

RELATIONSHIP BETWEEN FACTORS AFFECTING THE INITIATION OF CIGARETTE SMOKING AMONG BOYS IN A SECONDARY SCHOOL IN SHAH ALAM

Siti Natasha Amira Abdul Kha'ar¹
Ahmad Fahim Zulkifli^{2*}
Azmeer Ahmad³

¹Faculty of Education, Universiti Teknologi MARA (UiTM), Malaysia
(email: 2020991887@student.uitm.edu.my)

²Faculty of Education, Universiti Teknologi MARA (UiTM), Malaysia
(email: fahimzulkifli@uitm.edu.my)

³SMK Seksyen 7, Shah Alam Selangor, Malaysia
(email: g-05219563@moe-dl.edu.my)

Article history

Received date : 13-3-2025

Revised date : 14-3-2025

Accepted date : 27-4-2025

Published date : 15-5-2025

To cite this document:

Abdul Kha'ar., S. N. A., Zulfikri., A., F. & Ahmad., A. (2025). Relationship between factors affecting the initiation of cigarette smoking among boys in a secondary school in Shah Alam. *Journal of Islamic, Social, Economics and Development (JISED)*, 10 (72), 286- 297.

Abstract: *Lifetime health behaviour usually forms during the teenage phase and marks a critical growth period. It is a crucial stage in developing healthy behavior such as cigarette smoking cigarettes. Good or bad habits that develop during youth are often carried over into adulthood. Therefore, this research aims to study the relationship between factors that influence the initiation of cigarette smoking and the smoking status among male students. The study was administered by an online survey using the Google Forms platform and was distributed to male students aged 16 and 17. Through purposive sampling, 182 out of 196 responded to the online survey. The majority of respondents in this study do not have family members and friends who smoke. In addition, most respondents do not like watching cigarette advertisements and, on average, will not smoke in the future. Next, this reveals that the smoking factor does not influence the respondent to become a smoker. At the same time, more than 80% of respondents believe that cigarette smoke is harmful to non-smokers. The results of the Pearson Correlation Coefficient Analysis show that the factors affecting the initiation of cigarette smoking and smoking status have a moderate relationship. Thus, the study results reveal there is no significant relationship between the factors influencing the initiation of cigarette smoking and the smoking status among boys aged 16 and 17. Therefore, there is a need for future studies to aim to cover all states in Malaysia to compile and obtain more extensive national data.*

Keywords: *Boys, Cigarette, School, Smoking, Teenagers*

Introduction

Good or bad habits developed during youth are often carried over into adulthood. According to some research, smoking behaviour is learned and begins throughout the teenage years. A similar trend has been observed in Malaysia, where more than 80% of adult smokers started smoking before age 21. Additionally, smoking cigarettes has emerged as one of the 21st century's most important public health issues. High school students, particularly boys, are also affected by this issue, and smoking teenagers are more likely to become smokers as adults. The enormous increase in teenagers who smoke reflects the rapid growth in adult smokers. As teens grow into adults, they encounter several health issues connected with an unhealthy lifestyle at a younger age. Records reveal that smoking was prevalent among teenagers in Malaysia in 2017. In 2017, 12.8 percent of Form 1 students admitted to smoking in their first year of secondary school, and around 13. The highest smoking frequency was reported among Form 4 respondents, those in their second-to-last year of secondary school and around the age of 16, with 15.3 percent confessing to being smokers (Hirschmann, 2021). These numbers are a concern because the number of teenagers who begin smoking at a younger age is increasing. It is critical to investigate the variables that lead to smoking initiation. A smoking ban is also necessary to reduce the bad health effects of second-hand cigarette smoke and to de-emphasise the smoking habit (Jetly et al., 2021).

