

THE RELATIONSHIP BETWEEN EXPOSURE TO CIGARETTE-BASED MEDIA AND THE SMOKING BEHAVIOUR OF MALE TEENAGERS AT MAN 2 WONOSOBO

Sri Mulyani *, Fifi Alviana, Ari Setyawati, Abdullah Azam Mustajab, Ika Purnamasari

Universitas Sains Al Qur'an Jawa Tengah di Wonosobo

Jln. KH Hasyim Asy'ari Km. 03 Wonosobo Jawa Tengah Indonesia

Email: srumul@unsiq.ac.id

Abstract

Background: Smoking is a major trigger for several long-term (chronic) diseases that can lead to death. According to the 2019 Global Youth Tobacco Survey, 19.20% of students in Indonesia are active smokers, and 65.2% of students are also freely exposed to cigarette advertising. The high prevalence of smoking can impact various aspects, ranging from health, the environment, and the economy, both on a small and large scale. Objective: The purpose of this study was to determine the relationship between media exposure to cigarettes and smoking behavior among male adolescents at MAN 2 Wonosobo. Method: This study was quantitative, with an observational analytical method and a cross-sectional design. The sample in this study consisted of 36 individuals and was selected using a purposive sampling technique. Data analysis was performed using the Spearman correlation test. Results: The results of the univariate analysis showed that media exposure about cigarettes among adolescents was predominantly through television (91.7%) and billboards/large banners on the street (91.7%). Teenagers smoke in coffee shops (8.3%), homes (13.9%), public places (11.1%), and anywhere (5.6%). Conclusion: The Spearman correlation test showed a p-value of 0.235 ($p > 0.05$), indicating no relationship between media exposure and smoking behavior among male adolescents at MAN 2 Wonosobo.

Keywords: Media Exposure, Adolescents, Smoking Behavior

INTRODUCTION

Smoking is a major risk factor for several long-term (chronic) diseases that can lead to death. Smoking also causes other negative impacts, such as addiction, economic and social impacts, and even personality damage. Cigarettes contain approximately 4,000 chemicals, some of which are carcinogenic, 40 of which cause cancer, and 200 of which can be harmful to health. Toxins found in cigarettes include tar, nicotine, carbon monoxide, lead, ammonia, hydrogen cyanide, nitrous oxide, and phenol (Nursal, et al., 2023).

Cigarettes are generally familiar to junior high school-aged adolescents. They believe that smoking will make them appear more sociable, especially among their peers. According to Notoatmojo, factors that can influence smoking behavior in adolescents include the social

environment, such as parental influence, peer influence, and advertising. Seeing advertisements in mass media and electronic media that depict smokers as symbols of masculinity and luxury often triggers adolescents to imitate the behavior depicted in these advertisements. Cigarette advertisements are designed to be as attractive as possible, emphasizing themes of friendship, intimacy, and togetherness (Nursal, et al., 2023).

Smoking is the act of inhaling tobacco smoke wrapped in nipah leaves or burning paper, which is inhaled into the body and then exhaled through the mouth or nose. Smoking is a calming activity. Cigarettes contain antidepressants that provide a calming effect on smokers, as well as 4,000 toxins in a single cigarette. The dangers of smoking and its impact on health are listed on cigarette packaging. Health hazards caused by smoking include cancer, heart attacks, impotence, and pregnancy and fetal disorders. Despite the listed dangers, many people still actively smoke (Herawati, 2021).

Smoking is a detrimental habit in various aspects of life. Pathologies to the body's biological systems caused by smoking include increased incidences of cancer, cardiovascular disease, respiratory disorders, pregnancy complications, and fetal abnormalities. The negative psychosocial impacts of smoking include being a gateway to substance abuse and promiscuous sexual behavior among adolescents. Economic losses include the substantial funding needed to address smoking-related diseases. Factors contributing to the persistence of smoking behavior include: 1) Smoking addiction, 2) Perceptions of the benefits of smoking, 3) Smoking in indiscriminately, and 4) Government policies regarding cigarette safety for health (Kumboyono & Wiahstuti, 2022).

The majority of the world's smokers come from developing countries (over 80%), including Indonesia (Sebayang et al., 2024). In 2022, the global prevalence of tobacco use reached 1.25 billion people. Indonesia is the third-largest country in the world with the largest number of smokers after China and India. The incidence of active smoking in Indonesia is higher than in countries with a larger population, namely the United States. The prevalence of smoking in Indonesia is increasing, especially among children and adolescents. According to the 2020 Indonesian Tobacco Atlas, the largest age group for first-time smokers in Indonesia, 52.1%, is adolescents aged 15-19 and 23.1% are aged 10-14 (Mirnawati et al., 2025).

