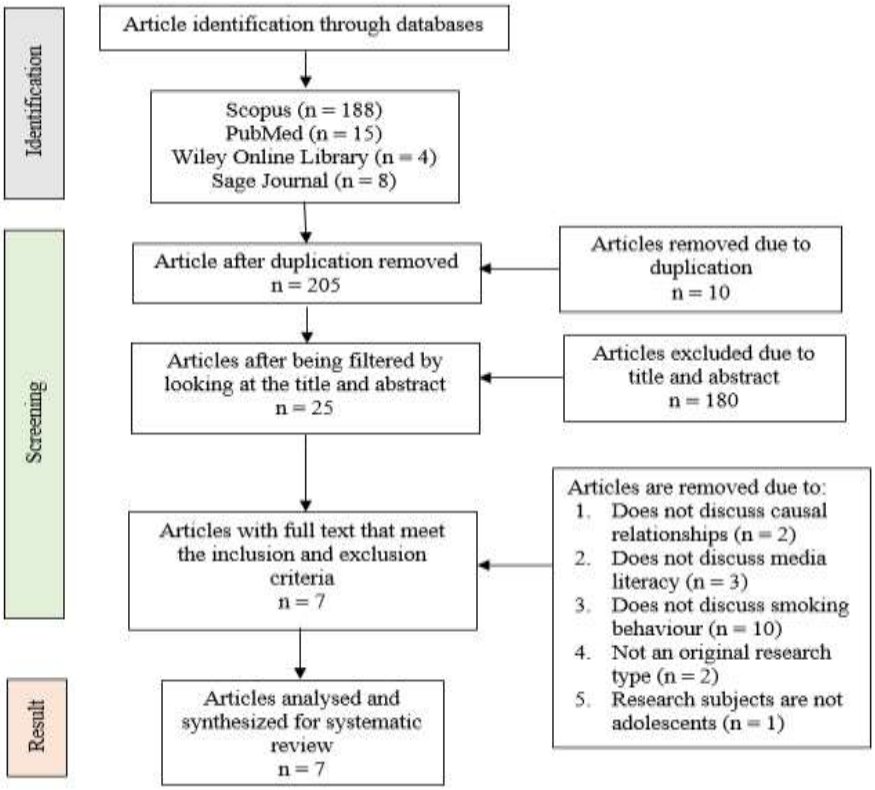

Figure 1. Flow Diagram of Article Selection using PRISMA Protocol

A total of 215 scientific articles were found from the search results in four databases. During the screening process, 10 articles were excluded due to duplication, leaving 205 articles. Screening was then continued based on the titles and abstracts, and 180 articles were excluded from the process because they did not meet the inclusion criteria, leaving 25 articles. The articles were then screened again, and 18 articles were excluded because their journal content did not meet the inclusion criteria. After a feasibility test, 7 articles were deemed suitable for the analysis stage. The analysis was conducted thematically with a qualitative approach. The author analyzed how media literacy is measured or applied in research and examined its impact on adolescent smoking behavior as research subjects. The thematic analysis used steps based on the Braun & Clarke study, which consists of 6 steps, namely 1) familiarization; 2) coding; 3) generating themes; 4) reviewing themes; 5) defining and naming themes; and 6) reporting (11). These thematic analysis steps are also emphasized in Heriyanto's study in information retrieval (12).

To obtain valid and reliable findings, the author employed two independent (external) reviewers to assist in assessing the literature search results. The author used a Cohen's Kappa score ranging from 0 to 1. The review results from the two external reviewers yielded a Cohen's Kappa score of 0.7. Based on Landis & Koch's indicators, this score falls into the "substantial" category and is worthy of further analysis (13).

RESULTS

From the results of the article selection, 7 articles were obtained which were analyzed thematically using a qualitative approach which are presented in Table 2.

