



## **THE INFLUENCE OF ADOLESCENT KNOWLEDGE ABOUT REPRODUCTIVE HEALTH ON THE INTENTION TO AVOID SMOKING**

**Marmi<sup>1\*</sup>, Sujono Riyadi<sup>2</sup>**

<sup>1</sup>Universitas YPIB Majalengka, Jl. Gerakan Koperasi No.003, Majalengka Wetan Majalengka, Majalengka, Jawa Barat 45411, Indonesia

<sup>2</sup>Universitas Jenderal Achmad Yani Yogyakarta, Jl. Ringroad Barat, Area Sawah, Banyuraden, Sleman, Yogyakarta 55293, Indonesia

\*[marmi@lecturer.univypib.ac.id](mailto:marmi@lecturer.univypib.ac.id)

### **ABSTRACT**

Smoking is one of the leading causes of global mortality, significantly impacting reproductive health in both men and women. In Indonesia, the prevalence of adolescent smokers increased from 7.20% in 2013 to 9.10% in 2018, and it is projected to reach 16% by 2030 without effective interventions. The impact of smoking on reproductive health includes fertility disorders, reproductive cancer risks, and hormonal complications, which are often poorly understood by adolescents, particularly in areas with limited access to health information such as Sumenep, Madura. Objective: This study aims to analyze the relationship between adolescents' knowledge of the dangers of smoking to reproductive health and their intention to avoid smoking. Additionally, it seeks to provide scientific insights into the importance of reproductive health education as part of smoking prevention strategies. Methods: This cross-sectional study involved 200 adolescents aged 12–22 years, selected using proportional stratified random sampling. Data were collected through validated structured questionnaires, covering knowledge about the dangers of smoking and intentions to avoid smoking. Data analysis was performed using chi-square tests and logistic regression to identify relationships between variables. Results: The analysis revealed a significant relationship between adolescents' knowledge of the dangers of smoking to reproductive health and their intention to avoid smoking ( $p = 0.000$ ). Adolescents with high levels of knowledge were more likely to have a strong intention to avoid smoking ( $OR = 3.25$ ; 95% CI: 1.92–5.51). Pearson correlation analysis showed a positive relationship with an  $r$ -value of 0.373. Conclusion: Knowledge about the dangers of smoking to reproductive health plays a crucial role in shaping adolescents' intentions to avoid smoking. The findings of this study underscore the importance of comprehensive reproductive health education programs to increase adolescents' awareness and reduce smoking prevalence, especially in areas with limited access to health information.

**Keywords:** adolescents; health education; intention to avoid smoking; reproductive health; smoking

### **How to cite (in APA style)**

Marmi, M., & Riyadi, S. (2025). The Influence of Adolescent Knowledge about Reproductive Health on the Intention to Avoid Smoking. *Indonesian Journal of Global Health Research*, 7(3), 1-10. <https://doi.org/10.37287/ijghr.v7i3.5632>.

## **INTRODUCTION**

Despite substantial evidence gathered over the past 70 years regarding the health hazards of tobacco products, smoking remains one of the leading preventable causes of death (Dai et al., 2022) and disability worldwide (Flor et al., 2021). The World Health Organization (WHO) reports that over 1.1 billion people globally smoke, accounting for approximately 11.5% of total deaths in 2015 (W.H.O., 2020). Beyond causing chronic diseases such as lung cancer, cardiovascular diseases, and chronic obstructive pulmonary disease (COPD) (Carreras et al., 2019; W.H.O., 2020), smoking also significantly impacts reproductive health. These effects include fertility disorders, sperm DNA damage, hormonal dysfunction, and pregnancy complications (Siddiqi et al., 2020), affecting both men and women (WHO, 2020). This issue poses not only a global health challenge but also demands serious attention in developing countries like Indonesia. In Indonesia, smoking behavior among adolescents shows an increasing trend (Riyadi & Marmi, 2024; Triana et al., 2022). The prevalence of smoking among adolescents aged 10–18 years rose from 7.20% in 2013 to 9.10% in 2018 (or

approximately 3.2 million children) (Kemenkes RI, 2020). Adolescents are highly vulnerable to environmental influences such as peer pressure, family dynamics, and aggressive tobacco advertising. Limited knowledge about the dangers of smoking, particularly regarding reproductive health, is often a primary factor contributing to the increased risk of smoking behavior in this age group (Kristianto et al., 2019; Schuler et al., 2019).