According to the 2019 Global Youth Tobacco Survey, 19.20% of students in Indonesia are active smokers, and 65.2% are also exposed to cigarette advertising (Ratih et al., 2021). According to the 2018 Tobacco Control Atlas ASEAN Region report, Indonesia ranks first in ASEAN for the number of smokers. The 2018 Basic Health Research (RISK Kesehatan Dasar) reported that the prevalence of adolescent smokers was 9.1%, a still very high figure, while the 2019 RPJMN target was 5.4% (Nuradela, Kurniawan, Ratih, Wardani, & Gayatri, 2023). The percentage of the population aged 15 and over who smoked tobacco in the past month in 2024 was 29.13% (BPS, 2024). According to Central Java BPS data in 2021, the percentage of the population aged 5 and over who smoked in the past month in Wonosobo Regency was 52.69% (BPS J. T., 2021).

The high prevalence of smoking can impact various aspects, from health, the environment, and the economy, on both a small and large scale. According to the Center for Indonesia's Strategic Development Initiatives (CISDI) (2021), the burden of the National Health Insurance (JKN) also stems from smoking-related diseases. For adolescents, who are the nation's golden generation, smoking can lead to various serious illnesses and an increased

risk of premature death in the future (United Nations Children's Fund/UNICEF, 2022) (Nuradela, Kurniawan, Ratih, Wardani, & Gayatri, 2023).

IMPLEMENTATION AND METHODS

This research is a quantitative study using observational analytical methods and a cross-sectional design, a research design where data collection is conducted at a specific point in time (Swarjana, 2023). Measurement of the independent variable (media exposure) and the dependent variable (smoking behavior in adolescents) was conducted simultaneously.

The study was conducted on male students at MAN 2 Wonosobo in December 2024. The number of respondents in this study was 36, determined by purposive sampling, where the sample is selected based on certain characteristics. A questionnaire was used to collect the research data. A questionnaire is a list of questions that have been structured and systematically compiled by the researcher to obtain data according to the researcher's wishes (Wasis, 2008). The questionnaire in this study consisted of 10 closed-ended questions covering media exposure to cigarettes and 13 questions on smoking behavior in adolescents, consisting of questionnaires on where to buy cigarettes (Questions 1-4), smoking locations (5-8), and environmental support (9-13). Data analysis in this study was conducted in two stages: univariate and bivariate. Univariate analysis was used to determine the frequency distribution of each studied variable, and bivariate analysis was used to determine the relationship between media exposure to cigarettes and adolescent smoking behavior. The bivariate analysis used the Spearman correlation test, a nonparametric statistical test to determine the relationship. It can be used in situations where one or both variables are on an ordinal scale, or both variables are quantitative, but normality conditions are not met (Endra, 2017).

RESEARCH RESULTS

The results of the univariate analysis obtained the following data:

Table 1. Frequency Distribution of Respondent Characteristics

Variabel	Frequency	%
Age		
15	7	19,4
16	15	41,7
17	10	27,8
18	4	11,1
Family Member		
There are people who smoke	26	72,2
No one smoke	10	27,8

Source: Statistical Test Results

From the table above, it can be seen that respondents aged 15 years were 7 (19.4%), aged 16 years 15 (41.7%), aged 17 years 10 (27.8%) and aged 18 years 4 (11.1%).

Table 2. Frequency Distribution of Media Exposure

Media Exposure	Yes		No	
	n	%	n	%
Media Exposure 1	33	91,7	3	8,3
Media Exposure 2	0	0	36	100
Media Exposure 3	3	8,3	33	91,7
Media Exposure 4	2	5,6	34	94,4
Media Exposure 5	11	30,6	25	69,4
Media Exposure 6	20	55,6	16	44,4
Media Exposure 7	4	11,1	32	88,9
Media Exposure 8	21	58,3	15	41,7
Media Exposure 9	18	50,0	18	50,0
Media Exposure 10	33	91,7	3	8,3

Source: Statistical Test Results

The results of the study showed that media exposure about cigarettes was highest among teenagers through television (91.7%) and billboards/large banners on the street (91.7%).

Table 3. Smoking Behavior

Smoking Behavior	Yes		No	
	n	%	n	%
Behavior 1	4	11,1	32	88,9
Behavior 2	22	61,1	14	38,9
Behavior 3	17	47,2	19	52,8
Behavior 4	5	13,9	31	86,1
Behavior 5	3	8,3	33	91,7
Behavior 6	5	13,9	31	86,1
Behavior 7	4	11,1	32	88,9
Behavior 8	2	5,6	34	94,4
Behavior 9	3	8,3	33	91,7
Behavior 10	5	13,9	31	86,1
Behavior 11	5	13,9	31	86,1
Behavior 12	0	0	36	100
Behavior 13	0	0	36	100

Source: Statistical Test Results

The study results showed that most teenagers who smoke buy cigarettes at shops/minimarkets near their homes (61.1%) and buy cigarettes per stick (47.2%). Teenagers smoke at coffee shops (8.3%), at home (13.9%), in public places (11.1%), and elsewhere (5.6%). Teenagers who smoke receive support from their parents (8.3%) and friends (13.9%).

