Volume 19 Issue 29
Originally issued as A9



Global Journal of Management and Business Research: A Administration and Management
Volume 19 Issue 9 Version 1.0 Year 2019
Type: Double Blind Peer Reviewed International Research Journal
Publisher: Global Journals
Online ISSN: 2249-4588 & Print ISSN: 0975-5853

# Analysis of Factors Affecting the Health and Safety Officer Public Health Laboratory in West Lombok

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*Abstract-* The purpose this study were (1) to analyze the factors that affect the Health and Safety Laboratory officers of health centers in West Lombok regency. (2) To analyze the factors that affect the dominant Health and Safety at Work In laboratory worker health centers in West Lombok regency. This type of research used in this study is exploratory-descriptive type of research. The research sample laboratory workers numbered 40 people. Tools used as data collection in this study was a questionnaire. Statistical analysis using factor analysis. The conclusion that can be formulated in this study correspond to the data analysis are: (1) The results of the factor analysis shows that there are four factors that shape the health and safety of laboratory personnel in West Lombok health center which is the result of the reduction of the 12 variables. Four of these factors include Individual Factors that consist of Working Environment, Economic Issues, Personalities, and Workload; Organizational factors that consist of Khemis and Conditions of Employment; Psychological Factors which consists of Physical, physiological condition, and Family Issues; and Environmental Factors consisting of Time Pressure and Role Conflict.

*Keywords:* *occupational health and safety, laboratory workers.*

*GJMBR-A Classification:* *JEL Code: J28*




*Strictly as per the compliance and regulations of:*




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# Analysis of Factors Affecting the Health and Safety Officer Public Health Laboratory in West Lombok

Alphacino Junido Loilewen [α], Agusdin [σ] & Hermanto [ρ]

*Abstrak-* **The purpose this study were (1) to analyze the factors that affect the Health and Safety Laboratory officers of health centers in West Lombok regency. (2) To analyze the factors that affect the dominant Health and Safety at Work In laboratory worker health centers in West Lombok regency. This type of research used in this study is exploratory-descriptive type of research. The research sample laboratory workers numbered 40 people. Tools used as data collection in this study was a questionnaire. Statistical analysis using factor analysis. The conclusion that can be formulated in this study correspond to the data analysis are: (1) The results of the factor analysis shows that there are four factors that shape the health and safety of laboratory personnel in West Lombok health center which is the result of the reduction of the 12 variables. Four of these factors include Individual Factors that consist of Working Environment, Economic Issues, Personalities, and Workload; Organizational factors that consist of Khemis and Conditions of Employment; Psychological Factors which consists of Physical, physiological condition, and Family Issues; and Environmental Factors consisting of Time Pressure and Role Conflict.**

*Keywords: occupational health and safety, laboratory workers.*

## I. Preliminary

Various forms of worries and problems will always be faced with the employees. Some forms of trouble going on outside work, but other difficulties Associated with the job is more dominant. In many cases, it can affect work performance so it should be a concern of management. The difficulties and problems can cause workplace accidents (Hasibuan, 2007: 57), Occupational safety and health should be a serious peratian for the management of the organization so as to minimize losses for the organization. According Meily (2010: 72), "Occupational health is an effort to maintain and improve the health status of physical, mental and social well-being of all workers as high." Preventing health problems caused by working conditions, protect workers from the risk factors work in adverse health, placement of maintenance workers in a work environment tailored to the capabilities of physiology, psychology, and concluded as the adaptation of work to man and each man to his job.

Occupational health programs showing on condition free from physical, mental, emotional, or pain caused by the working environment (Mangkunagara, 2009: 161). Health risks are all factors in the work environment that works over a period of time specified, the environment can be stressful, emotional or physical disorders.

Health problem is a complex issue, which is interrelated with other issues beyond health itself. Many factors affect the health of both the health of the individual and public health, among other things: heredity, environment, behavior, and health services. These four factors with respect to each other, when these four factors together have optimal conditions, the health status will be achieved with good Meanwhile, according Swasto (2011: 110) argues that "Occupational health involves physical and mental health." Health covers all aspects of human life, including the workplace.