Table 2. Summary of the Articles that Have Been Analyzed

No.	Author(s)	Study Design and Research Period	Subject	Measurement Method or Tool	Research Result
1	Park & Lee (2025) (14)	An experimental study, with intervention methods divided into several clusters, using a randomized controlled trial. The intervention was developed based on a media literacy framework. Measurements were taken one week after the intervention and again three months later. The intervention was conducted from May to June 2019.	The total number of study subjects was 250 10th-grade male students from a school in Gangwon Province, South Korea. These subjects were divided into two groups: an intervention group and a control group.	The intervention group used five educational and learning modules on smoking media literacy, based on the media literacy framework. The control group used the TASEP approach.	Following the intervention, significant improvements were observed in understanding (knowledge) of smoking media literacy measured in the first week and the third month. However, there were no significant changes in attitudes and norms toward smoking behavior.
2	Kim (2021) (15)	The experimental design used an intervention mapping protocol (IMP) approach, known as the media literacy-based smoking prevention program (MLSP). The exact date of the study isn't specified, but one of the intervention steps mentions the year 2020.	In the first phase, researchers selected 24 female high school students in South Korea (the number of schools was not specified). Additionally, 12 teachers were included as additional subjects. In the final phase (evaluation), researchers used three female high school students as subjects.	Using the intervention mapping protocol (IMP), which was developed with 6 steps, namely 1) needs assessment, 2) program goal setting, 3) selection of intervention methods, 4) production of program components and materials, 5) program implementation	Smoking prevention programs for high school girls need to be developed, focusing on media literacy. The MLSP was deemed valid, feasible, and acceptable, and can be further developed and utilized. The MLSP can reduce smoking intentions among high school girls.

No.	Author(s)	Study Design and Research Period	Subject	Measurement Method or Tool	Research Result
				planning, and 6) program evaluation.	
3	Dai et al. (2025) (16)	The research used an experimental study, using a prospective pilot intervention study method. The study was conducted from July to December 2022.	Adolescents attending school in Nebraska, USA, aged 12-17 years, who obtained consent based on messages in electronic health records.	Using intervention with media called MediaSense. There are surveys before and after the intervention using REDCap media.	Pre- and post-intervention results resulted in a 148% increase in media literacy related to vaping (e-cigarette use). Furthermore, subjects' expectations about vaping decreased and their perceptions of its dangers increased. MediaSense is considered a viable method for preventing e-cigarette smoking (vaping) using electronic health records.
4	Lazea et al. (2020) (17)	The study used a cross-sectional design using a questionnaire. The research period was not clearly stated.	Adolescent students aged 13–15 were recruited from seven schools in two cities in northwest Romania. A total of 1,147 subjects were recruited.	The study subjects or participants completed a self-administered questionnaire with 18 items discussing internet media literacy and palpitations. However, the study design also examined risk factors for palpitations, one of which was smoking (which was also analyzed alongside internet media literacy).	An independent association was found between internet use and both palpitations and smoking behavior. The faster the heart rate due to internet use, the greater the risk of smoking behavior.
5	Sadza et al. (2024) (18)	The study used a qualitative design. The qualitative study was conducted in two phases. The study was conducted in the Netherlands from 2019 to 2020.	The first phase of the study used seven groups. Each group consisted of mixed-gender 10th-grade adolescent students (for a total of 42 informants). The second phase of the study used a total of 50 informants. The adolescent informants ranged in age from 14 to 17 years.	The first phase of the qualitative study used a focus group discussion method. This phase was useful for gaining a deep and varied understanding of how adolescents perceive and interpret risky health behaviors in the media, one of which is smoking. The second phase of the qualitative study used in-depth interviews. This method was useful	The research results show that the subjects are far from passive consumers. They expressed awareness of the symbols or narratives of risky behavior in the media they viewed. Real-world experiences and the characteristics of the messages in the media they viewed informed their assessment of each individual's depiction of risky behavior.

