

## **Knowledge, Attitude, and Practice Towards to Sexually Transmitted Disease Among Parking Attendants Around Semarang, Indonesia**

**Puguh Riyanto<sup>1</sup>, Yosep Ferdinand Rahmat Sugianto<sup>2</sup>, Myrna Adiwijaya<sup>3</sup>, Felicia Yora Afrilia<sup>4\*</sup>, Dila Muflikhy Putri<sup>5</sup>, Yuniar Dian Pramitasari<sup>6</sup>, Nurul Nisa Ulfa<sup>7</sup>**

Diponegoro University, Indonesia<sup>1,2,3,4,5,6,7</sup>

Email: dvekulkel1@gmail.com, dvekulkel2@gmail.com, xpramitasarix@gmail.com, yorafrilia@gmail.com, dilamuflikhy03@gmail.com, nurulnisaulfa15@gmail.com

---

### **Abstract**

Sexually transmitted diseases (STDs) pose a significant public health challenge worldwide, with increasing prevalence and limited awareness among vulnerable populations. Parking attendants, often working in the informal sector with lower educational backgrounds, may be particularly at risk due to gaps in knowledge and access to health education. This study aims to assess the knowledge, attitudes, and practices (KAP) regarding STDs among parking attendants in Semarang, Indonesia. A cross-sectional analytical design was employed involving 50 parking attendants. A structured KAP questionnaire with 30 items was administered to evaluate participants' understanding of STDs, their attitudes toward prevention, and their health-related practices. Data were analyzed using descriptive and analytic statistics. The findings indicate that parking attendants possess moderate knowledge about STDs, generally positive attitudes toward prevention, but inconsistent practices related to safe behaviors. We found that increased knowledge correlates to better attitudes and behaviors towards STDs. While some participants demonstrate awareness of STD prevention methods, significant gaps in knowledge and practice remain. The study highlights the need for targeted educational interventions to enhance KAP levels among parking attendants. Addressing these gaps is crucial for improving health outcomes and reducing the risk of STDs in this vulnerable population. Comprehensive public health strategies should be developed to promote awareness and encourage safe practices within this occupational group.

---

**Keywords:** STDs, parking attendants, public health, health education

---

### **INTRODUCTION**

Sexually transmitted diseases (STDs) are a significant public health concern worldwide, with their prevalence steadily increasing in recent years. According to the

World Health Organization (WHO), over 1 million STDs are acquired globally every day, highlighting the urgent need for effective prevention and management strategies to address this growing burden (Fu et al., 2022; Peters et al., 2022; Sinka, 2024; Zheng et al., 2022). Education has been identified as one of the key determinants of STD risk, with evidence showing that individuals with higher levels of education are less likely to contract STDs (Annang et al., 2010; Epstein, 2020; Kiecolt et al., 2021; Novacek et al., 2022). This underscores the importance of targeted interventions for populations with limited educational backgrounds, who may be more vulnerable to these infections.

Parking attendants represent a unique occupational group that is particularly relevant in Southeast Asia, including Indonesia. Their primary responsibilities include regulating, supervising, and managing parked vehicles. Unlike formal professions, parking attendants typically work in the informal sector, which is characterized by a lack of structured training or skill requirements (Novianto et al., 2024; “Sustainable Development Goals: Parking Attendants’ Decent Work Challenges and Policies,” 2025). In Indonesia, many parking attendants come from low-education backgrounds due to the minimal qualifications required for this job. This demographic profile places them at a potential disadvantage in terms of health awareness and access to preventive measures, making them a critical population for public health research.

The control and prevention of STDs can be significantly enhanced through improved knowledge, attitudes, and practices (KAP). The KAP theory posits that changes in human health behavior occur through a sequential process: acquiring accurate knowledge, forming positive attitudes, and adopting healthy practices. Numerous studies have demonstrated that individuals with higher KAP levels are better equipped to prevent and manage illnesses effectively. For instance, those with sufficient knowledge about STDs are more likely to practice safe behaviors such as condom use and seek timely medical care. Conversely, inadequate KAP levels have been associated with poor disease prevention and management outcomes (Alsaleh et al., 2023). Despite this established relationship, there remains a gap in understanding how specific occupational groups—particularly those in the informal sector—fare in terms of their KAP towards STDs.

To date, there has been limited research exploring how professions influence KAP levels related to STDs, especially among workers in the informal sector. Most existing studies have focused on students or general populations, leaving a significant gap in understanding the unique challenges faced by informal workers such as parking attendants. This study seeks to address this gap by examining the knowledge, attitudes, and practices of parking attendants regarding STDs. Parking attendants represent an under-researched yet critical group due to their potential exposure to risky environments and limited access to health education programs.