Concern for the health of employees can reduce the occurrence of accidents in carrying out its work, so between occupational health and safety related and can prevent accidents in the workplace. Yuli (2005: 135) Occupational health and safety, is a system of programs designed for both workers and employers for prevention (preventive) the incidence of occupational accidents and diseases caused by working relationships within the work environment by identifying things that could potentially cause accidents and disease due to the employment relationship and anticipatory measures in case of such things. While Malthis and Jackson (2002: 245) states that Safety is a reference to the protection of a person's physical well-being of the work-related injury.

Occupational safety and health is a specialization in itself, because in addition to their implementation based on the legislation also based sciences, particularly engineering and medical sciences. Similarly, occupational safety and health is an issue that contains many aspects, such as: legal, economic and social.

Implementation of health and safety at the Health Center of West Lombok conducted jointly by the leader or laboratory worker health centers and the company's entire workforce. In the execution of the leader or laboratory penpetugas health centers may be assisted by occupational health and safety officer of the company concerned. Perugas occupational safety and

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health are the employees who have knowledge or expertise in the field of occupational safety and health, and was appointed by the leader or the laboratory staff clinic.

PHC and other health facilities are high-risk workplace safety and health officer. Therefore in terapkannya occupational safety and health in the health centers in order to provide protection for puskesmas (MoH RI, 2010). In general, there are some cases that show a lack of attention to health and safety officer working in a hospital or clinic. Research conducted by Yuli (2011) on a radiographer in the fourth attendant City Hospital In Semarang, the majority of non-compliant radiographer APD receipts in the work, and use PPE if there is supervision of the team K3. Radiographer also objected when to use handscone or mask when working.

Based on research Mauliku (2011), not all employees of the hospital. Immanuel Bandung conduct periodic medical examinations, only partially do so and the absence of hepatitis B immunization for employees. Storage of chemicals that are not equipped MSDS and hospital employees are not appropriate waste bins in place so as to cause the incidence of workplace accidents.

Rahayuningsih (2011) regular health checks and vaccinations of hepatitis B in the ED officer RSU PKU Muhammadiyah Yogyakarta has done very well and the efforts of the implementation of hazard prevention and workplace accidents has been implemented very well, although not organized occupational health and safety training in the ER.

Based on preliminary observations that have been made in several health centers in the region of West Lombok, found unsafe behavior in some health centers surveyed. There are things that are not worth outside the procedures K3 is done by the health authorities of the work, such as not using gloves when injecting medication into the patient, do not wash your hands both before and after the action, do not dispose of used needles infusion into the trash special, and not wearing gloves at the time of dispensing the drug powder. The condition is very risky cause danger to the safety and health care workers.

The above results of the study may provide a basis for further research. Research on the factors that influenceHealth and Safety Officer Laboratory in West Lombok district health center then be interesting considering the important role health clinic laboratory personnel in the diagnosis of a patient's illness, as agents of change in health development in order to contribute ideas in maintaining and upgrading the performance of the laboratory staff health centers to achieve the goal of a healthy environment.

The purpose of this study is:

1) To analyze the factors that affect the Health and Safety at Work In laboratory worker health centers in West Lombok regency.
2) To analyze the factors that affect the dominant Health and Safety at Work In laboratory worker health centers in West Lombok regency.

## II. Conceptual Frame Work

According to Robbins (2008: 796) factors that may affect the health and safety at work is composed of Environmental Factors economic uncertainty, political uncertainty, changes in technology, Organizational factors consist of task demands, role demands, the demands of interpersonal, organizational structure, organizational leadership, organizational development stage, Individual factors consist of family problems, economic problems, personality. Meanwhile, according swasto (2011; 110) problems of health and safety at work is influenced by physical factors, physiological, khemis, labor relations and working conditions, where it is also in line with Mangkunagara (2009: 162) occupational health and safety in pegaruhi by a factor personality and workload being experienced employees. Besides empirical variables that can affect the health and safety is the workload excessive, The authority is lacking, interpersonal conflicts, personal conflicts between groups, various forms of change, stress or time pressure, the noise level, low career prospects, job insecurity, lack of participation in decision-making.

## III. Research Methods

This type of research used in this study is exploratory-descriptive type of research. Explorative-descriptive type of research used in this study is expected to provide formula to find the factors that affect the Health and Safety at WorkIn the laboratory attendant health centers in West Lombok Regency, "The study is an exploratory-descriptive study was conducted to determine the value of an independent variable, either one or more variables (independent) without making comparisons, or connect with other variables" (Sugiyono, 2010: 54).