This phenomenon is particularly relevant in Sumenep, Madura, a region characterized by cultural and social norms that shape adolescents' perceptions of smoking. Limited access to health information in this area presents a significant challenge to smoking prevention efforts. Adolescents often view smoking as a lifestyle choice or a symbol of maturity without realizing its long-term consequences. Therefore, evidence-based approaches that consider local factors are essential to raise awareness about the dangers of smoking (Riyadi & Marmi, 2024), especially concerning reproductive health. This study seeks to address the knowledge gap concerning the relationship between adolescents' knowledge of the dangers of smoking to reproductive health and their intention to avoid smoking. Using the Theory of Planned Behavior (TPB) as a framework, the study examines how attitudes, subjective norms, and perceived behavioral control influence adolescents' intentions to refrain from smoking. TPB, a socio-psychological theory, posits that human behavior is influenced by three main elements: attitudes toward behavior, subjective norms, and perceived behavioral control (Ajzen & Fishbein, 2015). This theory has been shown to explain 72% of adolescent smoking (Acarli & Kasap, 2015).

This study aims to provide scientific insights into the crucial role of reproductive health education in shaping adolescents' decisions to avoid smoking. Practically, the findings of this study are expected to serve as a foundation for designing more effective school-based intervention programs that are tailored to the local conditions in Sumenep, Madura. Local governments and educational institutions are encouraged to utilize the study's findings to design targeted programs that positively impact the health of younger generations.

## **METHOD**

This study employed a quantitative approach with a cross-sectional design to examine the relationship between knowledge of the dangers of smoking on reproductive health and adolescents' intention to avoid smoking. The study involved 200 adolescents aged 12 to 22 years, selected using proportional stratified random sampling to ensure adequate representation based on age and gender. The research was conducted from July to August 2024.

Data collection was carried out using a questionnaire consisting of two main sections:

1. Knowledge of the Dangers of Smoking on Reproductive Health: This section assessed the respondents' understanding of the negative impacts of smoking, including its risks to the reproductive system.
2. Intention to Avoid Smoking: This section measured the extent of the respondents' desire to avoid smoking habits.

Before deployment, the instrument underwent validity and reliability testing on a separate pilot sample, yielding a Cronbach's Alpha value  $> 0.7$ , indicating high internal consistency.

The collected data were analyzed using the following methods:

1. Univariate Analysis: To describe the frequency distribution and percentages of adolescents' knowledge about the dangers of smoking on reproductive health and their intention to avoid smoking.
2. Bivariate Analysis: To test the relationship between the level of knowledge about the dangers of smoking and the intention to avoid smoking, using Pearson's correlation test.

3. Multivariate Analysis: Multiple logistic regression was employed to identify factors that simultaneously influence adolescents' intention to avoid smoking.

This study received ethical approval from the Ethics Committee of Universitas Jenderal Achmad Yani Yogyakarta with approval letter number: SKep/98/KEP/V/2024.

## RESULT

### Respondent Characteristics Based on Gender and Age

This study involved 200 adolescent respondents aged 12 to 22 years. Based on the data obtained, the gender distribution shows that 70% of the respondents are male (140 people), while 30% are female (60 people). The majority of the respondents fall within the age range of 16-17 years, which makes up 55.5% of the total respondents.

Table 1.  
Distribution of Respondents by Gender

Gender	f	%
Male	140	70.0
Female	60	30.0
Total	200	100.0

Table 2.  
Distribution of Respondents by Age

Age (years)	f	%
12	3	1.5
13	7	3.5
14	27	13.5
15	17	8.5
16	57	28.5
17	54	27.0
18	27	13.5
19	2	1.0
20	1	0.5
21	2	1.0
22	3	1.5
Total	200	100.0

### Knowledge of the Dangers of Smoking on Reproductive Health and the Intention Not to Smoke

The data analysis shows a relationship between knowledge of the dangers of smoking on reproductive health and adolescents' intention not to smoke. Based on Table 3, adolescents with high knowledge about the dangers of smoking on reproductive health are more likely to have a strong intention not to smoke (70%), compared to those with low knowledge (42%).