No.	Author(s)	Study Design and Research Period	Subject	Measurement Method or Tool	Research Result
				for delving deeper into the topic, but within an individual context. The research focused on the process of deciding whether or not to engage in risky behaviors (smoking) as portrayed in the media.	Adolescents' perceptions and evaluations of risky behavior in entertainment media were found to be balanced, with a balance between indifference and naivety in interpreting media. Furthermore, a highly critical awareness of media literacy skills was found.
6	Michaud et al. (2025) (19)	The experimental study design used a randomized control trial with a pilot study intervention approach. The study was conducted from December 2023 to August 2024.	Individuals aged 19-29 who had used e-cigarettes in the past 30 days and intended to quit vaping within the next 30 days in Nebraska, USA, were included. A total of 80 samples were collected.	Researchers used an intervention method by dividing the sample into four study groups: 1) those receiving text message support only, 2) those receiving text message support and media literacy education, 3) those receiving text message support and financial incentives, and 4) those receiving text message support, media literacy education, and financial incentives.	At the time of publication, the research results were still being analyzed. However, it is assumed that the analysis will provide a deeper understanding of e-cigarette cessation strategies in the young adult population, using a media approach.
7	Zahrai et al. (20)	This cross-sectional study examined the relationship between implicit attitudes toward social media and impulsive social media use; the relationship between impulsive social media use and negative real-world social media impacts; the relationship between self-control and impulsive social media use; and the relationship between implicit attitudes toward social media and low self-control and impulsive social media use. These variables were also examined to determine how these	Respondents were adolescent who used social media for at least two hours per day in New Zealand. A total of 389 respondents were included in the study.	Researchers used several instruments, such as the single-category IAT (SC-IAT, adapted Momentary Impulsivity Scale, Online Cognition Scale Addicted Internet Users, Excessive Internet Use Scale, Bergen Facebook Addiction Scale, Chen Internet Addiction Scale and Generalized Problematic Internet Scale, Self-Control Scale. Data were collected by online survey. Data analysis used the partial least	The study found that excessive social media use is more influenced by an individual's implicit attitudes. High self-control is associated with healthy social media use. However, self-control is not significantly associated with excessive social media use, positive implicit attitudes, and impulsive social media use. Therefore, reasonable social media use can help control risky health

No.	Author(s)	Study Design and Research Period	Subject	Measurement Method or Tool	Research Result
		variables relate to risky health behaviors, such as smoking.		squares structural equation modeling method.	behaviors, such as smoking.

Based on Table 2, it was found that media literacy has a positive relationship or influence on adolescent smoking behavior. This is evident from various research findings that show media literacy can increase knowledge and awareness of depictions of encouragement to smoke in the media they see and/or hear. In Figure 2, there is a summary of research results with graphic visualization based on the type of study design and research location.

