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THE CORRELATION BETWEEN KNOWLEDGE, ATTITUDE, AND COMPLIANCE WITH THE USE OF PERSONAL PROTECTIVE EQUIPMENT AMONG CLEANING SERVICE STAFF IN CITO LABORATORY

HUBUNGAN PENGETAHUAN DAN SIKAP PETUGAS CLEANING SERVICE TERHADAP KEPATUHAN PEMAKAIAN ALAT PELINDUNG DIRI DI LABORATORIUM CITO

Herwin Rizky Nastiti[1], Diah Prihatiningsih[2]*, Ni Komang Sukra Andini[3]
[1]Applied Bachelor's Degree Program in Medical Laboratory Technology, Wira Medika Bali Collage of Health Sciences, Email: herwin.kiky@gmail.com
[2]Applied Bachelor's Degree Program in Medical Laboratory Technology, Wira Medika Bali Collage of Health Sciences, Email : diahciprik@gmail.com
[3]Bachelor of Nursing, Wira Medika Bali Collage of Health Sciences, Email : herwin.kiky@gmail.com

*email Koresponden: diahciprik@gmail.com

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Abstract

Cleaning service staff working in laboratories are at high risk of exposure to hazardous materials. The use of personal protective equipment (PPE) is a crucial step in preventing occupational accidents. However, the level of compliance with PPE usage varies and is influenced by the knowledge and attitude of the staff. This issue highlights the need to understand the relationship between the knowledge and attitudes of cleaning service staff and their compliance with the use of PPE. This study employed an analytical design with a cross-sectional approach. A total of 58 cleaning service staff participated as respondents, selected through total sampling. Data were collected using a structured questionnaire and analyzed using the chi-square test. The results showed that 60.3% of respondents had good knowledge regarding the use of PPE, while 73% had a positive attitude toward its usage. The chi-square test revealed a p-value of 0.03 (<0.05), indicating a significant relationship between attitude and compliance with PPE usage among cleaning service staff. The chi-square test for the relationship between knowledge and compliance yielded a p-value of 0.01 (<0.05), indicating a significant relationship between knowledge and compliance. The findings indicate that the knowledge of cleaning service staff positively correlates with their compliance in using PPE. Staff members with good knowledge were more likely to comply with PPE usage. Adequate knowledge enables staff to understand laboratory risks and the benefits of PPE in preventing exposure to hazardous materials, thereby encouraging safer behavior, promoting

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communication among staff, reminding one another, and embedding safety values into daily work routines.
Keywords : Knowledge Level, Attitude, Compliance, PPE

Abstrak

Petugas Cleaning Service di laboratorium berisiko tinggi terpapar bahan berbahaya. Penggunaan APD menjadi langkah penting untuk mencegah kecelakaan kerja. Namun, tingkat kepatuhan masih bervariasi dan dipengaruhi oleh faktor pengetahuan dan sikap petugas. Permasalahan tersebut menunjukkan perlu didapatkan informasi tentang hubungan antara pengetahuan dan sikap petugas cleaning service terhadap kepatuhan pemakaian alat pelindung diri. Penelitian ini menggunakan desain analitik dengan pendekatan cross-sectional. Jumlah responden sebanyak 58 orang petugas cleaning service yang diambil menggunakan total sampling. Data dikumpulkan melalui kuesioner terstruktur dan dianalisis menggunakan uji chi-square. Berdasarkan hasil penelitian diketahui bahwa pengetahuan Cleaning Service terhadap pemakaian APD memiliki pengetahuan yang baik ditunjukkan dengan jumlah 65 responden atau 60.3 %. Sikap positif Cleaning Service terhadap pemakaian APD sebanyak 42 responden atau 73%. Analisis menggunakanl uji Chil Square diketahuil nilai (p) Valuel = 0.03l < p = 0.05l Ha diterimal yangl berarti ada hubunganl antara sikapl dengan kepatuhanl Cleaning Service terhadap pemakaian APD. Pada uji Chi Square hubungan pengetahuan dengan kepatuhan diketahui nilai (p) value = 0.01 hasil ini <p = 0.05 Ha yang berati ada hubungan pengetahuan dengan kepatuhan Cleaning Service terhadap pemakaian APD. Hasil penelitian menunjukkan bahwa pengetahuan petugas Cleaning Service berkolerasi positif denganl kepatuhan penggunaanl alat pelindungl diri. Sebagianl besar petugasl dengan pengetahuanl baik cenderungl patuh dalaml penggunaan lAPD. Pengetahuan yangl baik memungkinkanl petugas memahamil risiko kerjal di laboratoriuml dan manfaatl APD dalaml mencegah paparan bahan berbahaya, sehingga mendorong perilaku yang lebih aman, mendorong komunikasi antar petugas, saling mengingatkan, serta menyisipkan nilai-nilai keselamatan dalam rutinitas kerja sehari-hari.