Table 5. Results of the Normality Test for Media Exposure and Smoking Behavior

Variabel	Mean \pm SD	Median (min – max)	p
Media Exposure	4,03 \pm 1,46	4 (0 – 6)	0,005
Smoking Behavior	2,08 \pm 2,40	1 (0 – 9)	<0,001

Source: Statistical Test Results

According to the table of data normality test results using the Shapiro-Wilk test on media exposure, the p value was obtained = 0.005 ($p < 0.05$) and smoking behavior obtained a p value = <0.001 ($p < 0.05$) so that it can be concluded that the data is not normally distributed, so that the next bivariate analysis used is the Spearman Correlation test.

Table 6. Results of the Test of the Relationship between Media Exposure and Behavior

Variabel	p	r
Media Exposure	0,235	0,203
Smoking Behavior		

Source: Statistical Test Results

From the results of the correlation test, the p value was obtained = 0.235 ($p > 0.05$) so it can be concluded that there is no relationship between media exposure and smoking behavior of male adolescents at MAN 2 Wonosobo.

DISCUSSION

The results of the study revealed that 7 (19.4%) respondents were aged 15 years, 15 (41.7%), 10 (27.8%), and 4 (11.1%) were aged 16 years. According to the WHO, adolescence is a period of transition from childhood to adulthood, occurring between the ages of 10 and 19. Adolescence is a time of high vulnerability to deviant behavior, such as smoking. Today's adolescents choose to smoke because they are not yet mentally mature. Smoking behavior in late adolescence occurs because adolescents may have smoked since early adolescence. During this period, adolescents are psychologically unstable, vulnerable to environmental influences, and undergoing a transition from childhood to adulthood, where they tend to explore their identity (Susanti, Syafira, Febrina, & Farashati, 2024).

The results showed that media exposure about smoking among adolescents was highest through television (91.7%) and billboards/large banners on the streets (91.7%). Advertising is a medium for conveying information about a product to the public. Its function is to inform, persuade, or remind the public about cigarette products. Cigarette advertising is increasingly prevalent in the cigarette industry. This is evident in the increasing number of cigarette advertising media used by the cigarette industry, such as posters or images of cigarettes displayed on streets and in shops (Solihin, Nyorong, Nur'aini, & Siregar, 2023).

Behavior is a collection of reactions, actions, activities, a combination of movements, responses, and answers carried out by a person, such as the process of thinking, working, and so on. Behavior arises as a result of something, including the reciprocal relationship between stimulus and response, better known as stimulus-response. One social and cultural aspect that can influence health behavior is group image. A person's image is strongly influenced by the

image within that group. Children's behavior tends to reflect their family circumstances (Djannah, et al., 2021). Research shows that 72.8% of adolescents have family members (fathers, older siblings, or grandfathers) who smoke.

The Spearman correlation test, which examined the relationship between media exposure and smoking behavior in adolescents at MAN 2 Wonosobo, yielded a p-value of 0.235 ($p > 0.05$), concluding that there is no relationship between media exposure and smoking behavior in adolescents. Media exposure is not the only factor contributing to smoking behavior. Smoking behavior is caused by two factors: external and internal. Internal factors originate from within the individual, while external factors originate from the environment, including family and friends. Other factors influencing smoking behavior in adolescents include adolescents' high level of knowledge about smoking, positive attitudes, and parental influence that discourages smoking (Nursal, Mutia, Sari, Safitri, & Wakum, 2023).

Several countries have implemented strict regulations on cigarette advertising to minimize its harmful effects. Adams (2020) found that restricting cigarette advertising in mass media and social media can reduce adolescent exposure to such advertising and reduce smoking prevalence. Furthermore, interventions such as educational campaigns highlighting the dangers of smoking and engaging adolescents in positive activities can be effective (Nursal, Mutia, Sari, Safitri, & Wakum, 2023).

Indonesia has also enacted the latest cigarette advertising law regulated in Government Regulation (PP) of the Republic of Indonesia Number 28 of 2024 concerning the Implementing Regulations of Law Number 17 of 2023 concerning Health. In the PP there are several articles that regulate cigarette advertising, including Article 446 where anyone who produces, imports, and/or distributes tobacco/cigarette products is prohibited from advertising on digital-based social media. Article 447 contains Control of tobacco product and e-cigarette advertising on commercial websites or electronic applications is permitted provided that it includes a health warning, the text "Prohibited from selling or giving to persons under the age of 21 and pregnant women", does not explain the health benefits, and is not directed at children, adolescents, and/or pregnant women. Cigarette advertisements on broadcast media such as television and radio may only be broadcast between 10:00 PM and 5:00 AM local time. (PP Number 28 of 2024 concerning the Implementing Regulations of Law Number 17 of 2023 concerning Health).