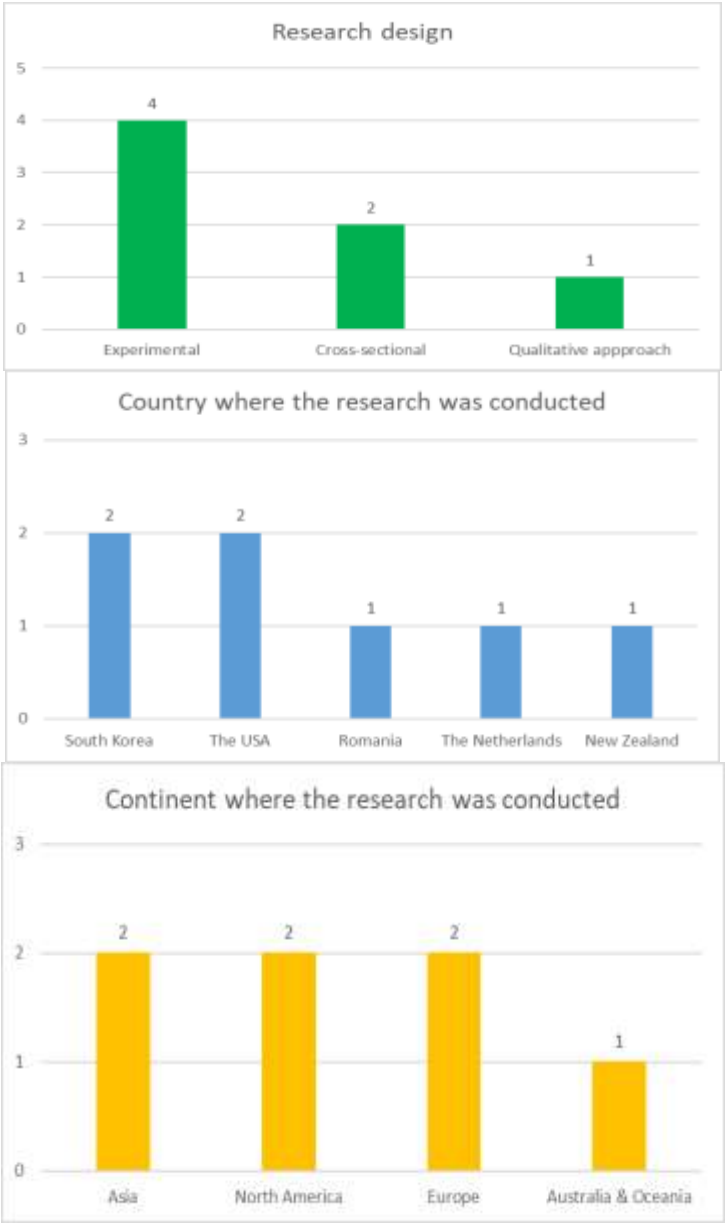

Figure 2. Summary Graph of Article Findings

Figure 2 shows that there are three types of research designs used: experimental design, cross-sectional design, and qualitative design, with experimental design being the most widely used study design. Based on the research location, the results were conducted in five countries: South Korea, the USA, Romania, the Netherlands, and New Zealand. If the research locations are grouped geographically by continent, the results of this study represent research from the continents of Asia, North America, Europe, and Australia-Oceania. This study did not find any research results from countries in the continents of South America and Africa that met the research inclusion criteria.

DISCUSSION

Based on the results in Table 2, it was found that media literacy significantly influences students' smoking behavior, both conventional cigarettes and e-cigarettes. This is because a child's developmental stage plays a role in how they respond to advertising. Children and adolescents still do not understand the concept of sales promotions. According to the Canadian Paediatric Society's study, children and adolescents tend to be more trusting and will base their decisions on what they see and hear. If they don't have a product that reflects their senses, they tend to feel less socially present, and this is no exception when it comes to cigarettes and e-cigarettes. Most children and adolescents also do not understand the difference between a program designed to entertain and a commercial designed to sell a product (21). The results of a report by Rideout et al. showed that the average duration of media exposure for adolescents was 7 hours and 38 minutes, with the highest duration reaching 10 hours and 45 minutes per day (22). This exposure came not only from "old" or traditional media (such as TV) but also from new media, such as the internet and social media (23).

The media has an element called the media effect. The media effect is the impact resulting from media exposure, namely, behavioral changes. It is known that adolescents spend almost 45% of their daily activity hours accessing media, both traditional and new media. Adolescents' considerable and intense media exposure will result in social legitimacy of the reality depicted in the media, which ultimately can influence behavior. The media has the power to depict behaviors depicted in the media as socially acceptable, and can even make the reality in the media more believable than the social reality that occurs in society, one of which is smoking (23,24). Therefore, media literacy skills are needed to process and critique media messages, thereby reducing the impact of changes in risky behavior.

Media literacy education is crucial. This is because exposure to cigarettes through mass media messages, such as promotions and advertisements, increases the risk of adolescents initiating smoking. This is supported by tobacco companies demonstrating that their advertising effectively targets young people (25). Furthermore, the tobacco industry has developed large-scale marketing approaches to target and entice young people to start smoking and/or become regular smokers (26).

Applying media literacy to health means helping young people recognize that the media is a business selling products and behaviors that are sometimes not good for adolescents. By raising awareness of how the media produce and package messages, adolescents will be more critical of what they see and hear. Furthermore, they will be aware of and ignore the negative health products and behaviors that appear in the media (27). Media literacy is not only effective in reducing the number of smokers or eliminating someone's initiation to smoking, but also effective in reducing other health-risk behaviors, such as unhealthy and nutritionally deficient eating habits, risky sexual behavior, alcohol use, violent behavior, and stress symptoms (28).

Media literacy is considered the most effective method to date in controlling smoking, vaping, and other tobacco product use. This is due to the lack of a specific policy to completely ban cigarette promotion and marketing in the mass media, also known as TAPS (Tobacco Advertising, Promotion, and Sponsorship). This allows mass media to encourage youth to smoke, which can be seen almost everywhere, such as in films, on television, and the internet. The tobacco industry contributes to this phenomenon by developing a large-scale marketing approach to attract young people to start smoking and/or become regular smokers (3,4,26,29). Research shows that 3 out of 5 adolescent students (56.8%) reported seeing someone smoking on television, in videos, or films in the past 30 days. Furthermore, the research results also showed that as many as 65.2% of respondents noticed tobacco advertisements or promotions at points of sale, 6% of respondents were ever offered a free tobacco product from a tobacco company representative, and 10.5% of respondents owned something with a tobacco brand logo on it (30). The policies issued regarding cigarette marketing, so far, are the requirement to write the dangers of smoking and pictures of the bad effects of

smoking on cigarette packs or standardize cigarette packaging, such as in Indonesia, Canada, the USA, Australia, and Sweden (31,32,33). However, this policy is considered not to have been implemented optimally, and there is minimal monitoring and supervision (34).