A study by WHO (2020) indicated that education is a key factor in reducing the risk of contracting sexually transmitted diseases (STDs), as individuals with higher levels of education tend to have lower risks. Another study by Agustin et al. (2021) explored the relationship between knowledge, attitudes, and practices (KAP) regarding STDs among informal sector workers in Indonesia and found that low awareness about STDs increases vulnerability to infections. The novelty of this research lies in its focus on parking attendants, a group that has been under-researched in terms of their KAP regarding STDs. This study aims to fill this gap by

examining the knowledge, attitudes, and practices of parking attendants in Indonesia, considering their limited access to health education and resources. This research is expected to provide valuable information to design targeted health interventions for workers in the informal sector.

The objective of this study is to explore the knowledge, attitudes, and practices (KAP) of parking attendants regarding sexually transmitted diseases (STDs). This study aims to understand how educational background and employment in the informal sector influence STD prevention behaviors among parking attendants. The benefits of this research are to provide insights for policymakers and health practitioners on the need for more targeted interventions for groups with limited access to formal health education, as well as to enhance STD prevention efforts among at-risk populations.

## **METHOD**

This study employed a cross-sectional analytical design involving a total sampling method with 50 parking attendants around Semarang, Central Java, Indonesia. A KAP questionnaire containing 30 items was administered to gather relevant data. This structured questionnaire is divided into three sections, with 10 questions each focused on knowledge, attitudes, and practices related to sexually transmitted diseases (STDs). The knowledge section assessed participants' understanding of essential concepts such as definitions of STDs, recognition of symptoms, and awareness of prevention strategies. The attitudes section focused on participants' perceptions of risk associated with STDs and any existing stigma surrounding these infections. Finally, the practices section evaluated behaviors related to STD prevention, including condom use and participation in health screening programs. Statistical analysis included descriptive statistics, percentages of participants with more than 70% score in each category, where 70% is the score limit for satisfactory results, and correlational statistics using Pearson correlation.

## **RESULTS AND DISCUSSION**

The results of this study are shown in Table 1 and Figure 1. The analysis of knowledge levels among the 50 parking attendants revealed a wide range of scores, with a minimum of 1.0 and a maximum of 10.0. The mean knowledge score was 5.9, indicating that participants had a moderate understanding of sexually transmitted diseases (STDs). The standard deviation of 1.9 suggests significant variability in knowledge levels within the group, highlighting that while some attendants possessed a solid grasp of STD-related information, others demonstrated considerable gaps in their understanding. There are 17 respondents with scores more than or equal to 7.0 in the knowledge level.

In terms of attitudes towards STDs, the scores ranged from a minimum of 2.0 to a maximum of 10.0, with an average score of 6.2. This suggests that the parking attendants generally held positive attitudes regarding STDs and their prevention. The standard deviation for attitudes was 1.7, indicating moderate variability among participants' perceptions and beliefs about STDs. There are 20 respondents with scores more than or equal to 7.0 in the attitude level.

Regarding practices related to STD prevention, the scores ranged from 2.0 to 9.0, with an average practice score of 6.0. The standard deviation for practice scores

was 1.6, suggesting that while some parking attendants consistently employed safe practices such as condom use and regular health screenings, others did not adhere to these preventive measures as reliably. There are 20 respondents with scores more than or equal to 7.0 in the practice level.

As knowledge forms the basis of attitude and practice, we conducted a Pearson correlation analysis to examine the relationship between attitude and practice based on knowledge levels. We found a strong positive correlation ( $p < 0.0001$ ;  $r = 0.7621$ ) between knowledge and attitude, as well as a moderate positive correlation ( $p = 0.0004$ ;  $r = 0.4789$ ) between knowledge and practice. The graphs of the correlation analysis are presented in Figures 2 and 3.

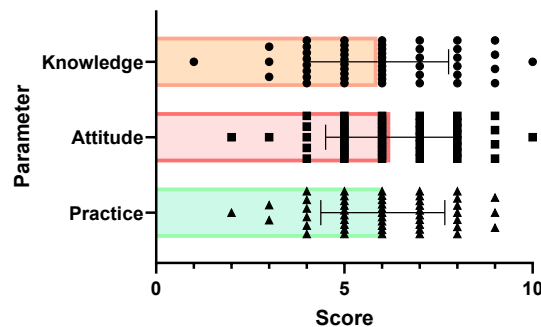


Figure 1. Bar chart of the questionnaire data.

