

**Description of Characteristics, Knowledge, and Behavior Towards the Hazards of Conventional Tobacco Cigarettes Among Cleaning Service and Security Workers Who Smoke**

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**Article Information**

**Submitted: 09 December 2025**

**Accepted: 19 December 2025**

**Publish: 30 December 2025**

**Keyword:** Tobacco; Knowledge; Behavior; Smokers; Carcinogenic;

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**Year: 2025**

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**Abstract**

**Introduction:** Conventional tobacco cigarette smoking remains a major public health concern, particularly among occupational groups exposed to high work-related stress, such as cleaning service and security workers. Limited awareness of smoking-related health risks may contribute to continued smoking behavior and increased disease burden. **Objective:** This study aimed to describe the characteristics, knowledge levels, and smoking behaviors related to the dangers of conventional tobacco cigarettes among cleaning service and security workers at the Faculty of Medicine, University X, Jakarta. **Method:** This descriptive cross-sectional study was conducted in July 2023 among cleaning service and security personnel who were active smokers. Data were collected using a structured questionnaire covering demographic characteristics, knowledge of smoking hazards, and smoking behaviors. Data were analyzed using descriptive statistics. **Result and Discussion:** The results showed that 62% (31 respondents) had good knowledge regarding the dangers of conventional tobacco cigarettes, while 38% (19 respondents) had sufficient knowledge, and none had poor knowledge. In terms of smoking behavior, 38% of respondents always smoked, 24% often smoked, 34% sometimes smoked, and 4% never smoked in certain situations. Despite relatively adequate knowledge, risky smoking behaviors remained common. **Conclusion:** Although respondents generally had adequate knowledge, risky smoking behaviors persisted, indicating the need for targeted health education and smoking cessation programs for this occupational group.

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### **Introduction**

The World Health Organization (WHO) has revealed that tobacco contains 4,000 chemicals, 200 of which are carcinogenic (can cause cancer). These substances come from the smoke produced by active smokers that enters the smoker's lungs. Passive smokers also experience the same thing, where they are exposed to various harmful substances from cigarette smoke, such as carbon monoxide, benzopyrene, and ammonia (Organization, 2025). Many people feel the health risks of smoking, and the effects are well known. Numerous studies have shown that smoking causes various diseases, including heart disease, blood vessel disease, lung cancer, oral cancer, laryngeal cancer, high blood pressure, impotence, pregnancy problems, and fetal abnormalities (Ardiyanti et al., 2020); (Pakpahan & Hartati, 2022)

Studies show a 36.3% increase in prevalence among smokers over the age of 15. The prevalence of smoking in Indonesia is 34.8% and 67% of the smoking population is male. Females have also experienced a 5-fold increase since 1999, from 1.7% to 6.7% in 2013 (Sulastri & Rindu, 2019). When viewed by age group, in 2013, the percentage of smokers increased with age, reaching its highest level in the 30-34 age group before declining in subsequent age groups. The age distribution of smokers is as follows: 0.3% in 1995 to 3.7% in 2013, with the highest rate in the youngest age group, namely 10 to 14 years. It can be said that the smoking problem has increased by up to 12-fold in the last 19 years. In 2013, there were 56,860,457 active male smokers and 1,890,135 active female smokers, or approximately 58,750,591 active smokers aged 10 years and older. The number of smokers in the 25-29 age group was 7,785,730, of which 7,641,892 were male smokers aged 25-29, and 252,273 were female smokers aged 45-49 (Jatmika, Maulana, & Kuntoro, 2018); (SIMAMORA, 2020)

With a smoking prevalence of 36.1%, Indonesia is the country with the highest number of smokers in the world after China and India. Tobacco production in Indonesia reached 302.5 billion cigarettes in 2012, with an estimated population of 259 million. This means that in Indonesia, there are 1,166 cigarettes in every mouth, including newborn babies. The WHO reports that more than 200,000 people die each year in Indonesia from diseases caused by tobacco consumption. Tobacco can cause cancer, heart disease, impotence, blood disorders, anemia, chronic bronchitis, and pregnancy problems. Tobacco is also one of the six leading causes of death worldwide (Ananda, Th, & Maryani, 2019)

Based on the above background, the researcher seeks to determine the characteristics, knowledge, and behavioral levels regarding the dangers of conventional tobacco cigarettes among cleaning service and security workers who smoke at the Faculty of Medicine, University X, Jakarta, July 2023. This study aimed to describe the characteristics, knowledge, and behaviors related to the hazards of conventional tobacco cigarette smoking among cleaning service and security workers at the Faculty of Medicine, University X Jakarta, in July 2023.