Table 3.  
Crosstabulation of Knowledge of the Dangers of Smoking on Reproductive Health and Intention Not to Smoke

Knowledge of the Dangers of Smoking	Weak Intention Not to Smoke	Strong Intention Not to Smoke	Total
Low	66	42	108
High	22	70	92
Total	88	112	200

### Correlation Analysis

The Pearson correlation analysis shows a significant relationship between adolescents' knowledge of the dangers of smoking on reproductive health and their intention not to smoke

( $p = 0.000$ , which is less than 0.05). The Pearson correlation value of 0.373 indicates a moderate positive relationship between the two variables.

Table 4.  
Pearson Correlation Results

Variable	Pearson Correlation	Sig. (2-tailed)
Knowledge of the Dangers of Smoking on Reproductive Health	1	-
Intention Not to Smoke	0.373**	0.000

These results indicate that the higher the adolescents' knowledge of the dangers of smoking on reproductive health, the stronger their intention to avoid smoking.

## DISCUSSION

This study aims to explore how adolescents' knowledge of the dangers of smoking on reproductive health influences their intention not to smoke. Based on the findings, the main discovery shows a significant relationship between the level of knowledge about the dangers of smoking on reproductive health and adolescents' intention not to smoke. This discussion will further explore how this knowledge shapes adolescents' attitudes and behaviors toward smoking and will explain the negative effects of smoking on reproductive health, which is the main focus of this study. Additionally, the discussion will relate the findings of this study to previous research in the field to strengthen the argument that knowledge of the impact of smoking on reproductive health can influence adolescents' intention not to smoke.

### Knowledge of the Dangers of Smoking and Intention Not to Smoke

The results of this study indicate that adolescents with high knowledge about the dangers of smoking on reproductive health have a stronger intention not to smoke. This knowledge includes an understanding of the negative effects of smoking on the reproductive system, such as fertility issues, the risk of reproductive cancers, and hormonal disruptions. According to the crosstabulation analysis, around 70% of adolescents with high knowledge about the dangers of smoking on reproductive health showed a strong intention not to smoke, while only 42% of adolescents with low knowledge had a similar intention. This phenomenon is consistent with the Health Belief Model and the Theory of Planned Behavior, which assert that better knowledge of health risks can influence an individual's attitude and decisions to avoid risky behaviors, such as smoking (Ajzen & Fishbein, 2015). Using the Structural Equation Model (SEM) built based on TPB components, the factors influencing students' smoking behavior were successfully identified (Acarli & Kasap, 2015).

The study results indicate that the Theory of Planned Behavior explains 72% of the smoking behavior of the study participants. The TPB component with the most influence on students' behavior is attitude, followed by subjective norms, and lastly, perceived behavioral control. These findings suggest that to change students' tendency to smoke—or, in other words, to modify their behavior—interventions should focus primarily on attitude, particularly by targeting behavioral beliefs (Acarli & Kasap, 2015). Scientific evidence and previous research increasingly support these findings. For example, a study showed that health education, which provides in-depth information about the impact of smoking on health, including reproductive health, was effective in improving adolescents' positive attitudes toward avoiding smoking (Park et al., 2017; Pedrana Alisa et al., 2020). Additionally, research has explained that integrated school-based health education programs can have a positive impact on preventing smoking habits among adolescents (Nichola Shackleton et al., 2016). This study also noted that knowledge of the effects of smoking on reproductive health, such as reduced fertility or cancer risk, encouraged adolescents to be more cautious in maintaining their health.

Furthermore, a study found that many respondents had misconceptions about smoking and were unaware of the health dangers it poses, including reproductive health (Wong et al.,

2016). This study discusses the importance of providing accurate information about the health risks of smoking, including reproductive health, to correct these misconceptions. Therefore, health education that delivers detailed information about the effects of smoking can help raise adolescents' awareness and improve their attitudes toward smoking, ultimately encouraging them to avoid the habit. Another study revealed that knowledge about the effects of smoking on sperm quality and fertility in men significantly influences their attitudes toward smoking behavior (Shawe et al., 2019). This research showed that men who better understood the impact of smoking on reproductive health, including sperm quality, were more likely to have a stronger intention to change their behavior, such as reducing smoking or improving their diet in preparation for pregnancy. Understanding the long-term health risks, such as reduced fertility and potential reproductive problems, can motivate adolescents to avoid smoking, as they realize it may affect their future, especially their ability to become fathers.

