

Development and Validation of MyQUITVAPE: A Health Education Video for Quitting Vaping among University Students

Ching Sin Siau^{1*}, Lei Hum Wee^{1,2*}, Caryn Mei Hsien Chan¹, Rawaida Mat Salleh¹,
Picholas Kian Ann Phoa², Muhamad Nur Fariduddin³, Subashini Ambigapathy⁴, Zaini Said¹, Nizam
Baharom⁵

¹Centre for Community Health Studies, Universiti Kebangsaan Malaysia,
50300 Kuala Lumpur, Malaysia
Chingsin.siau@ukm.edu.my
caryn@ukm.edu.my
p111742@siswa.ukm.edu.my

²Faculty of Medicine and Health Sciences, Taylor's University,
Taylor's Lakeside, 47100 Subang Jaya, Selangor, Malaysia
LeiHum.We@taylors.edu.my
0371042@sd.taylors.edu.my

³Faculty of Education, Universiti Teknologi MARA,
UiTM Puncak Alam Campus, 42300 Bandar Puncak Alam, Selangor, Malaysia
Fariduddin@uitm.edu.my

⁴Klinik Kesihatan Buntong, Kementerian Kesihatan Malaysia,
30100, Ipoh, Perak, Malaysia
subaambigapathy@gmail.com

⁵Department of Primary Care, Faculty of Medicine, Universiti Sains Islam Malaysia,
Putra Nilai, 71800, Nilai, Negeri Sembilan, Malaysia
drnizamb@usim.edu.my

*Corresponding Author

<https://doi.org/10.24191/ajue.v21i1.5446>

Received: 4 December 2024

Accepted: 1 February 2025

Date Published Online: 5 March 2025

Published: 5 March 2025

Abstract: The use of e-cigarettes (EC), also known as vapes, has been rising among young adults. Past studies showed a high rate of adverse events following the use of vape. However, harm perception of vape use was low. Considering this situation, there is a need for a health education programme to increase the motivation to stop vaping for university students in Malaysia. Hence, this study aimed to develop a health education programme comprising a series of short videos to educate university students on vaping harms and to increase their motivation to quit vaping. Based on prior evidence obtained from a mixed-methods study, and review of literature, Evaluation was done by 11 experts in the field. The Content Validity Index was found to be acceptable, at 0.95. The written module was copyrighted on 30 November 2023 (Notification no.: CRLY2023W05981). After that, a professional content creator was employed to create four short videos based on the script provided in the module. The video modules were created based on the script in the MyQUITVAPE module scripts. The names of the short videos were tailored to reflect their content, which focused on understanding what is vaping, the harmful effects of nicotine addiction via vaping on health, reasons for quitting vape and how to increase the motivation to do so, and sharing some skills on how to quit vaping and maintaining abstinence from vaping. Future dissemination plans of the short video will be conducted through various platforms.

Keywords: E-cigarette, Malaysia, MyQUITVAPE, Vaping, Young Adults

1. Introduction

Young individuals have begun using e-cigarettes (EC), also referred to as vapes, at an increasing rate. The percentage of 21–24-year-olds in the US who currently use EC went from 13.5% to 14.5% between 2018 and 2020, while the percentage who use it daily increased from 4.4% to 6.6% (Boakye et al., 2022). According to a 2018 Chinese survey, the highest rates of ever, past 12-month, and present EC usage were seen among those aged 15 to 24 (Xiao et al., 2022). The percentage of EC ever users in Malaysia increased dramatically, increasing from 11.9% in 2016 to 33.7% in 2020 (Driezen et al., 2022; Ab Rahman et al., 2019). According to the 2019 National Health and Morbidity Survey (NHMS), the number of EC users has doubled, from 600,000 to 1.2 million, with the highest prevalence (14.7%) among 20- to 24-year-olds (Institute for Public Health, 2020). At 5% of adult Malaysians in NHMS 2023, the prevalence of EC usage is still high (Institute for Public Health, 2024a). According to the most recent Global Adult Tobacco Survey (GATS) 2023, vaping was also most common among those aged 15 to 24 (8.6%), followed by those aged 25 to 44 (7.1%) (Institute for Public Health, 2024b).