Literature Review

Smoking Status Among Secondary School

The habit of smoking can be the cause of the beginning of other bad habits, especially drugs and alcohol. Students who are struggling with social issues tend to try other unethical things in an attempt to find an easy way out. Because it's simple to do and there are plenty of cigarettes and e-cigarettes available, smoking usually ends up being the preferred activity. Adolescents who are younger than eighteen ought to focus more on their future than on harmful habits like smoking, and teens who smoke may become involved in other unethical behaviours, including drug addiction, theft, skipping class, and more, which could cause problems for other people. The increase in the number of teenagers who smoke will pose a threat to the country (Bahroini, 2014), where data from the National Morbidity and Mortality Survey shows that teenagers between the ages of 13 to 15 years smoke 19.9%, with a percentage of 35.5% boys and 4.3% girls.

Factors of the Initiation of Cigarette Smoking

Teenagers can easily get smuggled cigarettes, which are much cheaper than cigarettes on the market. Most of them obtain illegal cigarettes from over-the-counter sources from supermarkets, grocery stores and roadside stalls primarily due to lack of enforcement (Kavita et al., 2021). Contraband or smuggled cigarettes are the cause of the initiation of smoking among teenagers (Tarmizi, 2020). The Consumers Association of Penang (CAP) survey on the increase in teen smoking is valid. RTBA Malaysia states that the main contributing factor to this problem is the existence of cheap contraband cigarettes that can easily be found anywhere in Malaysia and bought by anyone. Teenagers are stuck in a smoking addiction due to the influence and invitation from friends at the beginning. This is because living far away from family causes friends at university to be the closest individuals to the respondent. Therefore, without parental supervision, respondents are easily influenced by negative behaviours such as smoking (Yahaya et al., 2018). Youth is a critical time when a person begins to find identity

and understand life's meaning before adulthood. They can easily be influenced by anything that looks fun and interactive in the current phase of life where they spend time with their friends. Plus, being friends with a friend who smokes cigarettes to some extent makes them more inclined to try it.

Thus, this study intended to investigate the relationship between the factors affecting the initiation of cigarette smoking and smoking status among boys in secondary school in Shah Alam by addressing the following research questions:

- a. What is the smoking status among 16- and 17-year-old boys at SMK Success, Shah Alam?
- b. What are the factors affecting the initiation of cigarette smoking among 16- and 17-year-old boys at SMK Success, Shah Alam?
- c. Is there any relationship between the factors affecting the initiation of cigarette smoking and smoking status among boys in secondary school among 16- and 17-year-old boys at SMK Success, Shah Alam?

Methodology

Research Design

This study employed a quantitative research technique, utilising descriptive and inferential approaches. Data for this research were collected from a population through a descriptive study, presenting fundamental statistics such as frequency, percentage, and mean score. The researcher utilised a survey approach to obtain the outcomes of the investigation. Surveys were employed by delivering questions to participants through an online method. The use of surveys facilitated the easier collection, examination, collation, and evaluation of data. Not only that, but surveys can provide a high level of generalisability in a large population. This enables the achievement of a large sample and statistically significant results as well as the validity of the results (Sincero, 2012). Respondents were invited to fill out the questionnaire via a Google form that the researcher used. Furthermore, the third research question was expressly used to inform the application of an inferential statistic—Pearson's Correlation Coefficient—in the research methodology. This study aimed to investigate the relationships between the factors influencing the initiation of cigarette smoking and smoking status among boys in secondary school in Shah Alam. It was used to explore the relationship between variables in the sample and then make generalisations or predictions about how those variables would be related.

Participants

The participants involved in this study were students aged 16 and 17 at Sekolah Menengah Kebangsaan Success, Shah Alam. The purposive sampling approach was employed. For this study, the sample size comprised 16- and 17-year-old male students. There were 214 male students aged 16 years old and 186 aged 17 years old—400 male students in total throughout both age groups. The Krejcie and Morgan Table indicated that 196 respondents would be a suitable sample size for this study to identify a valid and representative subject number.

