

## Implementation Of Occupational Safety And Health (K3) For Students In Facing Pandemic

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### ABSTRACT

The level of occupational safety and health (K3) of students is needed when students carry out practical activities in the laboratory. Especially for students who work in laboratories that have high safety and health risks, because work safety in the laboratory is not only caused by the system that has been implemented in the laboratory room but also the awareness of each individual to avoid work accidents. This study aims to determine how the application of K3 in the Laboratory of Cosmetology Education, State University of Medan. The type of research used in this research is explanatory research and uses a quantitative approach. The analysis technique was carried out descriptively by comparing the results of research on the implementation of K3 applications with theories obtained from the study of literature. The results showed that the variables of occupational safety and health simultaneously had a significant effect on the results of the Cosmetology Education student practicum which can be seen from the significance value of  $F < 0.000 < 0.05$  and the Adjusted R square value is 0.189. This shows that the contribution of occupational safety and health variables to the results of the Cosmetology Education student practicum is 18.9% while the remaining 81.1% is explained by other variables not explained in this study.

**Keywords:** Occupational safety, health, cosmetology education student practicum.

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### INTRODUCTION

Currently, concerns are increasing in line with the spread of COVID-19 transmission in some parts of the world and the ability to reduce the rate of decline in other countries. Governments, employers and workers, and organizations face major challenges in their efforts to combat the COVID-19 pandemic and protect safety and health in the workplace. Beyond this ongoing crisis, there are concerns about

reinstating activities capable of sustaining the progress already made in suppressing dissemination. This report highlights the increased occupational safety and health (OHS) risks due to the spread of COVID-19. The report also explores tools to prevent and control spread risks, psychosocial risks, ergonomics, and work-related safety and health risks in this pandemic situation. The workplace, including laboratories, is an effective means where students, together, can disseminate information and conduct socialization related to occupational safety and health (K3), including preventive and protective measures to reduce the spread of infectious diseases.

Human resources play an important role in the success of an organization because humans are living assets that need special attention. The fact that humans are the main asset in the organization, must get serious attention and be managed as well as possible. It is intended that students as human resources can contribute optimally to achieve learning objectives. In the management of human resources, management is needed that can manage systematically, planned, and efficiently, including the Makeup Education Study Program, which becomes an important asset in learning are students who are doing a practicum in the laboratory.

Along with the development of knowledge in the era of globalization and current technological advances, occupational safety and health are also growing. Law Number 1 of 1970 concerning Safety as the legal basis for the application of K3 in Indonesia has been strengthened by the issuance of Law Number 36 of 2009 concerning Health where in Article 164-165 concerning Occupational Health it is stated that all workplaces are required to implement health efforts both in the formal sector as well as informally. Occupational Health and Safety (K3) is an effort to provide health and safety guarantees, as well as improve the health status of workers by preventing work accidents and occupational diseases. As stated in Law Number 36 of 2009 on Health, it is necessary to have occupational health efforts aimed at protecting workers from the bad effects of their work by implementing occupational health standards and creating a healthy work environment.

The application of K3 is also intended to protect workers so that they can achieve optimal work productivity, this was explained (Rafiei, M, 2015), at Primary Health Care in Iran, it proved that to develop human resources, the most important thing to do is to keep workers stay healthy and productive. The use of science and technology can indeed increase capabilities and productivity, but in addition, the risks to the safety and health of workers will increase.

If we look at the number of work accidents in Indonesia, it is still considered high, this is the result of data findings from the Ministry of Manpower which noted an increasing trend in the number of work accidents in Indonesia which has continued to increase in recent years. According to the Minister of

Manpower, throughout 2019 there were 157,313 work accident cases, or an increase compared to the work accident cases that occurred in 2018 of 123 thousand cases.