Kata Kunci : Tingkat Pengetahuan, Sikap, Kepatuhan, APD

1. INTRODUCTION

Health laboratories are essential facilities that handle a wide range of potential hazards. These hazards can include dangerous chemicals, pathogenic microorganisms, and infectious medical waste, all of which pose a significant risk to the health of workers and other personnel (World Health Organization [WHO], 2004). Laboratories are environments where cleanliness and sterilization are critical, and cleaning service personnel, although not directly interacting with hazardous samples or reagents, play a crucial role in maintaining these safety standards. Despite not being involved in the handling of hazardous materials directly, cleaning staff are often exposed to hazardous residues, infectious waste, and chemical spills, which necessitate their use of personal protective equipment (PPE) for self-protection (Rahmawati, 2019; Lee et al., 2017).

Personal protective equipment (PPE) is a set of tools designed to protect workers from occupational hazards and accidents (Minister of Manpower Regulation No. 8 of 2010). The use of PPE is essential in minimizing the risk of exposure to potentially harmful substances, thereby preventing occupational accidents and work-related illnesses (Notoatmodjo, 2012).

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Compliance with PPE usage is a critical factor in ensuring the safety and well-being of all employees, especially those working in high-risk environments like laboratories (Jones & White, 2019). However, despite the known importance of PPE, non-compliance with its usage is still frequently observed among cleaning service personnel. This non-compliance can result from various factors, including a lack of adequate knowledge regarding the importance and proper use of PPE, as well as negative or indifferent attitudes toward its necessity (Smith et al., 2018; Green & Kreuter, 2005; Sujarweni, 2014).

Knowledge, in the context of occupational safety, refers to the information that individuals possess about the risks they may encounter in their work environment and the safety protocols required to mitigate those risks (Green & Kreuter, 2005). Attitude, on the other hand, reflects the emotional and mental responses that individuals have toward safety measures, such as PPE, which can significantly influence their behavior and compliance (Ajzen, 1991). Both knowledge and attitude have been identified as crucial factors in determining safety behavior in various work environments, including laboratories (Green & Kreuter, 2005; Jones & White, 2019). For instance, studies have shown that employees with better knowledge of PPE's importance and proper use tend to comply more consistently with safety protocols (Rahmawati, 2019; Lee et al., 2017).

CITO Laboratory, a healthcare facility with established safety standards, must ensure that all its workers, including cleaning service personnel, possess the correct knowledge and positive attitudes regarding PPE. The promotion of PPE compliance is not only a regulatory requirement but also a critical step in safeguarding the health of the cleaning staff and ensuring the overall safety of the laboratory environment (Sujarweni, 2014). The laboratory management should regularly assess and improve the knowledge and attitude of cleaning staff to prevent any potential health risks and avoid non-compliance, which could compromise laboratory safety.

This study aims to investigate the relationship between the knowledge and attitudes of cleaning service personnel and their compliance with PPE usage at CITO Laboratory. By examining these factors, the research seeks to identify the underlying causes of non-compliance and provide laboratory management with evidence-based recommendations for improving occupational safety. The findings of this study are expected to contribute valuable insights that will help in the development of targeted strategies to enhance PPE compliance among cleaning service staff and, by extension, improve the overall safety standards of the laboratory.

2. RESEARCH METHOD

This study employs an observational analytical method, specifically a cross-sectional survey approach. This approach is used to examine the relationship between knowledge, attitudes, and compliance with the use of personal protective equipment (PPE). A cross-sectional survey is a type of study that explores the dynamics of the correlation between risk factors and effects by collecting data at a single point in time.

The sampling technique used in this study is a non-probability sampling method, specifically non-random sampling. This method provides unequal chances for each member of the population to be selected as a sample. The technique applied in this study is total sampling, also known as saturated sampling, where the entire population is used as the sample. In this case, the total number of samples was 58 participants.