Previous research indicated that a large percentage of negative outcomes occurred after vaping. According to a study conducted on 4,695 vapers, 78.9% of them had negative side effects such as headaches, coughing, and anxiety (Cuomo et al., 2024). Device malfunction or explosion, respiratory injury, including e-vaping acute lung injury (EVALI), poisonings, allergic reactions, complications in infants, and events involving cardiovascular, oral, immunologic, and hematologic reactions were the main causes of vaping-related illness and injury, according to a systematic review (Tzortzi et al., 2020). However, harm perception of vape among vapers was low (Kurdi et al., 2021), and this problem is made worse by a low motivation to quit among vapers (Mat Salleh et al., 2023).

Numerous strategies have been developed to aid in vaping cessation or to increase the desire to do so (Kundu et al., 2023). The majority of vaping cessation programs employed behavioral and pharmaceutical modalities and targeted young people (Kundu et al., 2023). These interventions, however, are scarce in Asia and Southeast Asia. Given this circumstance, youth-friendly interventions for university students are desperately needed to boost motivation and intention to stop vaping. In order to control and lower the rate of nicotine addiction from vaping, the authors believe that a health education programme is necessary to enhance the motivation of young people in Malaysia to quit vaping. Young people should be able to access this program and find it appealing when it is offered to them. Short videos were suggested as an appropriate health communication medium for young adults based on a previous study (McCashin & Murphy, 2023). A study has also shown that health education videos are increasing in popularity, especially vaping-warning videos (Xie et al., 2021). Hence, this study aimed to develop and validate a health education programme which comprise a series of four short videos with the objective of educating young adults, especially university students, on the harms of vaping and to increase motivation to quit vaping.

2. Method

2.1 Content Development Process

This module was built based on Phase I of the Sidek Model of Module Development (Noah & Ahmad, 2005). The authors first determined the aim of the module, which was building a series of short videos to increase motivation to quit vaping. The theory that guided the development of the video was the Theory of Planned Behaviour (Ajzen & Fishbein, 1991). According to this model, an individual's intention to change their behaviour is dependent on changing their attitudes, subjective norms, and perceived behavioural control. In this case, the video series is aimed to change the motivation to quit vaping by changing attitudes about vaping through provision of knowledge on the harms of vaping and how it affects health. In addition, vaping is denormalised through modelling by the actors in the video about the harms of vaping and encouragement to quit vaping. Perceived behavioural control is increased through providing skills on how to quit vaping.

The researchers also performed a needs analysis through a review of past studies, and by conducting a mixed-methods study which investigated the attitudes and motivations of young adult vapers in Malaysia. The quantitative survey ($n = 351$) and in-depth qualitative interviews ($n = 15$) found mainly that a large majority of Malaysian young adult vapers (92.6%) had low motivation to quit vaping. The qualitative study showed that there were many misconceptions about vaping, such as vaping helps to quit cigarette smoking and vaping is not harmful to health.

Based on the theoretical and empirical information, the goal and content of the proposed intervention was written in a video script, which was named Video Intervention Module to Increase Motivation to Quit Vape for Young Adult Users in Malaysia (My-QUITVAPE). Four videos were planned in this script, which were (1) Introduction to vaping and the MyQUITVAPE Programme; (2) Nicotine addiction and effects on health; (3) Importance of quitting and motivation to quit vaping; and (4) Tips on skills to stop vaping and being vape-free.

