

# The Relationship Between Knowledge and Behavior on Study Products of Health Analyst Diploma Students in Handling Chemicals

Yane Liswanti\*, Taufik Nugraha

Health Analyst Study Program  
STIKes Bakti Tunas Husada Tasikmalaya  
\*yaneliswanti@yahoo.com

**Abstract—Objectives:** The aim of the research is to find out the relationship between students knowledge and behavior towards handling chemicals. **Method:** The research is descriptive correlation. The research involved 50 students' Health Analyst Department as respondents using Cross Sectional Technique. The instrument of the research is questionnaire about knowledge and behavior in handling chemicals. **Result and Discussion:** The result of the research shows there is not a significant relationship between knowledge and students' behavior with result  $p=0,124 > \alpha= 0,05$ . **Conclusion :** Based on the result of the research can be concluded that knowledge does not affect students' behavior in handling and using chemicals.

**Keywords:** chemistry, health and safety, knowledge, behavior

## I. INTRODUCTION

The importance of Occupational Health and Safety (K3) knowledge in the laboratory concerns on working application. It describes about the importance of working safely and the use of Personal Protective Equipment (PPE) dealing infectious or dangerous materials such as chemicals. Personal protective equipment (PPE) is very

important in order to handle dangerous chemicals that can cause an undesirable event. However, many students underrate it in carrying out an activity dealing hazardous chemicals such as chemicals which have strong acids. It can cause poisoning, corrosive, carcinogens, flammable, explosive or radioactive which can result in work accidents in the laboratory [1].

Based on the results of observations made by researchers at the lab at the Chemistry Laboratory, there are still many students who do not understand the use of Personal Protective Equipment in handling chemicals in the chemical laboratory BTH Tasikmalaya, even though in lectures students have already learned Health and Safety (K3) but there are still many students who do not use Personal Protective Equipment in accordance with the SOP applied in handling chemicals.

Accidents in the laboratory often occur in work accidents due to chemical spills and the nature of the chemicals themselves,

which are flammable, explosive, poisoning, and so forth. This can injure the workforce of many types of chemical substances used in lab work in hazardous laboratories. If in the use of chemicals are not true due to mistakes in student activities and less concerned on Personal Protective Equipment (PPE). It can cause harmful and health problems.

## II. MATERIAL AND METHOD

### A. Procedure

In this study, observations were taken on students who were taking and handling chemicals in the chemical laboratory of STIKes Bakti Tunas Husada without being noticed by the respondents themselves. It was done by assessing how to take / handle chemicals. Whether the procedures of the students had already taken and handled in accordance to the Standard Operational Procedure (SOP) applied. Interviews were conducted with respondents asking how extensive the respondent's knowledge was in handling chemicals. Giving questionnaire regarding the knowledge and behavior of respondents in using / handling chemicals were filled in accordance to the actual response state.

### B. Data Analysis

The research method was an observational research method with cross sectional design. The population was 102 students in level II of D III Health Analyst study program. The sampling technique was purposive sampling. The sample used was 50 students who were taken in accordance with the objectives of the study [6].

The data obtained are then classified as good and not good. Good knowledge assessment if the answer ( $> 86$ ) and not good if the answer ( $<86$ ). Good behavior assessment if the answer ( $> 87$ ) and not good if the answer ( $<87$ ).

## III. RESULT

Based on the results of research conducted on 50 respondents obtained as follow:

A. Based on the distribution the level of knowledge, can be seen as follow:

Table 1

Distribution based on knowledge level

No.	Category	Frequency	Percentage (%)
1	Good	28	56%
2	Not Good	22	44%
	Total	50	100%

B. Based on the distribution of respondents according to behavior towards handling chemicals. It can be seen in the table as follows:

Table 2

Distribution based on behavior

No.	Category	Frequency	Percentage (%)
1	Baik	22	44%
2	Kurang Baik	28	56%
	Total	50	100

C. The distribution of respondents based on the level of knowledge and behavior in handling chemicals. It can be seen from the data as follows:

**Table 3**  
Distribution of respondents based on the level of knowledge and behavior of in handling chemicals

Knowledge	Behavior				Total	p	
	Good		Not Good				
	n	%	n	%	n	%	
Good	15	53,6	13	46,4	28	100	<b>0.124</b>
Not Good	7	31,8	15	68,2	22	100	
Total	22	44%	28	56%	50	100	

The result of the statistic test shows the relationship between the level of knowledge and student behavior in handling or use chemical by using the chi-square test showed that there was no significant relationship between the level of knowledge and behavior in handling or using chemicals on students of the Health Analyst DIII study program with results  $p = 0.124 > \alpha = 0.05$ . Distribution of respondents according to knowledge obtained good results and behaviors obtained results are not good.

Poor respondent behavior can be influenced by stimulus or internal determinant factors or external determinants. Behavior is not only influenced by knowledge but there are other factors that can be a motivating factor (such as the respondent's friend himself (student) who is practicing in a laboratory, a lecturer or laboratory practice assistant who can provide supervision and teach the principles handling or use of chemicals). And supporting factors (for example the availability of PPE at the time of practicum, MSDS material safety data sheet (MSDS) on

chemicals to be used. Although the respondent's knowledge is good but if it is not supported by the availability of tools and materials at the practicum place, the respondent cannot do the things that should be done well when practicum is carried out.

Even though students' knowledge is good, at the time of practicum, students do not apply the learning outcomes that have been conveyed because students feel uncomfortable or feel safe and do not use Personal Protective Equipment (PPE) when exposed to chemicals or due to lack of available facilities. Also because of seeing his friends do not use a complete Personal Protective Equipment (PPE) so students follow their friends wrong. The knowledge is not good but when practicum is done students using a complete Personal Protective Equipment (PPE). It maybe because students are afraid of being reprimanded by the lecturer who is watching, or also students see the behavior of their friends who use personal protective equipment (PPE) so that students follow their friends.

Even though the respondent's knowledge is good but if it is not supported by the availability of tools and materials at the practicum place, the respondent cannot do what should be done well at the time the practicum is carried out.

The effects of unfavorable behavior can be at risk of work accidents in the laboratory due to student fatigue itself. If good knowledge and good behavior, students are said to have complied with Standard Operating Procedures (SOPs) in chemical laboratories. Receiving and applying

Occupational Health and Safety (K3) courses when handling or using chemicals and comply with the rules in the laboratory.

#### ACKNOWLEDGMENT

Our Gratitude delivers to the Research and Community Service Center (P3M) of STIKes Bakti Tunas Husada Tasikmalaya who was finding this research. Also friends and colleagues, who had helped us on the process of the research,.

#### REFERENCES

- [1] Achadi B. Cahyono, 2004. Keselamatan Kerja Bahan Kimia di Bidang Industri, Gajah Mada University Press, Yogyakarta
- [2] A.M Sugeung Budiono, Hiperkes dan Keselamatan Kerja dalam Industri Kimia. Seminar Teknik Kimia University Diponegoro, Semarang 1986
- [3] Notoatmodjo, Pendidikan dan Perilaku Kesehatan. Penerbit Rineka Cipta. Jakarta 2007
- [4] Soemanto Imamkhasani, Keselamatan Kerja dalam Laboratorium Kimia, Gramedia, Jakarta 1990
- [5] Hendra, 2005, Bahaya Bahan Kimia di Tempat Kerja. Higiene Industri. Semarang : Program Sarjana Universitas Dipenogoro
- [6] Notoatmodjo, S. Metode Penelitian Kesehatan. Jakarta : Rineka Cipta; 2010.