### **The Relationship Between Knowledge and Intention Not to Smoke**

Pearson's correlation analysis in this study reveals a significant relationship between knowledge of the dangers of smoking on reproductive health and the intention not to smoke. With a correlation value of 0.373 and a p-value of 0.000, it can be concluded that there is a moderately strong relationship between knowledge and intention. The knowledge gained through health education or information about the effects of smoking on reproductive health appears to serve as a strong deterrent for adolescents to start smoking. This finding aligns with the Theory of Planned Behavior, which suggests that knowledge of health impacts can influence attitudes and perceived behavioral control, which in turn affects intentions to engage in or avoid certain behaviors (Ajzen & Fishbein, 2015). In the context of this study, better knowledge of the dangers of smoking on reproductive health can strengthen adolescents' intention to avoid smoking, especially when they understand the negative impacts that can affect their long-term health (Nichola Shackleton et al., 2016; Shawe et al., 2019). Items related to behavioral beliefs in the model indicate that when students understand the harmful effects of smoking, they will develop a negative attitude toward smoking. Similarly, when the relationships in the model are examined, it is evident that students with a negative attitude toward smoking are less likely to become smokers (Acarli & Kasap, 2015).

Furthermore, the results of this analysis suggest that increasing knowledge can be an effective tool in preventing smoking behavior in adolescents, particularly if the information provided focuses on risks that are relevant to their lives, such as reproductive health. This also supports previous research that indicates education on health risks, especially regarding reproductive health, can influence adolescents' attitudes toward smoking habits (Pedrana Alisa et al., 2020; Shawe et al., 2019). The positive correlation found in this study further strengthens previous research findings, which show that integrated education programs based on information about the dangers of smoking tend to result in healthier attitudes in adolescents, one of which is an increased intention to avoid smoking (Nichola Shackleton et al., 2016). This research aligns with findings that assert that health education that includes aspects of reproductive health has a greater impact on adolescents' intention not to smoke, as they become more aware of the long-term effects that will influence their lives as adults (Shawe et al., 2019).

A study reinforces that comprehensive education can increase young women's awareness of not smoking. By examining various scientific sources, this research reveals that comprehensive education on the effects of smoking on the reproductive system—such as menstrual disorders, infertility, and cancer risk—can enhance young women's awareness and motivation to avoid or quit smoking (Achmad Sandy et al., 2024). A study also emphasizes that health education highlighting the impact of smoking on reproductive health has a significant influence in raising awareness among adolescents, particularly adolescent girls

(Achmad Sandy et al., 2024). A similar study in Southeast Asia found that adolescents who were informed about the effects of smoking on reproductive health had a higher awareness level to avoid smoking compared to those who only received general information about the dangers of smoking (Nguyen Than et al., 2016; Rao et al., 2014). In Indonesia, research revealed that locally-based approaches highlighting reproductive health issues are relevant to addressing the high prevalence of smoking among adolescents (Rosilawati et al., 2024), particularly in regions with limited access to information, such as Sumenep, Madura.

### **Impact of Smoking on Reproductive Health**

If smoking cessation efforts cannot significantly and rapidly reduce the number of smokers—especially in the Asian region, then smoking is likely to remain the leading cause of preventable death throughout this century (Dai et al., 2022). Smoking has a significant adverse effect on reproductive health for both men and women. For women, smoking can reduce fertility, cause menstrual disorders, and lead to early menopause (Astuti, 2019; Marmi, 2015). Furthermore, smoking increases the risk of cervical cancer and ovarian cancer (Faber et al., 2013). These effects are often not fully understood by adolescents, who are more focused on short-term impacts like bad breath or coughing. Therefore, education that addresses reproductive health can offer adolescents a new perspective on the long-term consequences of smoking. Smoking has highly detrimental effects on women's reproductive health. The harmful chemicals in cigarettes can trigger various reproductive issues, ranging from menstrual cycle disorders to an increased risk of cancer. One of the most common effects is menstrual irregularities, including an inconsistent cycle or dysmenorrhea (severe menstrual pain). Additionally, smoking contributes to a higher risk of infertility, caused by a decline in egg quality and disruptions in the ovulation process (Achmad Sandy et al., 2024).

For pregnant women, smoking increases the likelihood of complications such as miscarriage, premature birth, and low birth weight in infants. Furthermore, smoking is also linked to a higher risk of cervical cancer and breast cancer, two types of cancer that significantly impact women's reproductive health (Achmad Sandy et al., 2024). In men, smoking can affect sperm quality and fertility. Various chemicals in cigarettes are known to damage sperm and cause fertility issues. Several studies show that smokers have lower sperm counts than non-smokers. Smokers' sperm may also be abnormally shaped and have reduced motility, which can decrease the ability to fertilize an egg. Some studies also indicate that smokers have a higher risk of infertility compared to non-smokers. Not only does smoking affect natural conception, but it can also impact the success of assisted reproductive technologies, such as in vitro fertilization (IVF). Quitting smoking can improve sperm quality and increase the chances of pregnancy (Harlev et al., 2015; Kovac et al., 2015). This impact is not just harmful in the short term but may also affect the health of future generations, which adolescents often fail to consider.