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3. RESULTS AND DISCUSSION

The CITO Laboratory has established occupational safety procedures and provided basic training to cleaning service personnel regarding the use of personal protective equipment (PPE). However, the level of compliance among personnel in the use of PPE varies depending on their knowledge, understanding, and attitude towards occupational safety. Therefore, this research is highly relevant for examining the relationship between the knowledge and attitudes of cleaning service personnel and their compliance with the use of PPE, considering the important role they play in maintaining cleanliness and safety in the laboratory environment.

Table 1 Correlation Between Knowledge and Cleaning Service Personnel's Compliance with Personal Protective Equipment Usage

		PPE Usage Compliance		Total	Chi-Square Test
		Compliant	Non - Compliant		P Value
Knowledge	Good	31	4	35	0.012
	Adequate	10	6	16	
	Poor	3	4	7	
Total		44	14	58	

Based on the analysis conducted, it can be seen that 31 respondents (88%) with good knowledge of PPE complied with its use, while 4 respondents (12%) did not comply. Furthermore, 10 respondents (62%) with adequate knowledge of PPE complied with its use, while 6 respondents (38%) did not comply. Lastly, 3 respondents (43%) with insufficient knowledge of PPE complied with its use, while 4 respondents (57%) did not comply.

The Chi-Square test results show a p-value of 0.012, which is less than 0.05. This indicates a significant correlation between the level of knowledge and compliance with PPE usage among cleaning service personnel at the CITO Laboratory.

Table 2 Analysis of the Correlation between Attitudes and Cleaning Service Compliance with the Use of Personal Protective Equipment

Attitude	PPE Usage Compliance		Total	Chi-Square Test
	Compliant	Non-Compliant		P Value
Positive	35	7	42	
Negative	9	7	16	0.03
Total	44	14	58	

Based on the analysis conducted by the researcher, it can be seen that 35 respondents (83 Based on the analysis, it can be observed that 35 respondents (83%) with a positive attitude towards PPE complied with its use, while 7 respondents (17%) did not comply. Furthermore, 9 respondents (56%) with a negative attitude towards PPE complied with its use, while 7 respondents (44%) did not comply.

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The Chi-Square test results show a p-value of 0.03, which is less than 0.05, indicating a significant correlation between attitudes and compliance with PPE usage among cleaning service personnel at the CITO Laboratory.

Discussion

The study titled The Correlation Between Knowledge and Attitude of Cleaning Service Officers and Their Compliance with the Use of Personal Protective Equipment (PPE) in the CITO Laboratory employed an observational analytical design, specifically a cross-sectional survey approach. This approach was used to examine the correlation between knowledge, attitudes, and compliance with the use of personal protective equipment (PPE). The study was conducted at the CITO Laboratory in the Java region, with 58 cleaning service officers as respondents. There are two main variables in this study: the independent variables are the knowledge and attitudes of the cleaning service officers, while the dependent variable is compliance with the use of PPE.

Data used in this study were primary data, obtained directly from the respondents without intermediaries. Data collection was carried out through a Google Form that included a questionnaire with questions about the respondent's identity, their knowledge of PPE, their attitudes towards PPE, and their compliance with PPE usage.

Univariate analysis was conducted to describe the characteristics of each research variable: knowledge, attitude, and compliance with the use of PPE. The results of this analysis showed that most respondents had good knowledge regarding the types, functions, and procedures for using PPE. Bivariate analysis was then conducted to examine the correlation between the variables. The Chi-square test results showed a significant correlation between knowledge level and compliance with PPE use. Respondents with high knowledge were more likely to comply with PPE usage than those with low knowledge.

The analysis of knowledge and compliance revealed the following results: Of the 35 respondents with good knowledge, 31 (88.6%) complied with the use of PPE, while 4 (11.4%) did not comply. Among the 16 respondents with sufficient knowledge, 10 (62.5%) complied with the use of PPE, and 6 (37.5%) did not comply. In the group with poor knowledge, 3 (42.9%) out of 7 respondents complied with the use of PPE, and 4 (57.1%) did not comply. The Chi-Square test yielded a p-value of 0.01, indicating a significant correlation between knowledge and compliance among cleaning service personnel regarding the use of PPE at the CITO Laboratory. The fact that the majority of respondents had worked for more than one year likely contributed to this accumulation of knowledge. They have received regular training and are accustomed to working situations that require optimal PPE use. These results align with research by Rahmawati (2019), which showed that a high level of knowledge is significantly associated with increased compliance with PPE use in high-risk work environments.