Instrument

The research instrument utilised in this study was a questionnaire designed to collect data. Based on the research questions, only one instrument was modified. The study utilised a questionnaire from a previous research study conducted by Andrews et al. (2004) titled

"Understanding Adolescent Intentions to Smoke: An Examination of Relationships among Social Influence, Prior Trial Behavior, and Antitobacco Campaign Advertising." According to Cronbach's alpha value, all constructions' reliability coefficients fell between $\alpha = .65$ and $\alpha = .95$. As a result, the study's conclusions showed that the questionnaire instrument had both validity and reliability among the participants. There were two parts to this questionnaire: Part A and Part B. In Part A, the questions were demographic and consisted of a few questions about age, race, residence, and smoking status, presented as multiple-choice questions. Meanwhile, in Part B, the questions were related to research question one, which was about the factors affecting the initiation of cigarette smoking. In the questionnaire, respondents were required to choose between 'Definitely yes,' 'Probably yes,' 'Probably not,' or 'Definitely not.'

Procedures

Approval for this study was obtained from the Faculty of Education at Universiti Teknologi MARA (UiTM) Puncak Alam Campus to ensure research credibility. The goals and objectives of this research and the main researcher's background were briefly explained in the Google link form. Using a Google Form, the questionnaire was sent to the respondents by email and online messaging services, including Telegram, WhatsApp, and Email. Using Google Forms, the researcher generated several survey questionnaires that were distributed to all respondents, who were boys in secondary school between the ages of 16 and 17. Parents' involvement was required for those without a cell phone. The researcher also provided bilingual questionnaires in English and Bahasa Malaysia to improve comprehension and make it easier for the respondents to answer the questions. All responses were automatically recorded after the participants provided their answers. The average time it took a respondent to complete the questionnaire was 8 – 10 minutes. Once data had been collected, data analysis was performed.

Data Analysis

The questionnaire served as a research tool. Version 26 of the Statistical Package for Social Science (SPSS) was used to transcribe and analyze the raw data. The most widely used technique for obtaining data output in studies led to the selection of this particular program. With just a few mouse clicks, this method could not only produce exact and accurate findings, but it was also more convenient to retrieve data and execute data analysis. In addition, research questions served as the foundation for data analysis methods. To perform a quantitative survey for this study, the researcher gathered information from the questionnaire. This study used two analyses, which are descriptive analysis and inferential analysis. Basic statistics, such as the frequency and percentage of the result, were reported. Finally, the researcher analyzed the study's findings in the discussion session in the upcoming chapter four.

Results

Smoking status

The first research question seeks to identify the smoking status among 16- and 17-year-old boys at SMK Success, Shah Alam. Descriptive analysis was conducted by seeking the frequency and percentage of the data displayed. In terms of smoking status, the frequency of respondents choosing "no" to answer was the highest at 77.5% (n=141), surpassing those who answered "maybe" at 18.6% (n=34), and those who answered "yes" at only 3.8% (n=7).

Table 1: The Smoking Status of the Respondents

Smoker	Frequency (%)
No	141 (77.5%)
Maybe	34 (18.6%)
Yes	7 (3.8%)

Factors Initiation of Cigarette Smoking

The findings reveal the factors influencing the initiation of cigarette smoking among boys aged 16 and 17 at SMK Success, Shah Alam. In the first question, more than half of the respondents, 103 (56.6%) said they don't currently have any brothers or sisters who smoke. Regarding the second question, the proportion of participants who had adult smokers in their homes is nearly the same as that of those who smoke regularly. Moreover, 119 respondents (65.4%) said they had never tried smoking a cigarette, not even for one or two puffs. In addition, 119 respondents, or 65.4%, said they would not smoke if one of their closest friends offered them a cigarette in response to the tenth question. Only six people answered "definitely yes" to the question, while 17 (9.3%) responded with "probably yes." The last two questions showed significant differences, with more than 50% of respondents answering "definitely not" to the respective questions. In contrast, the last two questions indicated a positive response, with respondents expressing that they would not smoke cigarettes in the future.