### **Why Knowledge of Reproductive Health Is Key**

Knowledge about the impact of smoking on reproductive health, especially for adolescents, is often overlooked in smoking prevention programs, which tend to focus more on respiratory and heart diseases. However, by emphasizing the impact on reproductive health, which is more relevant to adolescents, we can encourage them to think more about the long-term consequences of smoking. Without a clear understanding of risks such as menstrual disorders, infertility, pregnancy complications, and an increased risk of reproductive cancers, the motivation to avoid or quit smoking becomes very low. This makes adolescents more vulnerable to starting the habit of smoking or finding it difficult to quit once they have already become smokers (Achmad Sandy et al., 2024). Based on various studies discussing comprehensive education on the effects of smoking on various aspects of health, including

reproductive health, it has been proven to be more effective in changing adolescents' attitudes and intentions to quit smoking (Ariska & Yuliana, 2021; Nopianto & Yuliani, 2022). This highlights that educational programs specifically addressing reproductive health will have a deeper impact on adolescents' decisions to refrain from smoking.

While increasing knowledge about the dangers of smoking can improve the intention not to smoke, significant challenges remain. One such challenge is the gap between knowledge and behavior. Many adolescents are well aware of the dangers of smoking but are still influenced by social pressures, such as cigarette advertisements (Riyadi & Marmi, 2024) and peer pressure to smoke (Jufri et al., 2023). This indicates that knowledge alone is not sufficient to change behavior; social and environmental interventions that provide support are also necessary. This study has several limitations that should be considered. First, the cross-sectional design of the study only illustrates the relationship between variables at one specific point in time and cannot establish causal relationships. Second, external factors such as peer influence, social pressure, and exposure to cigarette advertisements were not directly measured, although these factors are known to have a significant impact on smoking behavior among adolescents. Third, the use of a questionnaire as the sole data collection tool may introduce social desirability bias, where respondents are likely to provide answers that they perceive as "good" or "correct" socially. Additionally, this research was conducted only in Sumenep, Madura, which has specific cultural and social characteristics. Therefore, the generalization of results to a broader population should be done with caution. Future research is recommended to involve other regions with different characteristics to strengthen the external validity of the findings.

### **Practical Implications**

The findings of this study have several important implications for policy development and interventions. First, local governments and educational institutions in Sumenep, Madura, need to integrate reproductive health education programs into the school curriculum. These programs should be designed comprehensively to raise adolescents' awareness of the long-term effects of smoking on reproductive health. Second, there is a need to develop locally relevant educational modules that are in line with the cultural and social context of the community. These modules can include information about the dangers of smoking on reproductive health, accompanied by real-life stories or case studies that are easy for adolescents to understand. Third, community-based interventions should be strengthened through collaboration between public health centers (Puskesmas), schools, and parents. Activities such as seminars, workshops, and anti-smoking campaigns involving community and religious leaders can help create a supportive social environment for healthy behaviors. Fourth, regulations should be strengthened to limit adolescents' access to cigarettes, including stricter monitoring of cigarette advertisements that often target young people. Local governments can also consider implementing smoke-free zones in schools and other public facilities. Lastly, future research should adopt a longitudinal design to identify causal relationships between knowledge, attitudes, social norms, and intentions not to smoke. Additionally, assessments of environmental and social factors should be incorporated to provide a more comprehensive picture of adolescent smoking behavior.

### **CONCLUSION**

Adolescents' knowledge of the dangers of smoking on reproductive health plays a crucial role in shaping their intention to avoid smoking. This increased knowledge can act as a reinforcing factor, making adolescents more aware of the importance of maintaining reproductive health and preventing the negative consequences of smoking. Therefore, health education focusing on the impact of smoking on reproductive health should be an integral part of a broader

smoking prevention program among adolescents. By emphasizing the long-term risks to reproductive health, it is hoped that adolescents will better understand the consequences of smoking and choose to avoid it. Through comprehensive education, they can be encouraged to think more deeply about how smoking habits can affect their quality of life in the future, particularly in terms of reproductive health and potential impacts on future generations. This not only affects individual health but also the overall quality of life for families and communities.