The main cause of work accidents is the low awareness of the importance of implementing K3 in the workplace and in the community. So far, the implementation of K3 is often seen as a cost burden, not as an investment to prevent work accidents. BPJS Employment itself throughout 2019 has paid work accident claims with a value of Rp 1.09 trillion. This figure has increased compared to 2018 where the claim value was only Rp. 971 billion and in 2016 which was only Rp. 792 billion. ([www.bpjsketenagakerjaan.go.id](http://www.bpjsketenagakerjaan.go.id))

In the current era of increasingly sophisticated digitalization technology, Occupational Safety and Health (K3) is a must to be carried out by work providers to increase productivity, in addition to protecting workers from things that threaten their safety and health. If the safety and health of workers are well maintained, the number of occupational illnesses, disabilities and accidents can be minimized, so that healthy and productive worker will be realized. Considering the importance of Occupational Safety and Health (K3), in the workplace, it is necessary to start prioritizing Occupational Health and Safety (K3) programs in its operation. Knowledge of Occupational Safety and Health (K3) by workers and other parties is sometimes still low, both knowledge about how to apply K3 correctly, the impact if the workplace is unable to apply OHS, this makes the workplace still lacking in providing OHS services.

Student work in cosmetology laboratories has a high rate of accidents and occupational disease transmission, as they are exposed to a variety of hazards, including working with power tools, equipment, and chemicals, excessive noise, and vibration, slipping, swaying, and falling, the need to lift heavy loads and doing repetitive work and work that requires awkward and stooped positions, exposure, and infective agents/substances. According to Sastrohadiwiryono (2005), the Occupational Health and Safety management system is part of a management system that includes organizational structure, planning, responsibilities, implementation, governance/procedures, processes, and resources needed in terms of development, implementation, and implementation.

## **LITERATURE REVIEW**

Occupational Health and Safety (K3) is one of the occupational safety and health efforts in the work environment that aims to improve the quality of life and increase worker productivity. According to Mangkunegara (2013), occupational health indicates a condition that is free from physical, mental, emotional, or pain disorders caused by the work environment. Health risks are factors in the work

environment that work beyond the period determined by the environment that can help emotional stress or physical disorders.

Mangkunegara (2013), also states that work safety indicates conditions that are safe or safe from suffering, damage, or loss in the workplace. Safety risks are aspects of the work environment that can cause fire, fear of electric shock, cuts, bruises, sprains, fractures, loss of organs, vision, hearing, all of which are often related to company equipment or the physical environment and include tasks jobs that require maintenance and training. Furthermore, Mangkunegara (2002) explained that occupational health and safety is a thought and effort to ensure the integrity and perfection of both physical and spiritual workers in particular, and humans in general, the results of work and culture towards a just and prosperous society.

Occupational Safety and Health (K3) has also been stated in Article 86 paragraph 2 number 31 of Law Number 13 of 2003 which confirms that every worker has the right to obtain protection for occupational safety and health to protect worker safety to realize optimal productivity in the implementation of safety efforts and occupational health. Furthermore, the International Labor Organization (ILO), writes that Occupational Health and Safety is an effort to maintain and improve the highest degree of physical, mental, and social well-being for workers in all occupations, prevention of health deviations among workers caused by working conditions, protection of workers. In their work from risks due to factors detrimental to health, placement and maintenance of workers in a work environment adapted to physiological and psychological capabilities; and summarized as the adaptation of work to man and every man to his position.

In the written ILO guidelines for Occupational Safety and Health Management Systems (known as ILO-OSH 2001), it is stated that preventive and protective measures should be implemented in the following order of priority: (i) eliminating hazards; (ii) controlling risk at source (through the use of engineering controls or organizational measures); (iii) minimize risks by designing safe work systems (including administrative actions taken to control risks); and (iv) where residual risk cannot be controlled by collective action, the company should provide appropriate personal protective equipment (PPE) at no cost and take measures to ensure its use and maintenance. (ILO, 2001). Meanwhile, regarding Occupational Health, it has been regulated in Health Law no. 23 of 1992 Section 6 concerning Occupational Health, Article 23 contains: 1) Occupational health is organized to achieve optimal work productivity, 2) Occupational health includes protection of occupational health, prevention of occupational diseases, and requirements for occupational health, 3) Every place workers are required to

provide occupational health. Furthermore, the indicators of the Causes of Work Safety according to Mangkunegara (2002) are condition of the work environment and use of work equipment.