One of the media literacy intervention strategies that has been developed and proven effective is school-based intervention, but this is still rarely tried or even evaluated. In examining this issue, Primack et al. developed a framework to address the problem of cigarette use among adolescents by examining perceptions about smoking. This framework is called smoking media literacy. This framework was developed using the Theory of Reasoned Action (TRA) approach. According to Primack et al., this smoking media literacy framework has three domains: Authors and Audiences (AA), Messages and Meanings (MM), and Representation and Reality (RR), which are constructs in each media exposure. In short, the AA domain contains the concept of the powerful and manipulative image of the tobacco industry to target certain groups. The MM domain shows how marketers promote tobacco using various attractive production techniques, which can evoke emotional responses. The RR domain describes an understanding of the difference between tobacco images in the media and the actual effects of tobacco use on health (8).

Several studies have used Primack's theoretical framework, both in the USA and outside the USA. A pilot study conducted by Bier et al., using Primack et al.'s smoking media literacy approach, showed that media literacy education materials successfully improved the literacy skills of school students in Missouri, USA, and approximately 80% of students enjoyed, actively participated in, and agreed that this program would successfully reduce the number of adolescent smokers (35). Several other studies, using Primack et al.'s smoking media literacy approach, have also shown results on the relationship between smoking media literacy and adolescent smoking behavior. In the United States and Argentina, high smoking media literacy was strongly associated with a decrease in high school adolescents who smoke (current smoking) (36,37,38). Research conducted in Vietnam, Hungary, and Indonesia also showed that high smoking media literacy was associated with a lower number of high school adolescents who smoke (39,40,41). The results of research by Bier et al., conducted on junior high school adolescents, and Primack et al. at the university level showed that high smoking media literacy was associated with a lower number of adolescent smokers (42,43). In Africa itself, based on research by Aienobe-Asekharen et al., it was found that the implementation of health communication related to tobacco use was deemed ineffective because it was only effective in the first 3 weeks and was only implemented in several countries on the African continent (44).

Practical applications of media literacy can be conducted by integrating media literacy into curricular activities. This is because media literacy designs are more suitable for implementation within learning modules. This approach has been implemented in several regions, such as Canada and California, USA (45,46). A limitation of this study is that the current findings do not represent all continents. The authors did not find research results from Africa and South America that were included in the inclusion criteria for this study. This is important to develop because behavioral change is not instantaneous, including changes in smoking behavior. Initiation and continuation of research are needed to assess the effectiveness of media literacy on smoking behavior, especially among adolescents. With this initiation and continuation of research, it is hoped that appropriate media literacy interventions for changing smoking behavior will be formulated according to the sociodemographic and local wisdom of each region.

CONCLUSION

This study attempts to examine the results of media literacy measurements and interventions on smoking behavior in adolescents. The results showed that media literacy is considered effective in increasing adolescents' knowledge and awareness of how the media tries to persuade them to try smoking or continue smoking. Furthermore, with easy internet access and the emergence of new media, the concept of media literacy must continue to be socialized and its effectiveness tested to make adolescents more critical of media messages containing smoking.

The results of this study suggest, theoretically, the need to further develop the concept of media literacy to prevent risky behaviors, one of which is smoking, both conventional and e-cigarettes. This can be done practically by developing learning modules or curricula that introduce and discuss media literacy in schools, both at the junior high and senior high school levels. This can be integrated into various subjects, such as basic computer use or basic information and communication technology. Furthermore, the introduction of media literacy can also be integrated into extracurricular activities related to the use of media or information and communication technology.

Despite the results obtained, this study also has limitations. Research findings from the African and South American continents have not been found in the past five years. This indicates that there has been little initiation or continuation of media literacy research published in international databases. Suggestions for future research include researchers concerned with media studies or health communication to develop media literacy research tailored to local wisdom conditions. Furthermore, the application of media literacy to measure or intervene in other risky health behaviors, such as alcohol consumption, drug abuse, unhealthy eating habits, risky sexual behavior, and others, can be developed.

AUTHOR'S CONTRIBUTION STATEMENT

Danang Wahansa Sugiarto (DWS) was responsible for the study conception, design, analysis, drafting, writing, and revising the manuscript. Fajrin Violita (FR) was responsible for reviewing, writing, and revising the manuscript.