Table 2. Factors Initiation of Cigarette Smoking Factors

Factors	Frequency (%)
Do you have any brothers or sisters who currently smoke cigarettes?	
Definitely yes	26 (14.3%)
Probably yes	32 (17.6%)
Probably not	21 (11.5%)
Definitely not	103 (56.6%)
Is there an adult in your household who is a regular smoker?	
Definitely yes	46 (25.3%)
Probably yes	39 (21.4%)
Probably not	25 (13.7%)
Definitely not	72 (39.6%)
Are there any of your four closest friends who smoke cigarettes?	
Definitely yes	23 (12.6%)
Probably yes	36 (19.8%)
Probably not	37 (20.3%)
Definitely not	86 (47.3%)
Have you ever tried cigarette smoking, even one or two puffs?	
Definitely yes	15 (8.2%)
Probably yes	28 (15.4%)

Probably not	20 (11.0%)
Definitely not	119 (65.4%)
Do you like watching smoking advertisements?	
Definitely yes	8 (4.4%)
Probably yes	13 (7.1%)
Probably not	43 (23.6%)
Definitely not	118 (64.8%)
Do you agree that tobacco companies specifically try to get young people to start smoking?	
Definitely yes	67 (36.8%)
Probably yes	61 (33.5%)
Probably not	18 (9.9%)
Definitely not	36 (19.8%)
Do you agree that tobacco companies fool young people into believing smoking is okay?	
Definitely yes	71 (38.0%)
Probably yes	48 (26.4%)
Probably not	23 (12.6%)
Definitely not	40 (22.0%)
Do you believe that secondhand smoke is dangerous to nonsmokers?	
Definitely yes	158 (86.8%)
Probably yes	13 (7.1%)
Probably not	0
Definitely not	11 (6.0%)
Do you agree that secondhand smoke kills people?	
Definitely yes	125 (68.7%)
Probably yes	43 (23.6%)
Probably not	8 (4.4%)
Definitely not	6 (3.3%)
Do you believe that tobacco is a dangerous product?	
Definitely yes	128 (70.3%)
Probably yes	40 (22.0%)
Probably not	9 (4.9%)
Definitely not	5 (2.7%)
If one of your best friends offered you a cigarette, would you smoke it?	
Definitely yes	6 (3.3%)
Probably yes	17 (9.3%)
Probably not	40 (22.0%)
Definitely not	119 (65.4%)

Do you think you will smoke a cigarette at any time during the next year?	
Definitely yes	4 (2.2%)
Probably yes	18 (9.9%)
Probably not	29 (15.9%)
Definitely not	131 (72.0%)

The Relationship Between Initiation of Cigarette Smoking and Smoking Status

The relationship between the factors affecting the initiation of cigarette smoking and smoking status among 16- and 17-year-old boys in secondary school was examined using Pearson's Correlation Coefficient. Table 4.4 indicates the correlation value, $r = -0.33$, is between 0.30 and 0.49. According to the correlation, the two variables had a moderate association. Given that alpha is set at 0.01 and the p-value that the analysis produced is 0.000, it is significant and smaller than alpha values. Hence, the result rejected the null hypothesis, demonstrating that there is a negative relationship between the factors influencing cigarette initiation and smoking status.

Table 3. Result of Pearson's Correlation Coefficient

		Smoker	M
Smoker	Pearson Correlation	1	-.326
	Sig. (2-tailed)		.000
	N	182	182
Factors	Pearson Correlation	-.326	1
	Sig. (2-tailed)	.000	
	N	182	182

Discussion

Smoking status

The data from the Centers for Disease Control and Prevention (2023), which, in a recent study, reported a smoking prevalence of 14.6% among teenagers in Malaysia. However, the smoking status of teenagers in previous studies has shown variation depending on the study and location. Smoking in the social environment is a strong risk factor for smoking initiation across different age groups, therefore, location is a factor that can influence smoking initiation among teenagers (O'Loughlin et al., 2017). Teenagers aged 13 to 17 who smoke in rural areas are 14.9% higher compared to 9.5% in urban areas (NHMS, 2022). Beyond efforts in tobacco control, the decrease in smoking prevalence can be attributed to increased awareness of the health risks associated with smoking, along with social and environmental factors (McKelvey & Halpern-Felsher, 2017).