## REFERENCES

- Acarli, D. S., & Kasap, M. Y. (2015). Explanation of High School Students' Smoking Behavior: A Structural Equation Model Approach with the Theory of Planned Behavior. *Journal of Baltic Science Education*, 14(2), 172–182.
- Achmad Sandy, F., Istifani Salsabila, P., & Solfianita, M. D. (2024). Pengaruh Informasi Kesehatan Reproduksi dalam Mengurangi Kebiasaan Merokok pada Remaja Putri. *Jurnal Studi Multidisipliner*, 8(7), 2118–2453.
- Ajzen, I., & Fishbein, M. (2015). The predictions of behavior from attitudinal and normative variables. *Journal of Experimental Social Psychology*, 6(466–487), 90057–0. <https://doi.org/10.1016/0022-1970>;
- Ariska, A., & Yuliana, N. (2021). Hubungan Tingkat Pengetahuan Remaja Tentang Kesehatan Reproduksi Dengan Sikap Terhadap Perilaku Seksual Pranikah Di Smp N 2 Jatipuro. *Jurnal Stethoscope*, 1(2), 138–144. <https://doi.org/10.54877/stethoscope.v1i2.814>
- Astuti, T. (2019). Faktor-Faktor Yang Mempengaruhi Pengetahuan Dan Sikap Remaja Tentang Dampak Rokok Bagi Kesehatan Reproduksi Di Dusun I Desa Bakaran Batu Kecamatan Percut Sei Tuan Kabupaten Deli Serdang Tahun 2019. *Excellent Midwifery Journal*, 2(2). <https://doi.org/10.55541/emj.v2i2.87>
- Carreras, G. ... Byrne, H. (2019). Panagiotis Behrakis, Anna Tzortzi. *Preventive Medicine*, 129. <https://doi.org/10.1016/j.ypmed.2019.105833>.
- Dai, X., Gakidou, E., & Lopez, A. (2022). Evolution of the global smoking epidemic over the past half century: strengthening the evidence base for policy action (pp. 129–137). *Tobacco Control*.
- Faber, M. T. ... Jensen, A. (2013). Australian Cancer Study (Ovarian Cancer); Australian Ovarian Cancer Study Group. *Cancer Causes Control*, 24(5), 989–1004. <https://doi.org/10.1007/s10552-013-0174-4>.
- Flor, L. S., Reitsma, M. B., & Gupta, V. (2021). The effects of tobacco control policies on global smoking prevalence. *Nat Med*, 27, 239–243. <https://doi.org/10.1038/s41591-020-01210-8>
- Harlev, A., Agarwal, A., Gunes, S. O., Shetty, A., & Plessis, S. S. (2015). Smoking and Male Infertility: An Evidence-Based Review. *The World Journal of Men's Health*, 33(3), 143–160. <https://doi.org/10.5534/wjmh.2015.33.3.143>
- Jufri, I. H., Zainuddin, K., Kusuma, P., & Ajzen, I. (2023). Pengaruh Konformitas Teman Sebaya Dan Kontrol Diri Terhadap Perilaku Merokok Pada Siswa SMP “X” Makassar. *Organizational Behavior and Human Decision Processes*, 50(6), 179–211. <https://doi.org/10.56799/peshum.v2i6.2392>