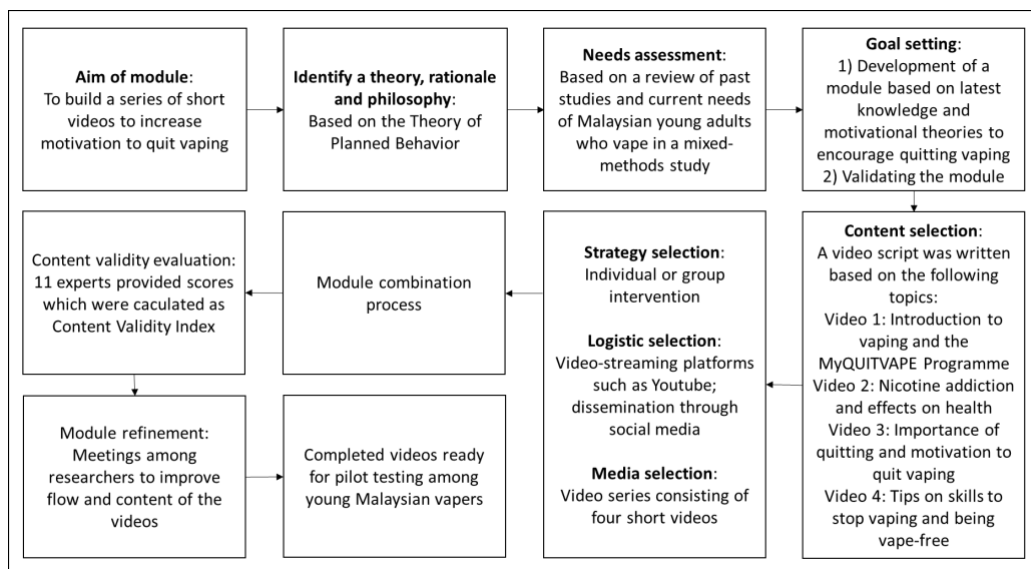
In terms of strategy, logistic and media selection, the videos could be watched individually or in a group training setting, depending on the target audience. For example, this video can be streamed in university classes and shared on WhatsApp or other social media platforms to university students to be watched in their free time. The video could also be streamed in popular areas in the university campus such as in the cafeteria or common areas.

Once these decisions were made, components of the module were integrated, and the video script was sent out to 11 experts in the field for evaluation. When the content of the video script was deemed to be adequate, the video was built by a content developer based on the script, and further refinements were done to the video through meetings involving the researchers. Finally, the videos were ready for further testing among participants in Phase II.

The following figure depicts the development of the module described above, Phase I (see Figure 1).

Figure 1

Phase I of MyQUITVAPE Module Development



2.2 Content Validity Evaluation

Evaluation of module content validity is done through the use of a module content validity questionnaire, where evaluators were asked to respond using a five-point Likert scale, namely: (1) strongly disagree, (2) disagree, (3) not sure, (4) agree, and (5) strongly agree. The experts answered questions on the module's (1) consistency with the needs of the target group; (2) potential to be carried

out effectively; (3) suitability to be carried out within the set time frame; (4) ability to increase motivation to quit vaping; and (5) increase knowledge about the dangers of vaping. Data analysis was done by applying the module content validity calculation method proposed by Tuckman and Waheed (1981), as follows:

$$\text{Content Validity Index} = \text{Total score of each expert} / \text{Total possible score}$$

A value reaching 0.70 is considered as acceptable module content.

Experts who evaluated the content of the video scripts had to fulfil the inclusion criteria, which were (1) Having at least a Masters degree in the field of study; (2) Being in the field of substance use, behavioral health, psychology, public health, or family medicine; and (3) Having at least 2 years of experience in the field.

3. Results

3.1 Content validity of the video scripts

Evaluation was done by 11 experts in the field. Information on the content experts are reflected in Table 1.

Table 1

Characteristics of the content validity experts

ID	Occupation	Age Range	Years of Service (Years)	Field of Expertise	Highest Education	Nature of involvement in the field of vaping
P1	Lecturer	50-54	17	Counseling Psychology	PhD	Research
P2	Clinician	30-34	6	Clinical Psychology	PhD	Service provision
P3	Post-Doctoral	35-40	2	Public Health	PhD	Research
P4	Research Coordinator	35-40	7	Health Education, Medical Simulation	PhD	Academic, Research
P5	Lecturer	46-50	14	Substance Abuse	PhD	Research
P6	Clinician	25-30	3	Clinical Psychology, Substance Abuse	Masters	Research, service provision
P7	Family Medicine Specialist	35-40	10	Family Medicine	MBBS, Masters	Academic
P8	Lecturer	30-34	3	Social Psychology	PhD	Research
P9	Lecturer	45-50	7	Counseling Psychology	PhD	Academic, Research
P10	Family Medicine Specialist	30-34	10	Addiction	MBBS, Masters	Academic, policy, service provision, advocacy
P11	Researcher	30-34	14	Poison control	Masters	Research