The second most frequently selected smoking status was "maybe." Low self-esteem can contribute to feelings of inadequacy, social isolation, and a desire to fit in or be accepted by peers. According to the Tobacco Stops with Me (2021) website, teenagers with low self-image or self-esteem may be more prone to experimenting with smoking because it may be perceived as a way to cope with the negative emotions they are dealing with or to gain social attention. Therefore, many of them are uncertain about their smoking status. Thus, teenagers with low self-esteem may find it challenging to assert their own identity and priorities. They may engage

in smoking experiments as a way to test boundaries, gain peer approval, or adopt a certain image that they believe will improve their social standing. Furthermore, they may be more influenced by external factors such as peer pressure, societal expectations, or media portrayals. The desire to conform to a perceived norm or to gain acceptance from their peer group may motivate them to try smoking, even if they are unsure of their commitment to this behaviour. Meanwhile, teenagers who develop an addiction to cigarettes may be less concerned about their smoking, as they may use tobacco products despite the negative health consequences (American Lung Association, 2023). This is reflected in the fact that only 7 respondents among male students aged 16 and 17 years old from SMK Success, Shah Alam, have the status of a smoker by answering "yes" to their smoking status.

Factors Affecting the Initiation of Cigarette Smoking

The rate of current cigarette use among teenagers aged 13 to 17 years decreased from 13.8% in 2017 to 6.2% in Malaysia (CodeBlue, 2023). However, the tendency towards cigarettes among teenagers in Malaysia may not be as strong as in other countries. Teenagers here also felt they did not want to look more mature or grown up. Besides, they don't want to experience serious health problems in the long term (McKelvey & Halpern-Felsher, 2017). Apart from that, the majority of respondents to this study said they would not smoke if one of their closest friends gave them a cigarette, and the majority of respondents had never tried smoking even a single puff or two. Different findings from a qualitative study by Littlecott et al. (2022) found that smoking habit is a habitual activity in a friendship and is often associated with having several friends who smoke because it is often seen as one way to gain popularity among teenagers. However, they concluded that peer processes in smoking teenagers may change when smoking norms in society change. Smoking is considered more negative in an abnormal context compared to a normal context in the construction of popularity and identity.

Not only that, several factors have contributed to the decrease in the prevalence of smoking among teenagers today, and they are now concerned about health risks because these days, smoking poses a bigger risk to the health of many young people. These dangers include long-term health issues, a decline in physical fitness, and possible consequences on lung function and growth. Most of them are now aware of the risks associated with smoking because of this risk (McKelvey & Halpern-Felsher, 2017), and this can be proven among teenagers aged 16 and 17 years old from SMK Success, Shah Alam where more than 50% of respondents will not try cigarette smoking in the future.

The Relationship Between the Initiation of Cigarette Smoking and Smoking Status

There is a negative, moderate association between the circumstances that led to the commencement of cigarette smoking and the students' current smoking status. A negative correlation means that when the factors influencing cigarette initiation are higher, the smoking status will become lower. This is because the characteristics and behaviour of smokers can change from generation to generation due to factors such as changes in social norms, public health policies, and advances in tobacco control (Pavlikova et al., 2023). As a result, recollection bias may have affected some survey items, and the number of cigarettes smoked may have been inflated or underestimated (Jeong et al., 2021).

Studies have shown that self-reports tend to underestimate smoking status usually based on self-reported data. This suggests that the accuracy of self-reported smoking status may vary,

which may impact the correlation between initiation and smoking status among adolescents (Gorber et al., 2009). There are several reasons why today's teenagers are not inclined towards smoking activities. In Malaysia, the activities of teenagers who are not inclined to smoke are influenced by various factors and initiatives by the government and NGOs. Although no specific activities are clearly stated in the search results provided, there are several factors and initiatives associated with smoking prevention among Malaysian teenagers. One of these is Malaysia's National Tobacco Control Program, which has been effective in reducing the prevalence of teenage smokers (Tohid et al., 2012). These programs have been shown to prevent the initiation of tobacco use among adolescents and include public education campaigns. An important initiative in smoking prevention is to educate students about the harmful effects of smoking (Assunta, 2004).