CONFLICTS OF INTEREST

The authors declare no potential conflicts of interests with respect to the study, authorship, and/or publication of this article.

DECLARATION OF GENERATIVE AI AND AI-ASSISTED TECHNOLOGIES IN THE WRITING PROCESS

The authors declare that this research does not use AI for substantial writing of all parts of the research. The authors use AI only to assist in checking grammar.

SOURCE OF FUNDING STATEMENTS

The authors did not receive financial support from any source for this research.

ACKNOWLEDGMENTS

The authors would like to thank the parties who are willing to be external reviewers to assess the validity and reliability of the findings of the scientific articles in this research.

BIBLIOGRAPHY

1. WHO. Tobacco; 2025. [Online] Available at: https://www.who.int/news-room/fact-sheets/detail/tobacco (Accessed on: July 2025).
2. WHO. Tobacco: E-Cigarettes; 2024. [Online] Available at: https://www.who.int/news-room/questions-and-answers/item/tobacco-e-cigarettes (Accessed on: July 2025).
3. Leonardi-Bee, J., Nderi, M., Britton, J. Smoking in movies and smoking initiation in adolescents: systematic review and meta-analysis. Addiction, 2016; 111(10): 1750-1763. DOI: 10.1111/add.13418.
4. Voorhees, CC., Ye, C., Carter-Pokras, O., MacPherson, L., Kanamori, M., Zhang, G., et al. Peers, Tobacco Advertising, and Secondhand Smoke Exposure Influences Smoking Initiation in Diverse Adolescents. American Journal of Health Promotion, 2011; 25(3): e1-e11. DOI: 10.4278/ajhp.090604-QUAN-180.
5. Stead, M., Angus, K., Langley, T., Katikireddi, SV., Hinds, K., Hilton, S., et al. Mass media to communicate public health messages in six health topic areas: a systematic review and other reviews of the evidence. Public Health Res, 2019; 7(8). DOI: 10.3310/phr07080.
6. Buckingham, D. Media Education: Literacy, Learning, and Contemporary Culture. Malden, MA: Blackwell Publishing; 2003.
7. Hoechsmann, M., Poyntz, SR. Media Literacies: A Critical Introduction. New Jersey: Blackwell Publishing; 2012.
8. Primack, BA., Gold, MA., Switzer, GE., Hobbs, R., Land, SR., Fine, MJ. Development and Validation of a Smoking Media Literacy Scale for Adolescents. Arch Pediatr Adolesc Med, 2006; 160(4): 369-374. DOI: 10.1001/archpedi.160.4.369.