Results of the content evaluation is depicted in Table 2 (see Table 2):

Table 2

Content validity of the MyQUITVAPE video scripts

The content of the module	Expert Identification Number											CVI per item
	1	2	3	4	5	6	7	8	9	10	11	
Is suitable for the population	5	5	5	4	4	5	5	4	5	4	5	0.93
Can be carried out effectively	4	5	5	4	5	5	5	5	4	5	5	0.95
Can be carried out within the timeframe provided	4	5	5	4	4	5	5	4	5	5	5	0.93
Increases motivation to quit vaping	5	5	3	5	5	5	5	5	5	5	5	0.96
Increase knowledge on the dangers of vaping	5	5	4	5	5	5	5	5	5	5	5	0.98
Content validity index (CVI)												0.95

Based on the table above, it is seen that the scores provided by the experts ranged between 3 to 5. The highest CVI per item was for item 5, that the video module could increase knowledge on the dangers of vaping, while the lowest CVI per item value was 0.93, where the module was deemed to be suitable for the population. The CVI for the scores provided by the 11 experts was 0.95, which shows the video scripts had acceptable content validity.

3.2 Video content

The written module was copyrighted on 30 November 2023 (Notification no.: CRLY2023W05981). After that, a professional content creator was employed to create four short videos based on the script provided in the module. Table 3 provides the title, link and duration of each video (see Table 3).

Table 3

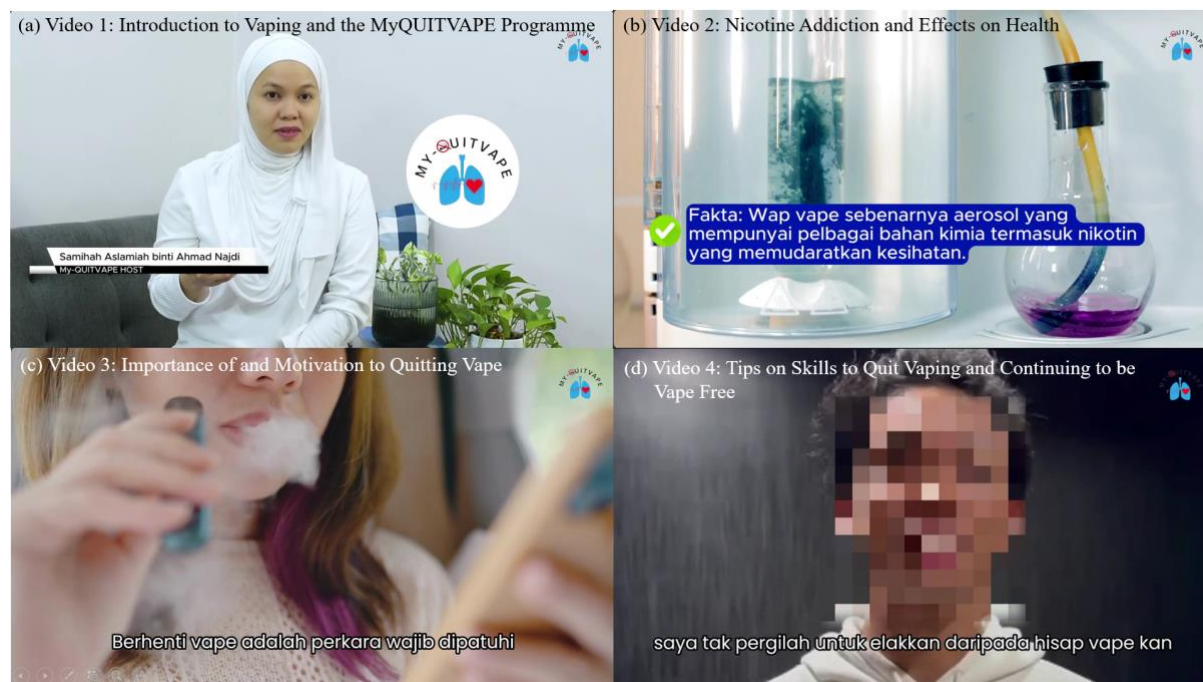
Title, link and duration of videos in the MyQUITVAPE health education programme