### **Method**

This research is descriptive. The author will describe and report the current situation based on quantitative data collection, so that a general conclusion can be drawn. The research sample was collected at the Faculty of Medicine, University X, by distributing questionnaires to Cleaning Service and Security workers in July 2023. Sample selection

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was conducted using the total sampling technique, with a sample of 50 participants. Sample selection was carried out using a total sampling technique with a sample size of 50 participants who met the inclusion criteria, namely: cleaning service and security workers at the Faculty of Medicine, University X who were actively working; willing to be research respondents by filling out the questionnaire using a questionnaire sheet; workers were present at the time of sample collection at the Faculty of Medicine, University X. While the exclusion criteria were: cleaning service and security workers at the Faculty of Medicine, University X who were no longer actively working; Cleaning Service and Security workers at the Faculty of Medicine, University X who were unwilling to fill out the questionnaire.

The data used in this study are primary, that is, data obtained directly from the research subjects through observation, interviews, and questionnaires. In this study, the researchers used primary data from questionnaires completed by a sample of cleaning service and security workers at the Faculty of Medicine, University X. The data were collected by administering a questionnaire to the entire population. A questionnaire is a list of questions that respondents fill out to obtain written information. The questionnaires in this study will be distributed on printed sheets. The questions used are closed-ended dichotomies (yes/no for knowledge, and a Likert scale of 1-4 for behavior).

The data obtained will be processed using SPSS version 26 statistical software, and univariate data analysis will be performed. Univariate analysis is the analysis of each variable (characteristics, knowledge, and behavior) by summarizing the data and presenting it in tabular form. Therefore, from this analysis, an overview of the characteristics, knowledge, and behavior regarding the dangers of conventional cigarettes is obtained among cleaning service and security workers who smoke at the Faculty of Medicine, University X Jakarta

## **Result and Discussion**

### **1. Result**

The characteristics of the respondents in this study were determined by age, gender, occupation, and highest level of education. The following describes the characteristics of 50 respondents who work in the Cleaning Service and Security Department at the Faculty of Medicine, University X, Jakarta.

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**Table 1**  
Characteristics of Gender and Age of Cleaning Service and Security Workers at University X Jakarta

	Characteristic (n=50)	Frequency (f)	Percentage (%)
<b>Gender</b>	Male	42	84
	Female	8	16
<b>Age</b>	15-20 Years	2	4
	21-25 Years	13	26
	26-30 Years	9	18
	31-35 Years	6	10
	36-40 Years	10	20
	41-45 Years	3	6
	46-50 Years	6	14
	>50 Years	1	2
<b>Job</b>	Cleaning Service	30	60
	Security	20	40
<b>Education</b>	Senior High School	29	58
	Vocational High School	21	42

**Table 2**  
Characteristics of Smoking Habits of Cleaning Service and Security Workers at University X Jakarta

	Characteristic (n=50)	Frequency (f)	Percentage (%)
<b>Smoking Habit</b>	Yes	33	66
	No	17	34
<b>Number of Cigarettes</b>	No Smoking	17	34
	1-10 cigarettes/day	19	38
	11-20 cigarettes/day	12	24
	>21 cigarettes/day	2	10

**Table 3**  
Frequency Distribution of Respondents' Knowledge Level regarding the Dangers of Conventional Tobacco Cigarettes

Category	Interval	% Interval	Frequency
Good	12-17	58-100	31
Enough	6-11	27-57	19
Poor	0-5	0-26	0
<b>Total Number of Frequencies</b>			50

**Table 4**  
Frequency Distribution of Cleaning Service and Security Workers' Behavior Regarding the Dangers of Conventional Cigarettes

Category	Interval	Frequency	Percentage (%)
Always	49-60	19	38
Often	39-48	12	24
Sometimes	27-38	17	34
Never	15-26	2	4
<b>Total Number of Frequencies</b>		50	100