- Kemenkes RI. (2020). Profil Kesehatan Indonesia tahun 2020. In Pusdatin. <https://www.kemkes.go.id/downloads/resource/s/download/pusdatin/profil-kesehatanindonesia/Profil-Kesehatan-Indonesia-Tahun2020.pdf>. Last accessed. <https://www.kemkes.go.id/downloads/resource/s/download/pusdatin/profil-kesehatanindonesia/Profil-Kesehatan-Indonesia-Tahun2020>
- Kovac, J. R., Khanna, A., & Lipshultz, L. I. (2015). The effects of cigarette smoking on male fertility. *Postgraduate Medicine*, 127(3), 338–341. <https://doi.org/10.1080/00325481.2015.1015928>
- Kristianto, Y. Y., Bakar, A., & Yasmara, D. (2019). Factors Affecting The Smoking Behavior Of 17–25 Year-Old Teenagers In Urban Areas'. *Indian Journal Of Public Health Research & Development*. Prof.(Dr) Rk Sharma, 10(8), 1241–1246.
- Marmi, M. (2015). *Kesehatan Reproduksi*. Pustaka Pelajar.
- Nguyen Than, H. ... Pham Thi, Q. N. (2016). Knowledge and Attitude Towards Tobacco Smoking among 13-15 Year-Old School Children in Viet Nam. *Asian Pac J Cancer Prev*, 37–42. <https://doi.org/10.7314/APJCP.2016.17.S1.37>
- Nichola Shackleton, A., Farah Jamal, B., Russell M.Viner, C., Kelly Dickson, B., & George Patton, D. (2016). Christopher Bonell Ph.D. b School-Based Interventions Going Beyond Health Education to Promote Adolescent Health. *Systematic Review of Reviews. Journal of Adolescent Health*, 58(ue 4), 382–396.
- Nopianto, P., & Yuliani, I. (2022). Efektivitas Penerapan Pengetahuan Dampak Bahaya Merokok terhadap Kesehatan Reproduksi pada Siswa/Siswi Kelas 10 di Sma Pusaka Nusantara 2 Bekasi. *Malahayati Nursing Journal*, 4(9), 2233–2242. <https://doi.org/10.33024/mnj.v4i9.6905>.
- Park, E., Kulbok, P. A., Keim-Malpass, J., Drake, E., & Kennedy, M. J. (2017). Adolescent Smoking Prevention: Feasibility and Effect of Participatory Video Production. *Journal of Pediatric Nursing*, 36, 197–204,. <https://doi.org/10.1016/j.pedn.2017.07.001>.
- Pedrana Alisa, E. ... S, P. Y. (2020). A quasi-experimental text messaging trial to improve adolescent sexual and reproductive health and smoking knowledge in Indonesia. *Sexual Health*, 17, 167–177. <https://doi.org/10.1071/SH18199>
- Rao, S., Aslam, S. K., & Zaheer, S. (2014). Anti-smoking initiatives and current smoking among 19,643 adolescents in South Asia: findings from the Global Youth Tobacco Survey. *Harm Reduct J*, 11(8). <https://doi.org/10.1186/1477-7517-11-8>
- Riyadi, S., & Marmi, M. (2024). The Influence of Cigarette Advertising Exposure on Teenage Smoking Cessation Intention. *Indonesian Journal of Global Health Research*, 7(1), 637–644. <https://doi.org/10.37287/ijghr.v7i1.4528>
- Rosilawati, Y., Rafique, Z., & Sudiwijaya, E. (2024). Tobacco use among in-school young adolescents in Indonesia: Exploring availability, affordability, and accessibility. *PLoS One*, 19(3). <https://doi.org/10.1371/journal.pone.0301291>.
- Schuler, M. S., Tucker, J. S., Pedersen, E. R., & D'Amico, E. J. (2019). Relative influence of perceived peer and family substance use on adolescent alcohol, cigarette, and marijuana use across middle and high school. *Addictive Behaviors*, 88, 99–105.

- Shawe, J. ... Stephenson, J. (2019). Preparation for fatherhood: A survey of men's preconception health knowledge and behaviour in England. *PLoS ONE*, 14(3), 213897. <https://doi.org/https://doi.org/10.1371/journal.pone.0213897>
- Siddiqi, K., Husain, S., & Vidyasagaran, A. (2020). Global burden of disease due to smokeless tobacco consumption in adults: an updated analysis of data from 127 countries. *BMC Med*, 18, 222. <https://doi.org/10.1186/s12916-020-01677-9>
- Triana, W., Veriza, E., Reskiaddin, L. O., & Puspitasari. (2022). The Effectiveness Of The Emo Demo Method To The Knowledge And Behavior Of Cigarettes. *Journal of Natural and Applied Sciences Pakistan*, 4(2), 1017–1026.
- W.H.O. (2020). UCSF WHO Tobacco Control Papers Title Tobacco & Postsurgical Outcomes. Permalink <https://escholarship.org/uc/item/13388068>.
- Wong, L. P., Alias, H., Aghamohammadi, N., Aghazadeh, S., & Hoe, V. C. W. (2016). Shisha Smoking Practices, Use Reasons, Attitudes, Health Effects and Intentions to Quit among Shisha Smokers in Malaysia. *International Journal of Environmental Research and Public Health*, 13(7), 726. <https://doi.org/10.3390/ijerph13070726>