Title and Link	Duration
Introduction to Vaping and the MyQUITVAPE Programme https://youtu.be/owfOaa-WCFo	4 min 54 s
Nicotine Addiction and Effects on Health https://youtu.be/8gVcT4_s8YE	5 min 03 s
Importance of and Motivation to Quitting Vape https://youtu.be/O3wDL2PtEhs	3 min 54 s
Tips on Skills to Quit Vaping and Continuing to be Vape Free https://youtu.be/iWE7Q8XbZz4	4 min 49 s

The brief videos' titles were chosen to match their content, which included information on what vaping is, the negative health effects of nicotine addiction from vaping, reasons to stop vaping and how to boost motivation to do so, and tips for quitting and staying abstinent from vaping.. Each video duration ranged from 3 min 54 s to 5 min 03 s. Figure 2 provides examples of the video stills from each short video (refer to Figure 2).

Figure 2

Phase I of MyQUITVAPE Module Development



In the first video, “Introduction to Vaping and the MyQUITVAPE Programme”, viewers are first introduced to the MyQUITVAPE programme, consisting of the four short videos they were about to watch. Viewers were then exposed to the definition of an e-cigarette, and types of ECs and e-liquids that have been available in the marketplace, including cigalikes, pods, and mods. The content of e-liquids and their effects on the body are then elaborated on. The latter includes the toxic effects of ECs on the lungs, leading to nicotine addiction and vaping-use-associated lung injury (EVALI).

In the second video, “Nicotine Addiction and Effects on Health”, viewers are introduced to the side effects of nicotine addiction through ECs such as headache, restlessness, inability to focus, vomiting and nausea, sleep problems, irritability, excessive sweating, and depressive mood. Situations in which nicotine dependence becomes apparent are after a meal, during stressful situations, loneliness, and when hanging out with friends who vape. Myths and facts about vaping are then presented, such as the myth that vaping is less addictive and hazardous to lung health compared to tobacco cigarettes, when in reality they are both addictive and unhealthy, especially since vaping products have many chemical compounds that are unknown and unregulated. Vaping may also be perceived to help the user to relax, when in fact it may increase depressive and anxious moods in the long run.

The third video in the video series focuses on understanding the importance of EC cessation, and to increase the motivation to quit ECs. Viewers are introduced to the existing Quit Smoking Clinics throughout Malaysia which they can visit, or the Quitline which they could call to seek advice about quitting. These services are prepared by the Ministry of Health in Malaysia. Next, viewers are encouraged to reflect on the reasons they may want to quit vaping, such as for a better physical and mental health, to save money, and to stop the nicotine addiction. Next, three resolutions which potential quitters must have are being clear about their intention to quit, becoming strong in withstanding

withdrawal symptoms, and finding meaning in quitting vaping. Muslim viewers are also informed that vaping has been banned by the National Fatwa Council and is considered “haram” (forbidden) in Islam. Further encouragement to quit is given by exposing the viewers to benefits of quitting, such as breathing better, normalizing blood pressure, lessen the risks of stroke or heart attack, protecting the family from second-hand vape chemicals, looking better, and increasing quality of life. Finally, for those who had tried to quit and failed, they are encouraged not to give up, as it takes many attempts before an individual successfully quits.