### **Purpose and Benefits of Maintaining Occupational Health and Safety**

According to Mangkunegara (2013) that the objectives and benefits of occupational safety and health are as follows: a) So that every employee gets a guarantee of occupational safety and health both physically, socially, and psychologically, b) So that every equipment and work equipment is used as well as possible. should be as selective as possible, c) So that all production products are kept safe, d) So that there is a guarantee for the maintenance and improvement of the nutritional health of employees, e) To increase enthusiasm, work harmony, and work participation, f) To avoid health problems caused by the environment or working conditions, g) So that every employee feels safe and protected at work. The goals and benefits of occupational safety and health cannot be realized and the benefits are felt if it only relies on the role of the workforce but also needs the role of the leadership.

### **Factors of Accidents and Health Problems**

According to Mangkunegara (2013), several reasons that allow accidents and health problems for employees are put forward.

- a. The state of the work environment is related to 1) the preparation and storage of goods, 2) the safety is not taken into account, 3) the workspace is too crowded and overcrowded, 4) the disposal of dirt and waste is not in place.
- b. Air Regulation, related to 1) Air change in the workspace that is not good (dirty, dusty, and smelly workspace, 2) Air temperature that is not conditioned by regulation.
- c. Lighting settings, related to 1) Improper arrangement and use of light sources, 2) Poorly lit, and dimly lit workspaces.
- d. Use of Work Equipment, related to 1) Safety of work equipment that is worn or damaged.
- e. Use of electronic devices without proper security.
- f. Physical and Mental Conditions of workers, related to 1) Damage to the senses, unstable employee stamina, 2) Unstable emotions of workers, fragile personality of workers, weak ways of thinking and perceptual abilities, low work motivation, careless attitude of workers, lack of care, and lack of knowledge in the use of work facilities, especially work facilities that carry the risk of danger.

In this study, only 3 indicators were used, namely the state of the work environment, the use of work equipment, the physical and mental conditions of students using the laboratory.

## **The Importance of Occupational Health and Safety**

According to Sunyoto (2012), there are three reasons for the importance of occupational safety and health:

### **1. Based on Humanity**

First of all the managers conduct accident prevention on a genuine humanitarian basis. They do so to reduce pain as much as possible, and injured workers and their families are often briefed on the consequences of accidents.

### **2. By-law**

Because at this time in America there are federal laws, state laws, and municipal laws on occupational safety and health, and those who violate are imposed fines.

### **3. Economical**

Namely, so that companies become aware of work safety because the cost of accidents can be very large for the company.

### **4. Prevention of work accidents**

According to Komang quoted by Sunyoto (2012), the Ministry of Manpower of the Republic of Indonesia expects that accident prevention efforts are an integrated program of coordination of various activities, directed supervision based on attitudes, knowledge, and abilities. Some experts have developed a theory of accident prevention known as 5 stages, namely:

#### **1. Organization of occupational safety and health**

In the era of industrialization with the complexity of problems and the application of modern management principles, the problem of accident prevention is not possible for individuals or individually but requires many people, various levels in an adequate organization.

#### **2. Finding facts and problems**

This activity can be carried out through surveys, inspections, observations, investigations, and reviews of records.

#### **3. Analysis**

This stage is the process of how facts or problems are found and solutions can be found. In this phase, the analysis must be able to identify various things, including the main cause of the problem, the level of frequency, location, relation to humans, and conditions. This analysis may produce one or more alternative solutions.

#### **4. Selection or determination of alternatives (solution).**

From various alternative solutions, it is necessary to select one that is truly effective and efficient.

#### 5. Executor

If an alternative solution has been chosen, it must be followed by action from the decision. In the implementation process, monitoring activities are needed to avoid deviations.