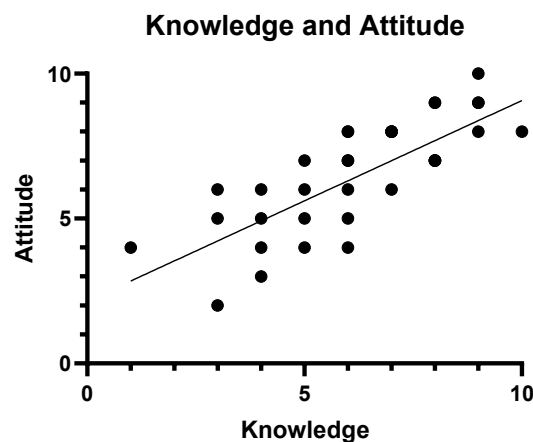
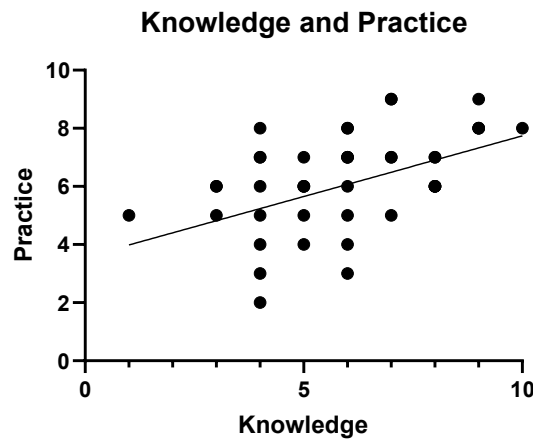


Figure 2. Correlation between knowledge and attitude towards STDs.



**Figure 3. Correlation between knowledge and practice towards STDs.**

**Table 1. Results of the KAP questionnaire.**

Statistic	Knowledge	Attitude	Practice
Min	1.0	2.0	2.0
Median	6.0	6.0	6.0
Max	10.0	10.0	9.0
Mean	5.9	6.2	6.0
SD	1.9	1.7	1.6

**Source: processed data**

## Discussion

The study found that parking attendants exhibit a moderate level of knowledge about STDs (mean score: 5.9/10), indicating foundational awareness but persistent gaps in critical areas such as symptom recognition and transmission routes. This aligns with findings from a study on women of reproductive age in Jakarta, where 84% reported good knowledge but still demonstrated gaps in translating awareness into preventive practices.<sup>[6]</sup> The lower knowledge scores in this study compared to urban women may reflect disparities in educational access and health literacy, as parking attendants in the informal sector often lack formal education and structured health programs. Similar challenges were observed among street children in Jakarta, where despite some participants having adequate knowledge, risky behaviors like condomless sex persisted. This suggests that knowledge alone is insufficient without targeted education addressing contextual barriers in marginalized groups.

Participants demonstrated generally positive attitudes (mean score: 6.2/10), recognizing the importance of preventive measures and open communication. This mirrors findings from a Kenyan study where youths acknowledged the value of condom use but faced stigma-related barriers to testing and disclosure (Caminada et al., 2023). Notably, the correlation between knowledge and attitude observed here (strong positive relationship) is consistent with research on Indonesian women, where better knowledge predicted more favorable attitudes (Winarto et al., 2023).

The practice scores revealed a mean of 6.0, indicating that while some parking attendants engage in safe practices related to STD prevention, there remains room for improvement. These findings is parallel to a previous study in Jakarta among street children and informal sector workers, where socioeconomic constraints (e.g.,

poverty, lack of access to condoms) hindered consistent preventive practices despite moderate knowledge (Caminada et al., 2023).

The correlation between knowledge of STDs and both attitudes and practices demonstrated a positive relationship in this study. This indicates that individuals with greater knowledge about STDs are more likely to develop positive attitudes toward these diseases and adopt good practices, such as taking preventive measures or seeking care at a health center if they contract an STD. These findings align with a previous study by Wulandari et al., which showed that students with higher levels of STD knowledge were more likely to utilize adolescent information counseling centers for prevention and assistance related to STDs (Wulandari, 2015). Similar findings are also found in a study of Malaysian university students linked higher education to better practices (Folasayo et al., 2017). This underscores that education of STDs are important as the basis of increasing attitudes and practices towards STDs.

## CONCLUSION

The study highlights that parking attendants in Semarang have moderate knowledge, generally positive attitudes, and inconsistent practices regarding sexually transmitted diseases (STDs). While many participants recognize the importance of prevention, gaps in knowledge, stigma, and misconceptions remain barriers to effective communication and health-seeking behaviors. These findings emphasize the need for targeted educational programs and public health strategies to improve awareness, attitudes, and preventive behaviours in this vulnerable occupational group.

