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The Relationship Between Compliance With The Use Of Personal Protective Equipment (PPE) And The Rate Of *Needle Injury Incidents Stick Injuries* In Clinical Practice Students

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ABSTRACT

Needle stick Needlestick injuries (NSIs) are a common occupational risk among healthcare workers and clinical practice students. Needlestick injuries can lead to the transmission of infectious diseases such as Hepatitis B, Hepatitis C, and HIV. One way to prevent NSIs is compliance with the use of Personal Protective Equipment (PPE) during clinical procedures. This study aims to determine the relationship between compliance with PPE use and the incidence of *needlestick injuries. stick injury* in clinical practice students. This study used a quantitative method with an analytical design and a *cross-sectional approach. The study was conducted in a sectional manner*. The sample of the study was students undergoing clinical practice at practice area X. Data were collected using a questionnaire and analyzed using the Chi- Square test. The results of the study showed a significant relationship between compliance with the use of PPE and the incidence of *needle sticks. stick injury* ($p < 0.05$). The conclusion of this study is that students who do not comply with the use of PPE have a higher risk of experiencing *needle sticks. stick injury*.

Keywords: PPE Compliance, *Needle Stick Injury*, Clinical Practice Student

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1. Introduction

Occupational safety and health (K3) in the healthcare sector is a crucial aspect that must be considered to protect healthcare workers from the risk of workplace accidents and occupational diseases. One form of workplace accident that frequently occurs in healthcare facilities is *needle stick accidents. stick injury* (NSI), namely injury caused by a needle stick or other sharp object.

Clinical practice students are at high risk for NSIs because they are still learning and have limited experience performing clinical procedures. Lack of skill, fatigue, and unfamiliarity with safety procedures can increase the risk of needlestick injuries.

The use of Personal Protective Equipment (PPE), such as gloves, masks, and other protective gear, is one of the primary preventative measures against NSIs. Compliance with PPE use can reduce the risk of exposure to blood and body fluids, which can potentially transmit infectious diseases.

In practice, students are still found to be non-compliant with the complete and correct use of PPE. This non-compliance can be caused by various factors, such as lack of knowledge, unsupportive attitudes, and suboptimal supervision. Therefore, this study is important to determine the relationship between PPE compliance and the incidence of NSI among clinical practice students.

2. Research Methods

a. Types and Design of Research

This research uses a quantitative method with an analytical design and a cross-sectional approach. sectional.

b. Location and Time of Research

The research was conducted at the health education institution and clinical practice area X in May–August 2025.

c. Population and Sample

The research population was all students undergoing clinical practice. The research sample was taken using a purposive sampling technique.

d. Inclusion criteria:

1) Clinical practice students
2) Have you ever had an invasive procedure?
3) Willing to be a respondent

e. Exclusion criteria:

1) Students who did not complete the questionnaire completely

f. Research Variables

- Independent variable: Compliance with the use of PPE
- Dependent variable: *Needle* incident *stick injury*

g. Research Instruments

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The research instrument was a questionnaire on compliance with the use of PPE and a history of *needle incidents. stick injury* during clinical practice.

h. Data analysis

Data were analyzed univariately and bivariately using the Chi- Square test with a significance level of $p < 0.05$.

i. Research Ethics

The research was conducted by paying attention to the principle *of informed consent. consent*, anonymity, and confidentiality of respondent data.

3. Research Results And Discussion

a. Research result

1) Respondent Characteristics

Table 1
Distribution of Respondent Characteristics

Characteristics	Frequency (n)	Percentage (%)
Age		
18–21 years	28	40.0
22–25 years	42	60.0
Gender		
Man	22	31.4
Woman	48	68.6
Total	**70**	**100**

2) Compliance with the Use of PPE

Table 2
Distribution of Compliance with the Use of PPE

PPE Compliance	Frequency (n)	Percentage (%)
Not obey	30	42.9
Obedient	40	57.1
Total	**70**	**100**

3) Needle Incident Stick Injury

Table 3
Distribution of Needle Incidents Stick Injury

NSI incident	Frequency (n)	Percentage (%)
Have you ever experienced	29	41.4
Never	41	58.6
Total	**70**	**100**

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4) The Relationship between PPE Compliance and *Needle Injuries Stick Injury*

Table 4
Relationship between Compliance with Use of PPE and the Incidence of NSI

PPE Compliance	Ever NSI	Never	Total	p- value
Not obey	19	11	30	
Obedient	10	30	40	
Total	**29**	**41**	**70**	**0.001**

Square test, $p < 0.05$

b. Discussion

The results of the study showed that there was a significant relationship between compliance with the use of PPE and the incidence of *needle sticks. stick injuries* in clinical practice students. Students who did not comply with PPE experienced more NSIs than those who did. This suggests that compliance with PPE use is an important factor in preventing needlestick injuries.

The use of PPE, particularly gloves, serves as the first barrier against exposure to blood and body fluids. Failure to use PPE can increase the risk of injury during invasive procedures, such as injections and IV insertions. Furthermore, students who are less compliant tend to ignore workplace safety procedures.

The results of this study also indicate that a significant proportion of students still experience NSIs during clinical practice. This can be caused by a lack of experience, suboptimal skills, and the workload and stress of the practice. Clinical practice students require more intensive guidance and supervision to minimize the risk of workplace accidents.

The findings of this study align with occupational safety theory, which states that individual behavior, including compliance with PPE use, significantly influences the risk of workplace accidents. Consistent implementation of OHS standards can significantly reduce the incidence of NSIs.

The implications of this study's findings indicate the need for increased education and supervision regarding the use of PPE for clinical practice students. Educational institutions and clinical practice sites need to collaborate to create a safe practice environment and support occupational safety practices.

4. Conclusion And Suggestions

a. Conclusion

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There is a significant relationship between compliance with the use of PPE and the rate of *needling stick Injuries* in clinical practice students. Students who do not comply with the use of PPE have a higher risk of experiencing NSI.

b. Suggestion

1) For Educational Institutions

Improve K3 learning and training before and during clinical practice.

2) Share Clinical Practice Land

Tighten supervision of the use of PPE and implementation of work safety SOPs.

3) For Students

It is expected to increase compliance in the use of PPE during clinical practice.

4) For Further Researchers

It is recommended to conduct research with a longitudinal design and multivariate analysis.

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