The government regulation, which aims to control cigarette/tobacco product advertising, has become a factor influencing smoking behavior among adolescents. Teenagers are beginning to experience reduced exposure to cigarette advertising, thereby reducing the prevalence of smoking among them.

CONCLUSION

1. The results of the study revealed that 7 respondents (19.4%) were aged 15 years, 15 (41.7%) were aged 16 years, 10 (27.8%) were aged 17 years, and 4 (11.1%) were aged 18 years.
2. Media exposure about smoking among adolescents was highest through television (91.7%) and billboards/large banners on the street (91.7%).

3. The results of the study using the Spearman correlation test yielded a p-value of 0.235 ($p > 0.05$), thus concluding that there is no significant relationship between media exposure and smoking behavior in adolescents.

REFERENCES

- BPS. (2024). Persentase Penduduk Berumur 15 tahun Keatas yang Merokok Tembakau Selama 1 Bulan Terakhir Menurut Provisi (Persen).
- BPS, J. T. (2021). Persentase Penduduk Berumur 5 Tahun Keatas yang Merokok Selama Sebulan Terakhir Menurut Kabupaten/Kota dan Rata-Rata Batang Rokok yang Dihisap Per Minggu (Persen).
- Djannah, S. N., Farkhati, D. U., Safitri, A. R., Sumiyati, Camala, A., Priandini, R. P., . . . Pratama, M. I. (2021). Buku Ajar Ilmu Sosial dan Perilaku. Yogyakarta: Mine.
- Endra, F. (2017). Pedoman Metodologi Penelitian (Statistika Praktis). Sidoarjo: Zifatama Jawa.
- Etrawati, F. (2014). Perilaku Merokok pada Remaja: Kajian Faktor Sosio Psikologis. *Jurnal Ilmu Kesehatan Masyarakat*, 77-85.
- Herawati, A. (2021). Monograf Edukasi Bahaya Merokok bagi Kesehatan Reproduksi pada Remaja. Pekalongan: Nasya Expanding Management.
- Kumboyono, & Wiahstuti, T. A. (2022). Peran Rokok dalam Patomekanisme Penyakit Kardiovaskular: Tinjauan Komprehensif dari Molekuler hingga Sosial. Malang: UB Press.
- Mirawati, Simatupang, I. A., Adi, R., Ma'rifah, S., Agustiawan, Rahmadinie, A., & Agastya, W. D. (2025). Dampak dan Upaya Berhenti Merokok. Banyumas: Wawasan Ilmu.
- Nuradela, N., Kurniawan, A., Ratih, S. P., Wardani, H. E., & Gayatri, R. W. (2023). Hubungan Iklan Rokok dengan Perilaku Merokok Siswa SMA/Sederajat di Kecamatan Lowokwaru Kota Malang. *Sport Science and Health*, 674-685.
- Nursal, D. G., Mutia, Sari, A. P., Safitri, V. K., & Wakum, A. Y. (2023). Membongkar Dinamika Perilaku Merokok pada Remaja. Indramayu: Adanu Abimata.
- Nursal, D. G., Yani, F. F., Machmud, R., Trimam, W., Almasdya, D., & Mutia. (2023). Smoking Cessation pada Remaja Ditinjau dari Budaya. Indramayu: Adanu Abimata.
- Sebayang, S. K., Megatsari, H., Astutik, E., Dewi, D. M., Nadhiroh, S. R., Martini, S., . . . Rosemary, R. (2024). Iklan dan Perdagangan Rokok: Metode Penelitian dan Evaluasi Penerapan Kebijakan. Surabaya: Airlangga University Press.
- Solihin, Nyorong, M., Nur'aini, & Siregar, D. M. (2023). Perilaku Merokok pada Redmaja dan Faktor Penyebabnya di SMA 2 dan SMK 8 Muhammadiyah Tanjungsari Kecamatan Medan Selayang. *Original Article* , 21-30.
- Susanti, N., Syafira, A. C., Febrina, D., & Farashati, J. I. (2024). Gambaran Perilaku Merokok pada Remaja Laki-Laki Usia 15-17 Tahun. *JPKM (Jurnal Profesi Kesehatan Masyarakat)*, 81-89.
- Swarjana, I. K. (2023). Metodologi Penelitian Kesehatan. Yogyakarta: Andi Offset.
- Syam, A. M., Zali, M., Siregar, P. A., Ahsan, A., Apriliani, & Siregar, S. F. (2020). Densitas Retail Rokok dan Generasi Muda. Indramayu: Adanu Abimata.
- Wasis. (2008). Pedoman Riset Praktis untuk Profesi Perawat. Jakarta : EGC.