The final video in the MyQUITVAPE series, “Tips on Skills to Quit Vaping and Continuing to be Vape Free”, has the objectives of introducing the 12M method of quitting, understanding relapse and challenges to maintaining their quit status, and how to remain vape-free. The 12M skills, which are used to quit smoking, are adapted for use in vaping cessation. Viewers are advised to delay vaping when they feel the urge, practicing deep breathing, drinking plain water, making oneself busy, staying away from other vapers and situations which reminds them of vaping, chewing on gum or food, washing hands and taking a shower, exercising, stretching especially when feeling sleepy, meditate and seeking religious/spiritual help. The video ended with a segment on lived experience sharing by ex-vapers recounting their own struggles in quitting vape and the methods they have employed to do so. All four video-series concluded with the exhortation “*Jom quit vape*”, or “Let’s quit vaping”, followed by end credits. In the final video, viewers were provided a QR code to scan to provide their feedback on the videos.

4. Conclusion

The video module called MyQUITVAPE was developed based on the Sidek Module Development procedures. Based on the needs identified in the prior mixed methods study, a four-series video script was written and validated by experts in the field. Content Validity Index was satisfactory, at 0.95. Subsequently, the video script was copyrighted and the video was produced. This video has implications in providing an evidence-based health education module for usage by university students. Through the lens of the Theory of Planned Behaviour, university students who watch these videos may decide to quit vaping through changing their attitudes about vaping, from initially perceiving that vaping is safe to understanding the hazards of vaping on their mental and physical health. Subjective norms about vaping, such as it being associated with delinquent behaviours, may further encourage the students to quit vaping to confirm a healthier lifestyle. Next, advice provided on skills to quit vaping, along with sharing resources such as the Quit Smoking Clinic and the Quitline, may increase perceived behavioural control so that the students could conceive an actionable plan to quit vaping. The video series are also easy to access. University students could view the video as a class activity or view them on their own devices. Being able to replay the videos also enhances retention of knowledge and may increase a positive attitude towards quitting ECs.

5. Suggestions

This video module needs to be further tested using Phase II of the Sidek Module Development Model, in which young vapers, including university students, could be pilot participants in testing the effectiveness of the module in increasing their motivation to quit vaping. Dissemination of the video will be conducted through various stakeholders, such as universities and the Ministry of Health, once the MyQUITVAPE Programme has been shown to be effective. Our preliminary findings indicate much promise in this direction.

6. Co-Author Contribution

The authors affirmed that there is no conflict of interest in this article. Author 1, Author 2, Author 3, Author 4 and Author 8 carried out the field work, prepared the literature review and overlooked the writeup of the whole article. Author 2 wrote the research methodology and did the data entry. Author 2 carried out the statistical analysis and interpretation of the results. Author 5, Author 6, and Author 7 edited the manuscript for critical content.

7. Acknowledgements

This study was funded by the Ministry of Higher Education, Malaysia through the Fundamental Research Grant Scheme (FRGS Grant Number: FRGS/1/2020/SKK06/UKM/02/8).