#### **Work Accident Risk Control**

Rofiah (2009) explains that institutions must plan the management and control of activities, products, goods, and services that can cause a high risk of work accidents, this can be achieved by documenting and implementing standard policies for the workplace, plant, and material designs, procedures, and instructions. Work to regulate and control the activities of goods and services. Control of the risk of accidents and occupational diseases is carried out through the following methods:

- a. Technical/engineering controls covering elimination, substitution, isolation, ventilation, hygiene, and sanitation; 1) Elimination: eliminating materials that contain a potential hazard, 2) Substitution: Replacing hazardous materials with less dangerous or harmless substances at all.
- b. Ventilation: to circulate air into the workspace so that the levels of hazardous materials are lower than the dangerous levels, namely the level of the threshold value (NAV).
- c. Hygiene and Sanitation: by looking for factors that cause Occupational Diseases (PAK) so that workers can obtain the highest degree of health and wastewater treatment so as not to pollute the environment.
- d. Education and training are at improving the quality of knowledge and skills of the workforce in the field of OSH.
- e. Building awareness and motivation which includes a system of bonuses, incentives, rewards, and self-motivation.
- f. Evaluation through internal audit, incident investigation, and etiology.
- g. Internal audit by identifying any near-miss events within the institution for further corrective action to be taken so that the procedures established programmatically can be more effective.
- h. Incident investigations identify every near-miss within the institution.
- i. Etiology: looking for the source (origin) of the occurrence of occupational diseases.
- j. Law enforcement, namely by making work rules and norms such as being more assertive about giving sanctions to workers who violate institutional regulations.

#### **System on Work Safety Management**

According to Mangkunegara (2013), safety goals must be integral to the part of every work management and supervision. Likewise, the role of students is very important in applying a systems approach to safety in the laboratory.

a. Involve supervisors and reporting systems

If an accident occurs, it must be reported to the lecturer or laboratory directly from the damage department, and the report must also identify the possible causes of the accident.

b. Develop work safety procedures management

The essential system approach is to establish a regular and follow-up communication system on every employee accident.

c. Make work safety a work goal

Create a work safety assessment card. Every mistake made by an employee is recorded by the supervisor and is accounted for as a material consideration in providing an assessment of work performance, the condition of the employee concerned.

d. Train employees and supervision in work safety management

Train employees to be able to use work equipment properly. Likewise, employees are trained to be able to use safety equipment in the event of an accident at work.

**Key ILO Standards on OSH**

- a. The Occupational Safety and Health Convention, 1981 (No. 155) and the accompanying Recommendation (No. 164) have established the basic principles for national and institutional/enterprise-level policies and strategies at promoting occupational safety and health and improving working conditions. The Convention also defines the responsibilities of employers, workers' rights, and requirements regarding information, education, and training. The 2002 Protocol (No. 155) incorporates specific provisions for the recording and notification of accidents and illnesses in the workplace.
- b. The Occupational Health Services Convention, 1985 (No. 161) and the accompanying Recommendation (No. 171) stipulate the establishment of occupational health services at the enterprise level, which is responsible for providing advice to institutions/employers, workers/students in institutions on the maintenance of a safe working environment. and healthy.
- c. The Promotional Framework for the Occupational Safety and Health Convention, 2006 (No. 187) and its accompanying Recommendation (No. 197) promote a culture of prevention of safety and health through the creation and implementation of national OSH policies, systems, and programs.



According to Recommendation No. 197, the national system should implement appropriate measures to protect all workers.

## **RESEARCH METHOD**

This research is categorized as explanatory research with a quantitative approach, then Djam'an Satori (2011) reveals that qualitative research is carried out because researchers want to explore descriptive phenomena that cannot be quantified such as the process of a work step, the formula of a recipe, the notions of understanding of a variety of concepts, characteristics of goods and services, pictures, styles, procedures of culture, physical models of an artifact and so on.

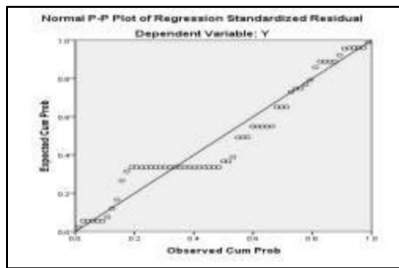
The number of samples in this study was 41 students of the Makeup Education Study Program, with the sampling technique using the saturated sampling technique. According to Sugiyono (2013), descriptive analysis is a statistic used to analyze data by describing or describing the data that has been collected as it is without intending to make conclusions that apply to the public or generalizations, descriptive analysis in this study is used to describe the variables of safety and health work and employee performance by distributing items from each variable. After all the data is collected, then process the data and tabulate it into a table, then discuss the data that has been processed descriptively. The descriptive measure is to give a number both in the number of respondents and in percentage figures. The subjects in this study were Occupational Safety and Health (K3) students of the Makeup Education Study Program, who were conducting Practicum in the laboratory during the Pandemic. Data was collected using observation, interviews, documentation, and literature studies.