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### **2. Discussion**

#### **Respondent Characteristics and Smoking Patterns**

The majority of respondents in this study were male (84%) and in the young to middle adult age group (21–40 years old, 64%). This finding aligns with the WHO Global Adult Tobacco Survey 2022 report, which stated that the highest smoking prevalence globally is still dominated by men of productive age, especially those aged 25–49 years (*Global Adult Tobacco Survey (GATS) Indonesia Report 2021*, 2024). Cleaning service and security workers generally represent occupational groups with high physical and psychosocial exposure, so smoking is often considered a coping mechanism for work stress. A total of 66% of respondents were active smokers, with 38% smoking 1–10 cigarettes/day and 34% non-smokers. This proportion is consistent with a study by (Vacarezza et al., 2024), which found that workers with secondary education and physical work have a higher smoking prevalence than those in the professional sector. Education also influences smoking habits. In this study, 58% of respondents had a high school education. A recent study by (Wells & Östberg, 2021) showed that low education levels were significantly associated with the risk of becoming an active smoker and low success rates of quitting smoking. Low education levels impacted the ability to understand health information and the long-term risks of tobacco use.

#### **Level of Knowledge about the Dangers of Smoking**

Research data shows that 62% of respondents had a good level of knowledge, while 38% were in the fair category, and none were in the poor category. This indicates that information about the dangers of smoking is actually known to most workers, although knowledge does not always translate into behavioral changes. This finding aligns with the 2021 GATS Indonesia, which showed that although 90% of smokers know that smoking causes serious diseases, this knowledge is not strong enough to reduce smoking prevalence. This is supported by research by (Ananda et al., 2019) which reported that high levels of knowledge only influence smoking cessation intentions if accompanied by intrinsic motivation and a supportive work environment. Workers' knowledge about the dangers of smoking may also be influenced by the healthcare institution environment (Faculty of Medicine). A study by (Huriah & Rahman, 2021) showed that workers in healthcare institutions tend to have better knowledge but still engage in smoking due to social norms and exposure to work stress.

#### **Smoking Behavior of Cleaning Service and Security Workers**

Smoking behavior in this study varied, with the following distributions: always (19 respondents), often (12 respondents), sometimes (17 respondents), and never (2 respondents). This pattern indicates that although most respondents had good knowledge of the dangers of smoking, smoking behavior remained relatively high. This discrepancy between knowledge and behavior aligns with the findings of (Huriah & Rahman, 2021; Ma, Shive, Toubbeh, Tan, & Zhao, 2003), who stated that smoking behavior is more influenced by social environmental factors, stress, and long-standing habits than by knowledge alone. In the context of service workers (cleaning and security), their jobs tend to be physically demanding, involve long working hours, and entail environmental stress—factors that have been linked to increased tobacco use in (Vacarezza et al., 2024) study. The normalization of smoking in the workplace, particularly among men, is also a

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key factor. A study in Southeast Asia by (Ma et al., 2003) found that having coworkers who smoke increases a person's likelihood of smoking by up to 1.8 times. This is relevant to workplace conditions, where workers commonly smoke during breaks with colleagues.

**Interpretation of Knowledge and Behavior**

Although some respondents (62%) had good knowledge, this was not fully reflected in their behavior. A combination of educational factors, job stress, social environment, and nicotine dependence may explain this phenomenon. A study by (Qawasmeh et al., 2020) confirmed that health knowledge contributes little to behavior change if behavioral interventions, support for smoke-free area policies, and smoking cessation programs do not accompany it. The study's finding that smoking behavior remains high despite good knowledge is also consistent with research by (Efendi, Aidah, Has, Lindsayani, & Reisenhofer, 2019) in Indonesia, which showed that knowledge does not always determine behavior due to habitual factors and social influences. Therefore, effective interventions must include education, support for smoking cessation, and workplace regulation—not simply increasing knowledge.

**Conclusion**

This study shows that cleaning service and security workers at the Faculty of Medicine, University of X, Jakarta, are predominantly productive-age men with secondary education, and 66% of them are active smokers. Although the majority of respondents have a good level of knowledge about the dangers of conventional cigarettes (62%), smoking behavior remains high, especially among those who started smoking at a young age and have a daily smoking habit. This persistently high smoking behavior is influenced by occupational factors, social environment, and ingrained habits, so that good knowledge does not necessarily translate into smoking cessation behavior.