8. References

- Ab Rahman, J., Mohd Yusoff, M. F., Nik Mohamed, M. H., Mahadir Naidu, B., Lim, K. H., Tee, G. H., Mohamad, M. S., Kartiwi, M., Draman, S., Ab Rahman, N. S., & Aris, T. (2019). The prevalence of e-cigarette use among adults in Malaysia. *Asia Pacific Journal of Public Health*, 31(7_suppl), 9S-21S. <https://doi.org/10.1177/1010539519834735>
- Ajzen, I. (1991). The theory of planned behavior. *Organizational behavior and human decision processes*, 50(2), 179-211.
- Boakye, E., Osuji, N., Erhabor, J., Obisesan, O., Osei, A. D., Mirbolouk, M., Stikes, A. C., Dzaye, O., Shahawy, O. E., Hirsch, G. A., Benjamin, E. J., DeFilippis, A. P., Robertson, R. M., Bhatnagar, A., & Blaha, M. J. (2022). Assessment of patterns in e-cigarette use among adults in the US, 2017-2020. *JAMA Network Open*, 5(7), e2223266-e2223266. <https://doi.org/10.1001/jamanetworkopen.2022.23266>
- Cuomo, R. E., Purushothaman, V. L., Mackey, T. K., & Yang, J. W. (2024). Rates of adverse events and related risk factors following e-cigarette use. *Journal of Public Health*, 46(2), e230 - 9. <https://doi.org/10.1093/pubmed/fdad281>
- Driezen, P., Nordin, A. S. A., Hairi, F. M., Yee, A., Tajuddin, N. A. A., Hasan, S. I., Danaee, M., Kamaludin, I. S., Kaai, S. C., Yan, M., Grey, M., Quah, A. C. K., Thompson, M. E., & Fong, G. T. (2022). E-cigarette prevalence among Malaysian adults and types and flavors of e-cigarette products used by cigarette smokers who vape: Findings from the 2020 ITC Malaysia Survey. *Tobacco Induced Diseases*, 20, 32. <https://doi.org/10.18332/tid/146363>
- Kundu, A., Kouzoukas, E., Zawertailo, L., Fougere, C., Dragonetti, R., Selby, P., & Schwartz, R. (2023). Scoping review of guidance on cessation interventions for electronic cigarettes and dual electronic and combustible cigarettes use. *Canadian Medical Association Open Access Journal*, 11(2), E336-E344.
- Kurdi, R., Al-Jayyousi, G. F., Yaseen, M., Ali, A., Mosleh, N., & Abdul Rahim, H. F. (2021). Prevalence, risk factors, harm perception, and attitudes toward e-cigarette use among university students in Qatar: a cross-sectional study. *Frontiers in Public Health*, 9, 682355. <https://doi.org/10.3389/fpubh.2021.682355>
- Institute for Public Health. (2020). Key Findings: National Health and Morbidity Survey (NHMS) 2019. Retrieved from <https://iku.nih.gov.my/images/IKU/Document/REPORT/NHMS2019/NHMS2019Infographic.pdf>
- Institute for Public Health. (2024a). Fact Sheet: National Health and Morbidity Survey (NHMS) 2023. Retrieved from <https://iku.nih.gov.my/images/nhms2023/fact-sheet-nhms-2023.pdf>.
- Institute for Public Health. (2024b). Global Adult Tobacco Survey (GATS) – Key Findings. Retrieved from <https://iku.nih.gov.my/images/gats2023/gats-key-findings-booklet.pdf>
- Mat Salleh, R., Baharom, N., Siau, C., Chan, C., Amit, N., Sia, P., & Wee, L. (2023). E-Cigarette Users' Profiles and Their Association with Identified Impacts of COVID-19 on Vaping among Young Adults in Malaysia. *Healthcare (Basel, Switzerland)*, 11(3). <https://doi.org/10.3390/healthcare11030434>
- McCashin, D., & Murphy, C. M. (2023). Using TikTok for public and youth mental health—A systematic review and content analysis. *Clinical Child Psychology and Psychiatry*, 28(1), 279-306. <https://doi.org/10.1177/13591045221106608>
- Sidek Mohd Noah & Jamaluddin Ahmad. (2005). *Pembinaan Modul: Bagaimana membina modul latihan dan modul akademik*. Serdang, Selangor: Penerbit Universiti Putra Malaysia.
- Tuckman, B. W., & Waheed, M. A. (1981). Evaluating an individualized science program for community college students. *Journal of research in science teaching*, 18(6), 489-495.

- Tzortzi, A., Kapetanstrataki, M., Evangelopoulou, V., & Behrakis, P. (2020). A systematic literature review of e-cigarette-related illness and injury: not just for the respirologist. *International Journal of Environmental Research and Public Health*, 17(7), 2248. <https://doi.org/10.3390/ijerph17072248>
- Xiao, L., Parascandola, M., Wang, C., & Jiang, Y. (2019). Perception and current use of e-cigarettes among youth in China. *Nicotine and Tobacco Research*, 21(10), 1401-1407. <https://doi.org/10.1093/ntr/nty145>
- Xie, Z., Wang, X., Gu, Y., & Li, D. (2021). Exploratory Analysis of Electronic Cigarette-Related Videos on YouTube: Observational Study. *Interactive Journal of Medical Research*, 10(3), e27302.