The correlation between the respondents' attitudes and their level of compliance with PPE usage was also examined. Out of the 42 respondents with a positive attitude, 35 individuals (83.3%) showed compliance, while 7 individuals (16.7%) were non-compliant. Among the 16 respondents with a negative attitude, only 9 individuals (56.25%) complied with PPE usage, while 7 individuals (43.75%) did not comply. From these results, it can be concluded that a positive attitude towards PPE usage correlates with a higher level of compliance. This indicates that attitude is one of the important factors in encouraging compliant behavior. Individuals with

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a positive attitude tend to have a higher awareness of the importance of occupational safety and the benefits of using PPE, making them more consistent and disciplined in applying it.

The overall total of respondents who showed compliance in PPE usage was 44 individuals (75.9%), while those who were non-compliant totaled 14 individuals (24.1%). This percentage indicates that although most respondents had a positive attitude, there was still a portion who were non-compliant, possibly due to factors such as PPE availability, comfort during use, or environmental pressures in the workplace. The results of the Chi-Square test showed a p-value of 0.03, indicating a significant correlation between attitude and cleaning service personnel's compliance with PPE usage at CITO Laboratory. Therefore, the alternative hypothesis (H_1) was accepted, meaning that there is a correlation between attitude and cleaning service personnel's compliance with PPE usage at the CITO Laboratory.

The characteristics of the respondents further support this trend. Respondents with a secondary education level or higher, as well as those who have worked for more than one year, generally showed a more positive attitude. This suggests that an understanding of workplace hazards and real-world experience with risks contributes to shaping a positive perception and response to PPE usage.

4. CONCLUSION

Based on the research findings regarding the correlation between the knowledge and attitude of cleaning service personnel and their compliance with Personal Protective Equipment (PPE) usage at CITO Laboratory, several key conclusions can be drawn. Firstly, 35 respondents, or 60.3%, demonstrated good knowledge of PPE usage. Secondly, 42 respondents, or 73%, exhibited a positive attitude towards PPE, while 16 respondents, or 27%, displayed a negative attitude. Lastly, the study found a significant correlation between the level of knowledge and the cleaning service personnel's compliance with PPE usage, with a p-value of 0.01, which is less than the alpha value of 0.05. Similarly, the research also revealed a significant correlation between attitude and compliance, with a p-value of 0.03, which is also less than the alpha value of 0.05.

5. REFERENCES

Ajzen, I. (1991). The theory of planned behavior. Organizational Behavior and Human Decision Processes, 50(2), 179-211.

Green, L. W., & Kreuter, M. W. (2005). Health program planning: An educational and ecological approach (4th ed.). McGraw-Hill.

Jones, T., & White, S. (2019). Factors affecting compliance with personal protective equipment in hospital staff. Journal of Occupational Health and Safety, 37(2), 112-118.

Lee, J. H., Kim, H. S., & Choi, Y. H. (2017). Knowledge and attitude of hospital cleaning staff toward the use of personal protective equipment. Journal of Health and Safety, 15(1), 89-94.

Kementerian Tenaga Kerja dan Transmigrasi Republik Indonesia. (2010). Peraturan Menteri Tenaga Kerja dan Transmigrasi Republik Indonesia Nomor PER.08/MEN/VII/2010

Multidisciplinary Indonesian Center Journal (MICJO)
Journal page is available to
https://e-jurnal.jurnalcenter.com/index.php/micjo
Email: admin@jurnalcenter.com

tentang alat pelindung diri (Personal Protective Equipment). Jakarta: Kementerian Tenaga Kerja dan Transmigrasi Republik Indonesia.

Minister of Health of the Republic of Indonesia. (2021). Peraturan Menteri Kesehatan Nomor 14 Tahun 2021 tentang Standar Kegiatan Usaha dan Produk pada Penyelenggaraan Perizinan Berbasis Risiko di Sektor Kesehatan. Jakarta: Kementerian Kesehatan Republik Indonesia.

Notoatmodjo, S. (2012). Metode Penelitian Kesehatan. Jakarta: PT. Rinekal Cipta.

Rahmawati, D. (2019). Factors influencing the compliance of cleaning service staff with the use of PPE in high-risk environments. Journal of Occupational Safety, 12(4), 45-56.

Sujarweni, V. W. (2014). SPSS untuk Penelitian. Jakarta: Pustaka Baru Press.