## **RESULTS AND DISCUSSION**

Based on the results of the respondents' responses related to the mean score of the work safety variable, it showed an average of (4.12), which means that the respondents agreed about the work safety applied to the Cosmetology Education Laboratory. The results of respondents' responses related to the mean score of the occupational health variable showed an average of (4.07), which means that the respondents agreed about the occupational health program implemented in the Cosmetology Education Laboratory. Respondents' responses related to the mean score of the employee performance variable showed an average of (4.06), which means that the respondents agree about the performance during the practicum at the Performance Cosmetology Education Laboratory.

Normality Assumption Test Results can be declared to have fulfilled the normality assumption if the standardized residual value or residual value entered into a P-P Plot graph forms a pattern that is

close to a straight line and the scattered points follow or approach the diagonal line. The results of the assumption test can be seen in Figure 1 below;



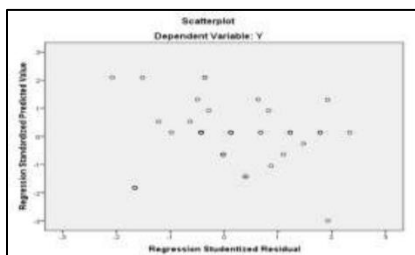
**Figure 1.** P-P Plot Graph of Normality Assumption Test

**Table 1.** Multicollinearity Assumption Test

Model	Coefficients <sup>a</sup>	
	Collinearity Statistics	
	Tolerance	VIF
(Constant)		
Keselamatan kerja	.876	1.142
Kesehatan kerja	.876	1.142

a. Dependent Variable: Y

The results of the multicollinearity assumption test in table 1 above show that the VIF value for each variable is <10, so the assumption test results are declared fulfilled and there is no multicollinearity.



**Figure 2.** Scatter Plot Heteroscedasticity Test

Based on Figure 2, the scatterplot above shows certain regular patterns, such as points that form waves, widening and narrowing, so Figure 2 above indicates that non-heteroscedasticity has occurred.

**Table 2.** Simultaneous Test Results (Test F)

ANOVA <sup>a</sup>					
Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	.537	2	.268	8.007	.001 <sup>b</sup>
Residual	1.944	58	.034		
Total	2.481	60			

a. Dependent Variable: Y  
 b. Predictors: (Constant), X.2, X.1

Based on table 2, the value of Sig. F < is 0.001 < 0.05, the regression analysis model is significant. This means that H0 is rejected and Ha is accepted so that it can be concluded that occupational safety (X1) and occupational health (X2) simultaneously (together) have a significant effect on student practicum results (Y). If the work safety and occupational health of students increases, the results of student practicums will also increase.

Based on the description analysis in this study, it shows that the average respondents' answers in table 2 on the work safety variables are categorized as very good. This means that Medan State University as an educational institution has paid attention to the safety of its students, namely by arranging the completeness for the process of student practicum activities that are good and their safety is considered, the lighting system in the workplace is good, and the condition of equipment, assistance, protection provided by the institution in the event of an accident. work accidents are in accordance with the standard.

**Conditions of the Work Environment**

Based on the description analysis in table 2, the occupational health variable shows that the average respondent's answer to the occupational health variable is in the very good category. This means that the cleanliness of the work environment is clean, the air temperature and ventilation in the workplace meet the standards, waste disposal does not interfere with the student practicum process, the provision of clean water is adequate, bathroom/WC facilities are adequate, students receive health services from the University through the student health center is good. So it can be concluded that occupational health is important for students. From the explanation of the descriptive analysis of occupational safety and health above, it can be concluded that these two variables cannot be separated in this study. The better the work safety of the Cosmetology Education Study Program in carrying out the learning process and the better the occupational health of the institution, the impact on the achievement of student practicum results. Thus, it can be concluded that occupational safety and health is an important factor in improving students' practicum abilities.