9. Manganello, JA. Health literacy and adolescent: a framework and agenda for future research. Health Education Research, 2008; 23(5): 840-847. DOI: 10.1093/her/cym069.
10. PRISMA. PRISMA 2020 statement; 2024. Available at: https://www.prisma-statement.org/prisma-2020 (Accessed on: May 2025).
11. Braun, V., Clarke, V. Using thematic analysis in psychology. Qualitative Research in Psychology, 2006; 3(2): 77–101. DOI: 10.1191/1478088706qp063oa.
12. Heriyanto, H. Thematic Analysis sebagai Metode Menganalisa Data untuk Penelitian Kualitatif. ANUVA, 2018; 2(3): 317-324. DOI: 10.14710/anuva.2.3.317-324.
13. DATAtab. Cohen's Kappa; 2025. Available at: https://datatab.net/tutorial/cohens-kappa (Accessed on: June 2025).
14. Park, S., Lee, H. School-Based Intervention of Smoking Media Literacy Among South Korean Adolescents: A Cluster Randomized Trial. Asian Nursing Research, 2025; 3: 1-29. DOI: 10.1016/j.anr.2025.03.001.
15. Kim, S. Using Intervention Mapping to Develop a Media Literacy-Based Smoking Prevention Program for Female Adolescents. Int. J. Environ. Res. Public Health, 2021; 18: 6305. DOI: 10.3390/ijerph18126305.
16. Dai, HD., Kerns, E., Niebur, H., Deschamp, A., Johnson, R., Samson, K., et al. Developing a media literacy-based e-cigarette education program via medical record systems. Tob. Prev. Cessation, 2025; 11(April): 22. DOI: 10.18332/tpc/201477.
17. Lazea, C., Popa, A., Varga, C. Association between Internet Use Behavior and Palpitation among Adolescents: A Cross-Sectional Study of Middle School Children from Northwest Romania. Int. J. Environ. Res. Public Health, 2020; 17: 4278. DOI: 10.3390/ijerph17124278.
18. Sadza, A., Daalmans, S., Rozendaal, E., Bujizen, M. Mediated risks through rose-tinted glasses? Exploring barriers and boosters to critical deconstructions of mediated risk behavior by Dutch adolescents. Journal of Communication, 2024; 74: 374-386. DOI: 10.1093/joc/jqae025.
19. Michaud, T., Puga, T., Archer, R., Theye, E., Zagurski, C., Estabrooks, P., et al. Enhancing Text Message Support with Media Literacy and Financial Incentives for Vaping Cessation in Young Adults: Protocol for a Pilot Randomized Controlled Trial. JMIR Res Protoc, 2025; 14: e60527. DOI: 10.2196/60527.
20. Zahrai, K., Veer, E., Ballantine, PW., de Vries, HP., Prayag, G. Either you control social media or social media controls you: Understanding the impact of self-control on excessive social media use from the dual-system perspective. J Consum Aff, 2022; 56: 806–848. DOI: 10.1111/joca.12449.
21. Canadian Paediatric Society. Impact of media use on children and youth. Paediatr Child Health, 2003; 8(5): 301-306. DOI: 10.1093/pch/8.5.301.
22. Rideout, VJ., Foehr, UG., Roberts, DF. Generation M2: Media in the Lives of 8- to 18-Year-Olds; A Kaiser Family Foundation Study, January 2010. California: Kaiser Family Foundation; 2010.
23. American College of Pediatricians. Media Use and Screen Time – Its Impact on Children, Adolescents, and Families; 2020. [Online] Available at: https://acpeds.org/media-use-and-screen-time-its-impact-on-children-adolescents-and-families/ (Accessed on: August 2025).
24. Perera, A. Cultivation Theory in Media; 2023. [Online] Available at: https://www.simplypsychology.org/cultivation-theory.html (Accessed on: July 2025).
25. DiFranza, JR., Wellman, RJ., Sargent, JD., Weitzman, M. Hipple, BJ., Winickoff, JP., et al. Tobacco promotion and the initiation of tobacco use: assessing the evidence for causality. Pediatrics, 2006; 117: 1237-1248. DOI: 10.1542/peds.2005-1817.
26. U.S. Department of Health and Human Services. Preventing Tobacco Use Among Youth and Young Adults: A Report of The Surgeon General. Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health; 2012.
27. Geraee, N., Kaveh, MH., Shojaeizadeh, D. Tabatabaee, HR. Impact of media literacy education on knowledge and behavioral intention of adolescents in dealing with media messages according to Stages of Change. J Adv Med Educ Prof, 2015; 3(1): 9-14.