## REFERENCES

- Alsaleh, F. M., Elzain, M., Alsairafi, Z. K., & Naser, A. Y. (2023). Perceived knowledge, attitude, and practices (KAP) and fear toward COVID-19 among patients with diabetes attending primary healthcare centers in Kuwait. *Int J Environ Res Public Health*, 20(3), 2369.
- Annang, L., Walsemann, K. M., Maitra, D., & Kerr, J. C. (2010). Does education matter? Examining racial differences in the association between education and STI diagnosis among Black and White young adult females in the U.S. *Public Health Rep*, 125(Suppl 4), 110–121.
- Caminada, S., Carrani, F. M., Simonelli, M., Crateri, S., Musyoka, J. M., & Muga, R. (2023). Knowledge, attitudes and practices regarding HIV/AIDS and STIs among youths and key populations in informal settlements of Nairobi, Kenya. *Ann Dell'Istituto Super Sanità*, 59(1). <https://annali.iss.it/index.php/anna/article/view/1532>
- Epstein, T. (2020). The Racial Divide: Differences in White and Black Students' Interpretations of U.S. History. In *Interpreting National History*. <https://doi.org/10.4324/9780203890967-9>
- Folasayo, A. T., Oluwasegun, A. J., Samsudin, S., Saudi, S. N. S., Osman, M., & Hamat, R. A. (2017). Assessing the knowledge level, attitudes, risky behaviors

- and preventive practices on sexually transmitted diseases among university students as future healthcare providers in the central zone of Malaysia: A cross-sectional study. *Int J Environ Res Public Health*, 14(2), 159.
- Fu, L., Sun, Y., Han, M., Wang, B., Xiao, F., Zhou, Y., Gao, Y., Fitzpatrick, T., Yuan, T., Li, P., Zhan, Y., Lu, Y., Luo, G., Duan, J., Hong, Z., Fairley, C. K., Zhang, T., Zhao, J., & Zou, H. (2022). Incidence Trends of Five Common Sexually Transmitted Infections Excluding HIV From 1990 to 2019 at the Global, Regional, and National Levels: Results From the Global Burden of Disease Study 2019. *Frontiers in Medicine*, 9. <https://doi.org/10.3389/fmed.2022.851635>
- Kiecolt, K. J., Byrd, W. C., Momplaisir, H., & Hughes, M. (2021). *Racial Identity Among Blacks and Whites in the U.S.* [https://doi.org/10.1007/978-3-030-76966-6\\_4](https://doi.org/10.1007/978-3-030-76966-6_4)
- Novacek, D. M., Wynn, J. K., Gabrielian, S., Glynn, S. M., Hellemann, G., Horan, W. P., Kern, R. S., Lee, J., Marder, S. R., Sugar, C., & Green, M. F. (2022). Examining racial differences in community integration between black and white homeless veterans. *Psychiatry Research*, 308. <https://doi.org/10.1016/j.psychres.2021.114385>
- Novianto, A., Basuki, A., & Siswono, A. (2024). Improving parking attendants' competency to develop professional staff in the parking sector. *Abdimas J Pengabdian Masy Univ Merdeka Malang*, 9(1), 134–142.
- Peters, R. P. H., Chico, R. M., Rowley, J., & Low, N. (2022). Estimating the global burden of sexually transmitted infections. In *The Lancet Infectious Diseases* (Vol. 22, Issue 8). [https://doi.org/10.1016/S1473-3099\(22\)00415-7](https://doi.org/10.1016/S1473-3099(22)00415-7)
- Sinka, K. (2024). The global burden of sexually transmitted infections. *Clin Dermatol*, 42(2), 110–118.
- Sustainable Development Goals: Parking attendants' decent work challenges and policies. (2025). *Community Services: Sustainability Development*. <https://swastikajournal.com/index.php/cssdev/article/view/39>
- Winarto, H., Habiburrahman, M., Kusuma, F., Nuryanto, K. H., Anggraeni, T. D., & Utami, T. W. (2023). Knowledge, attitude, and practice towards sexually transmitted infections among women of reproductive age in an urban community health centre in Indonesia. *Open Public Health J*, 16(1). <http://www.scopus.com/inward/record.url?scp=85149123625&partnerID=8YFLogxK>
- Wulandari, S. (2015). Hubungan pengetahuan, sikap dan perilaku pencegahan penyakit menular seksual (PMS) dan HIV/AIDS dengan pemanfaatan pusat informasi konseling remaja (PIK-R) pada remaja SMKN Tandun Kabupaten Rokan Hulu. *Matern Neonatal*, 2(1), 10–22.
- Zheng, Y., Yu, Q., Lin, Y., Zhou, Y., Lan, L., Yang, S., & Wu, J. (2022). Global burden and trends of sexually transmitted infections from 1990 to 2019: an

observational trend study. *The Lancet Infectious Diseases*, 22(4).  
[https://doi.org/10.1016/S1473-3099\(21\)00448-5](https://doi.org/10.1016/S1473-3099(21)00448-5)

**Copyright holders: (2025)**  
**First publication right:**  
**AJHS - Asian Journal of Healthy and Science**



**This article is licensed under a Creative Commons Attribution-ShareAlike 4.0 International**