Students who pay attention to occupational safety and health will have a good impact on the results of their practicum. The Cosmetology Education Study Program must also pay attention to and improve the occupational safety and health of students who are practicing in the laboratory during this pandemic so that the results of the student practicums increase and the learning objectives can be achieved. The results of this study are also in line with research by Setiawan (2013) and Anjani (2014) which show that occupational safety and health have a significant effect simultaneously on employee performance.

According to Mangkunegara (2013), the state of the work environment can be seen from how the preparation and storage of hazardous goods, workspace, and disposal of dirt and waste. Based on the research results, the Laboratory of the Cosmetology Education Study Program has a good working environment, this can be seen from how they carefully prepare and store hazardous materials such as hazardous materials, liquid substances used in laboratory activities. These hazardous substances are stored in a special storage area in the laboratory so that students are not exposed to the dangers of these substances. Sharp equipment such as scissors, cutters are stored in a special warehouse for field equipment storage, so that the risk of students experiencing accidents can be controlled.

Students in the Cosmetology Education Study Program stated that the workspace owned by staff/lecturers and administration was very good, this was measured by the size of the workspace owned so that lecturers and laboratory staff did not feel cramped and comfortable at work. The workspace is always kept clean by the responsible cleaning staff. Disposal of waste and waste from the results of student practice is carried out by placing organic and non-organic waste separately, while the liquid waste generated from the remnants of the practice is channeled into the provided water disposal.

#### **Use of Work Equipment for Students**

Work equipment that is worn out and damaged is periodically replaced with new ones. Outdated or damaged equipment will not be reused for safety reasons. However, if the damaged equipment is still possible to be repaired, it will be repaired by the technician who is responsible for maintaining the practicum equipment in the Cosmetology laboratory. In the use of electronic equipment in the work environment, the Make-up Laboratory has done it according to safety standards. For students who work in laboratories, for the sake of safety in using tools, as well as not being exposed to hazardous substances and extreme temperatures, they are required to use Personal Protective Equipment (PPE), such as lab coats, lab apron, masks, special sandals in the lab.

#### **Students' Physical and Mental Conditions**

In the context of the COVID-19 pandemic, various types of measures can be applied to reduce the risk of transmission among students during practicum. Another action that must be carried out is related to monitoring the health of students who are at risk to detect the unfavorable health effects of the dangers of practicum at an early stage considering that at this early stage it will be easier to treat disease (for example by monitoring students with fever with other early symptoms of infectious diseases). ). Arrangements should be made to ensure that any exposed person can easily report any symptoms to his or her supervisor who will then inform the medical staff (WHO and ILO, 2018).

To maintain stamina and physical health, each student is required to take vitamin supplements and nutritious food/drinks are also carried out regularly. This is done so that students have stable stamina and a healthy and strong physique, as well as a sense of security so that the practice runs according to the learning objectives. During outbreaks such as COVID-19, all students experience increased levels of stress which can have serious effects on mental health, especially in cases where mandatory home quarantine is imposed. To overcome or minimize unstable student emotions, fragile personalities, weak ways of thinking and perceptual abilities, low practicum motivation, careless attitude, lack of scrutiny, and lack of knowledge in the use of work facilities, especially work facilities that carry the risk of danger, the following steps must be taken. measures to protect students must include, among others, knowledge, and training on safe and healthy work practices, provision of free personal protective equipment as needed, access to public health services so that unwanted risks can be controlled.

## **CONCLUSION**

Based on the results of research and discussions that have been carried out, it can be concluded that in dealing with the COVID-19 crisis, effective prevention and control measures in cosmetology laboratories have a positive effect on the continuity of student learning. To reactivate and continue the practice, it is necessary to manage OSH risks, as this helps prevent or avoid more severe outbreaks, which can cause more economic and social disruption to students. This may require special technical and administrative arrangements (e.g., ensuring physical distancing, avoiding crowding during lab work). Seeing from several important indicators that have been implemented according to standards, the risks of occupational safety and health in the laboratory of the Cosmetology Education Study Program can be controlled. Because to create a healthy and safe work environment, synergy is needed not only from students who must try to carry out work procedures appropriately and maintain personal health but

also from work organizers to ensure Occupational Health and Safety by providing the need for Personal Protective Equipment ( PPE).

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