These findings emphasize that education alone is not enough to change behavior, and that comprehensive efforts are needed, including stronger smoke-free policies, behavior-based interventions, and support for smoking cessation in the workplace. Overall, this study emphasizes the importance of a multidimensional approach to reducing smoking behavior among non-medical workers, particularly through a combination of education, regulation, and ongoing cessation support.

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**Reference**

Ananda, Y., Th, EM, & Maryani, T. (2019). *Hubungan tingkat pengetahuan dengan tingkat kecemasan remaja dalam menghadapi menarche pada siswi kelas V dan VI di SD Negeri 1 Ceper Klaten tahun 2019.*

Ardiyanti, Putri Dwi, Harzani, Septia, Rahmah, Syifa Aulia, Putri, Zalfa Maharani, Putri, Zalma Nur Khadijah, & Mustakim, Mustakim. (2020). *Gambaran Pengetahuan Perilaku Merokok di Masa Pandemi COVID-19 pada Kalangan Remaja Laki-laki di Wilayah Jabodetabek Tahun 2020. Jurnal Ilmu Kesehatan Indonesia (JIKSI), 1(2).*

Efendi, Ferry, Aidah, Fitriana Nur, Has, Eka Mishbahatul M., Lindayani, Linlin, & Reisenhofer, Sonia. (2019). *Determinants of smoking behavior among young males in rural Indonesia. International Journal of Adolescent Medicine and Health, 33(5).* <https://doi.org/10.1515/IJAMH-2019-0040>

*Global Adult Tobacco Survey (GATS) Indonesia Report 2021.* (2024).

Huriah, Titih, & Rahman, Arif. (2021). *Smoking Behavior on Health Workers in Indonesia: A Phenomenological Study. Proceedings of the 4th International Conference on Sustainable Innovation 2020–Health Science and Nursing (ICoSIHSN 2020), 33.* <https://doi.org/10.2991/AHSR.K.210115.106>

Jatmika, Septian Emma Dwi, Maulana, M., & Kuntoro, Martini S. (2018). Buku Ajar Pengendalian Tembakau. *Yogyakarta: Penerbit K-Media.*

Ma, Grace X., Shive, Steven E., Toubbeh, Jamil, Tan, Yin, & Zhao, Shanyang. (2003). Social Influences and Smoking Behaviors among Four Asian American Subgroups. *Californian Journal of Health Promotion, 1(3), 123–134.* <https://doi.org/10.32398/CJHP.V1I3.523>

Organization, World Health. (2025). *Noncommunicable diseases progress monitor 2025.* World Health Organization.

Pakpahan, Jun Edy Samosir, & Hartati, Bintang. (2022). *Hubungan dislipidemia dengan kejadian stroke.*

Qawasmeh, Majdi Al, Aldabbour, Belal, Momani, Aiman, Obiedat, Deema, Alhayek, Kefah, Kofahi, Raid, Yassin, Ahmed, & El-Salem, Khalid. (2020). *Epidemiology, Risk Factors, and Predictors of Disability in a Cohort of Jordanian Patients with the First Ischemic Stroke. Stroke Research and Treatment, 2020, 1–9.* <https://doi.org/10.1155/2020/1920583>

SIMAMORA, AGNES M. (2020). *SKRIPSI LITERATURE REVIEW: HUBUNGAN KARAKTERISTIK PERAWAT DENGAN PENGETAHUAN KEGAWAT DARURATAN KLIEN PERILAKU KEKERASAN.*

Sulastri, Sulastri, & Rindu, Rindu. (2019). Perbedaan Pengetahuan dan Sikap Remaja Sebelum dan Sesudah Promosi kesehatan Tentang Dampak Rokok. *Jurnal Ilmu Kesehatan Masyarakat, 8(02), 61–72.* <https://doi.org/10.33221/JIKM.V8I02.261>

Vacarezza, C., Araneda, J., Gonzalez, P., Arteaga, O., Marcelain, K., Castellon, E. A., ... & Owen, G. I. (2024). *A snapshot of cancer in Chile II: an update on research, strategies and analytical frameworks for equity, innovation and national development. Biological Research, 57(1), 95.*

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Wells, Laura, & Östberg, Viveca. (2021). [How do educational disparities in smoking develop during early life? A Swedish longitudinal study. SSM - Population Health, 15, 100859. https://doi.org/10.1016/J.SSMPH.2021.100859](#)