Implication for Practice

Overall, this study can have great implications towards many parties such as students, teachers, parents, and the Ministry of Education. The research in this study can assist the Ministry of Education (MoE) in understanding the reasons behind smoking activities among school students and identifying the factors related to smoking. Consequently, the ministry can draw insights from these study findings as a guide for developing prevention strategies and interventions to reduce smoking among school students. Furthermore, areas that require improvement can be identified to aid in monitoring the effectiveness of existing anti-smoking measures. Moreover, the research study can serve as evidence to contribute to the shaping of policies and legislation related to tobacco control. For instance, the Ministry of Health and the Ministry of Education might collaborate to use these data to support stricter tobacco control laws, such as increasing cigarette taxes and regulating the sale of cigarettes to underage teenagers or, establishing smoking cessation clinic services in schools and not only in government health clinics and the Ministry of Education can ensure that these services are easily accessible to students who may struggle with smoking addiction.

The results of this study can also be used by parents and teachers to inform and educate schoolchildren about the risks associated with smoking. This involves spreading knowledge regarding the dangers of smoking, the advantages of avoiding it, and the advantages of stopping. As a preventive measure, both parties can collaborate to implement strategies aimed at preventing and reducing smoking among school students. Maybe it can be started with a school-level intervention competition event where it can foster new ideas of young people about smoking. Various interventions can be carried out, including conducting public education campaigns and tobacco control programs that will be managed by the students themselves. The whole process of reading and research can increase students' knowledge about smoking. Crucially, the implementation of these interventions begins with teachers and parents, who have a responsibility to lead by example by abstaining from smoking and promoting healthy habits. This can help reduce the social acceptance of smoking among school students.

Conclusion

This study's results reveal a significant relationship between the factors influencing the initiation of cigarette smoking and the smoking status among boys aged 16 and 17 in secondary school. The null hypothesis has been rejected due to the significance of the p-value. Additionally, there is a negative moderate correlation ($r = -0.33$), indicating that as the initiation of cigarette smoking increases, smoking status decreases. This research contributes to raising

awareness of the factors influencing smoking initiation. Such awareness is crucial as smoking initiation can impact social and peer influences, as well as academic performance, especially when individuals are unaware of the consequences of smoking. Furthermore, parents, educators, government or NGO professionals, and healthcare providers play pivotal roles in imparting information about the dangers of smoking and extending assistance to teenagers in Malaysia. Therefore, taking proactive steps to intervene early and prevent smoking can effectively reduce the negative effects of smoking on teenagers.

Recommendation for Future Studies

For future studies, some suggestions and recommendations are suggested. First, exploring different genders and ages with a wider age range could facilitate the collection of more diverse data across various age groups including students from rural areas in the study, raising the question of whether limited exposure to the digital world and, consequently, less media influence can prevent them from engaging in smoking activities. In addition, there is a need for more comprehensive research on students' knowledge about cigarettes in Malaysia or qualitatively where the researcher can explain the real situation of what happened during the research process, the relationship between the researcher and the study respondents will be close so they can easily explain in more details with observation results. In line with current trends, future studies may focus on electronic cigarettes or vaping since it is a craze among teenagers today. Last but not least, future studies should aim to include all states in Malaysia to compile and obtain more extensive national data.