28. Montazeri, L., Eslami, H., Afshani, SA. Role of Students' Media Literacy on Their Health: A Narrative Review. Role of Students' Media Literacy on Their Health: A Narrative Review. Journal of Community Health Research, 2022; 11(1): 45-53. DOI: 10.18502/jchr.v11i1.9095.
29. Nurjanah, N., Sugihantono, A., Widjanarko, B., Handayani, N., Musthofa, SB., Puspitaningtyas, SI., et al. TAPS Ban and Media Literacy to Protect Youth from Tobacco Industry Inducement. Jurnal Promkes: The Indonesian Journal of Health Promotion and Health Education, 2025; 13(SI 2): 135-142. DOI: 10.20473/jpk.V13.ISI2.2025.135-142.
30. World Health Organization. Global Youth Tobacco Survey 2019 Factsheets; 2020. [Online] Available at: https://cdn.who.int/media/docs/default-source/searo/tobacco/global-youth-tobacco-survey/gyts-indonesia-extended-factsheet.pdf?sfvrsn=d202f34f_3 (Accessed on: August 2025).
31. World Health Organization. World No Tobacco Day 2025: WHO hails Indonesia's bold reforms, calls for decisive action on standardized packaging; 2025. [Online] Available at: https://www.who.int/indonesia/news/detail/30-05-2025-world-no-tobacco-day-2025--who-hails-indonesia-s-bold-reforms--calls-for-decisive-action-on-standardized-packaging#:~:text=Key%20provisions%20include%20raising%20the,and%20additives%2C%20and%20banning%20tobacco (Accessed on: August 2025).
32. Australian Government, Department of Health, Disability, and Ageing. New legislation for tobacco and other products; 2023. [Online] Available at: https://www.health.gov.au/topics/smoking-vaping-and-tobacco/tobacco-control/new-legislation#:~:text=Control%20(FCTC).-,Key%20elements%20of%20the%20new%20laws,within%20the%20Australian%20Border%20Force (Accessed on: August 2025).
33. Lange, T., Hoefges, M., Ribisl, KM. Regulating Tobacco Product Advertising and Promotions in the Retail Environment: A Roadmap for States and Localities. J Law Med Ethics, 2015; 43(4): 878–896. DOI: 10.1111/jlme.12326.
34. Pradnyana, PY., Ekaputra, IWGA. Effectiveness of Television Cigarette Advertising Regulation Based on Minister of Health Regulation No. 56/2017 Concerning the Inclusion of Health Warnings and Health Information on Tobacco Product Packaging. JLPH: Journal of Law, Politics, and Humanities, 2025; 5(4): 2413-2420. DOI: 10.38035/jlph.v5i4.1515.
35. Bier, MC., Schmidt, SJ., Shields, D., Zwarun L., Sherblom, S., Primack, B., et al. School-based smoking prevention with media literacy: A pilot study. Journal of Media Literacy Education, 2010; 2(3): 185–198. DOI: 10.23860/jmle-2-3-1.
36. Primack, BA., Gold, MA., Land, SR., Fine, MJ. Association of Cigarette Smoking and Media Literacy about Smoking among Adolescents. J Adolesc Health, 2006; 39(4): 465–472. DOI: 10.1016/j.jadohealth.2006.05.011.
37. Primack, BA., Hobbs, R. Association of various components of media literacy and adolescent smoking. Am J Health Behav, 2009; 33(2):192–201. DOI: 10.5993/ajhb.33.2.8.
38. Salgado, MV., Perez-Stable, EJ., Primack, BA., Kaplan, CP., Meija, RM., Gregorich, SE., et al. Association of media literacy with cigarette smoking among youth in Jujuy, Argentina. Nicotine Tob Res, 2011; 14(5): 516–521. DOI: 10.1093/ntr/ntr240.
39. Page, RM., Huong, NT., Chi, HK., Tien, TQ. Smoking media literacy in Vietnamese adolescents. J Sch Health, 2011; 81(1): 34–41. DOI: 10.1111/j.1746-1561.2010.00555.x.
40. Page, RM., Piko, BF., Balazs, MA., Struk T. Media literacy and cigarette smoking in Hungarian adolescents. Health Education Journal, 2010; 70(4): 446–457. DOI: 10.1177/0017896910379692.
41. Sugiarto, DW., Ayubi, D., Martha, E. Hubungan smoking media literacy dengan status merokok siswa menengah atas. Perilaku dan Promosi Kesehatan: Indonesian Journal of Health Promotion and Behavior, 2020; 2(1): 18-28. DOI: 10.47034/ppk.v2i1.3973.
42. Bier, MC., Zwarun, L., Sherblom, SA. Evidence of the Value of the Smoking Media Literacy for Middle School Students. J Sch Health, 2016; 86(10): 717-725. DOI: 10.1111/josh.12425.
43. Primack, BA., Sidani, J., Carroll, MV., Fine, MJ. Associations between Smoking and Media Literacy in College Students. J Health Commun, 2009; 14(6): 541–555. DOI: 10.1080/10810730903089598.

44. Aienobe-Asekharen, C., Norris, E., Martin, W. A Scoping Review of Tobacco Control Health Communication in Africa: Towards Involving Young People. Int J Environ Res Public Health, 2024; 21(3): 259. DOI: 10.3390/ijerph21030259.
45. Canada's Center for Digital Media Literacy. USE, UNDERSTAND & ENGAGE: A Digital Media Literacy Framework for Canadian Schools – Overview; n.d. [Online] Available at: https://mediasmarts.ca/teacher-resources/digital-literacy-framework/digital-literacy-framework-overview (Accessed on: August 2025).
46. California Department of Education. Media Literacy Resources; n.d. [Online] Available at: https://www.cde.ca.gov/wafalert.html?_event_transid=05a45cc7530138b7236e1f018e8ae27aed54a61b6b4de5ddb5b4079bcb8003d6 (Accessed on: August 2025).