References

- Andrews, J. C., Netemeyer, R. G., Burton, S., Moberg, D. P., & Christiansen, A. (2004a). Understanding adolescent intentions to smoke: An examination of relationships among social influence, prior trial behaviour, and anti-tobacco Campaign Advertising. *Journal of Marketing*, 68(3), 110–123.
- Ambok Welan, Z. A. H., & Zulkifli, A. F. (2023). The Impact of Online Learning on Mental Illness Among Physical and Health Education Students at Malaysian Public University. *Asian Journal of University Education*, 19(4), 632–637.
- Basiron @ Badron, B. (2014). *Merokok Dan Implikasinya Dalam Kalangan guru-guru sekolah kebangsaan Daerah Kulajaya*. Universiti Teknologi Malaysia Institutional Repository. Retrieved August 6, 2022, from <http://eprints.utm.my/id/eprint/48866/>
- CodeBlue. (2022). *That lingering smoke from Malaysian men*. CodeBlue. Retrieved August 3, 2022, from <https://codeblue.galencentre.org/2022/01/26/that-lingering-smoke-from-malaysian-men/>
- CodeBlue. (2023). *NHMS survey: Among Malaysian teens, smoking rate falls but vaping prevalence rises to 15%*. <https://codeblue.galencentre.org/2023/05/25/nhms-survey-among-malaysian-teens-smoking-rate-falls-but-vaping-prevalence-rises-to-15pc/>
- Danis, A., & Zulkifli, A. F. (2021). Exploration of CoachEye Application Features to Improve Feedback During Physical Education. *Asian Journal of University Education*, 17(2), 132.
- Gorber, S. C., Schofield-Hurwitz, S., Hardt, J., Levasseur, G., & Tremblay, M. (2009). The accuracy of self-reported smoking: A systematic review of the relationship between self-reported and cotinine-assessed smoking status. *Nicotine & Tobacco Research*, 11(1), 12–24.
- Hirschmann, R. (2021). *Malaysia: Prevalence of smoking among adolescents by school level*. Statista. Retrieved August 2, 2022, from <https://www.statista.com/statistics/1025095/prevalence-of-smoking-among-adolescents-by-school-level-malaysia/>
- Jeong, S. H., Jang, B. N., Kang, S. H., Joo, J. H., & Park, E.-C. (2021). Association between parents' smoking status and tobacco exposure in school-age children: Assessment using major urine biomarkers. *Scientific Reports*, 11(1), 1 – 9.
- Littlecote, H. J., Moore, Graham. F., Evans, Rhiannon. E., Melendez-Torres, G. J., McCann, M., Reed, H., Mann, M., Dobbie, F., Jennings, S., Donaldson, C., & Hawkins, J. (2022). Perceptions of Friendship, Peers and Influence on Smoking According to Socioeconomic Status and Tobacco Control Context: A Systematic Review and Meta- Ethnography of Qualitative Research. *BMC Public Health*, 23(424), 1-2.
- McKelvey, K., & Halpern-Felsher, B. (2017). Adolescent cigarette smoking perceptions and behaviour: Tobacco control gains and gaps amidst the rapidly expanding tobacco products market from 2001 to 2015. *Journal of Adolescent Health*, 60(2), 226–228.
- Mohammed Nawi, A., Jetly, K., & Ramli, N. S. (2021). Smoking in Malaysia: Main issues and ways to overcome. *IJUM Medical Journal Malaysia*, 20(3), 164 – 172.
- O'Loughlin, J., O'Loughlin, E. K., Wellman, R. J., Sylvestre, M.-P., Dugas, E. N., Chagnon, M., Dutczak, H., Laguë, J., & McGrath, J. J. (2017). Predictors of cigarette smoking initiation in early, middle, and late adolescence. *Journal of Adolescent Health*, 61(3), 363–370.
- Pavlikova, B., Baska, T., Freel, L., & Van Dijk, J. P. (2023). Smoking is a risk factor for Generation Z, too: The evolution of attitudes. *International Journal of Public Health*, 68, 1-9.

- Tohid, H., Ishak, N. M., Muhammad, N. A., Ahmad, F. N. M., Aziz, A. A. E., & Omar, K. (2012). Perceived effects of the Malaysian National Tobacco Control Programme on adolescent smoking cessation: A qualitative study. *The Malaysian Journal Of Medical Sciences*, 19(2), 35-47.
- Zulkifli, A. F. (2023). Applying the theory of diffusion of innovation to evaluate students' acceptance of swimming courses online. *Asian Journal of University Education*, 19(2), 423 – 435.