"Population is the sum total of the entire unit or element where the research was carried out" (Silalahi, 2010: 253). The population in this study are allPHC laboratory workers in West Lombok district, amounting to 40 people. Of the population of 40 persons will be entirely taken as respondents.

Tools used as data collection in this study was a questionnaire. According Silalahi (2010: 296), "The questionnaire is a set of writings about the questions that respondents noted formulated his answer, the alternative is determined openly and questions tentag indicators of concept".



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Statistical analysis using factor analysis. According Supranto (2010: 114) that the factor analysis is a procedure class that is primarily used to reduce or summarize the data from variables that are becoming less known factors and still contains most of the information contained in the original variables. Factor analysis to analyze the interaction between the variables in which all variables are the same status, no independent variables were predictors for the dependent variable. Factor analysis method classified interdependence (Simamora, 2005: 105).

Factor analysis is divided into two kinds of exploratory factor analysis (Exploratory Factor Analysis) and Confirmatory Factor Analysis (Confirmatory Factor Analysis). Exploratory factor analysis is used to measure a variable. To identify how factors in the set of the item. Confirmatory Factor Analysis is used to ascertain whether the gauge / constructs of variable susatu really explain the dimensions of these variables (Sunyoto, 2011: 118). From the description above can be concluded, analyst factors used in this study is exploratory factor analysis.

Factor analysis was used to examine any factors that can confirm a construct, which in this study are the factors that affect the Health and Safety Officer Laboratory Health Center in West Lombok, If the loading factor has a high value means that each variable is a measure of the construct (Sunyoto, 2011: 118).

The procedure in conducting factor analysis test done through three stages:

1) Calculate the correlation matrix to determine the adequacy requirement for the data in the factor analysis.
2) Looking for the extraction factor or factors that are looking for the factors that can explain the correlation between the indicators studied.
3) Rotation of factors that is looking for factors that are able to optimize the correlation between the observed independent indicators (Sunyoto, 2011: 119). To test the factor analysis performed using SPSS 20.0. for windows.

## IV. Results Research

PHC laboratory workers in West Lombok Regency mostly women, with the age range of less than 31 years, have undergraduate education, andmost have work experience in over 5 years and a half less than 5 years.

*a) Analysis BTS And KMO*

Bartlett's Test of Spherity (BTS) is a statistical test used to test the null hypothesis that the variables are not correlated in the population. Value BTS in this study after extraction decreased, from 204.237 be 188.869 with a significant level of 0,000 which shows that there is a significant relationship between the variables forming occupational health and safety laboratory worker health centers in West Lombok, so that factor analysis can be used in this study.

*Kaiser Meyer Oskin (KMO)*used to measure the adequacy of the sample (sampling adquacy). KMO value shows the relationship between variables in a set of factors. From processing KMO values obtained after extraction is increased from 0.689 to 0.655 into this study had adequate levels of sample and can be resumed.

*Table 1:* Variable MSA Final Value Research

| No. | Variables | Value MSA |
|---|---|---|
| 1. | Physical condition | 0,561a |
| 2. | Physiological condition | 0,596a |
| 3. | Khemis conditions | 0,696a |
| 4. | Work relationship | 0,643a |
| 5. | Work atmosphere | 0,791a |
| 6. | Family problem | 0,668a |
| 7. | Economy problem | 0,772a |
| 8. | Personality | 0,774a |
| 9. | Workload | 0,737a |
| 10. | time pressure | 0,616a |
| 11. | Role conflict | 0,630a |



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From the output results obtained that there is no longer a variable that has a value of less than 0.5 MSA so that 11 variables in this study will proceed to the next stage of factor analysis.

*b) Result Extraction*

The next stage is the extraction of the set of factors which are to form one or more factors, namely by using principal component analysis (Principal Component Analysis). (Santoso in Hertina 2005: 58). Ektraction The results are shown in Table 4.13., Below.

To determine the number of factors can be based on the value of eigen value, ie the value of eigen value greater than one. The higher the value eigen value of a factor, the more representative such factors as the representative of a group of variables.

Determination of the number of factors, eigenvalue, percentage of variance and the cumulative percentage of produce that Component range from 1 to 11 representing the number of independent variables. Based on Initial Eigenvalues specified column value is 1. The variance can be explained by a factor of 1 is 3,41/ 11 x 100% = 30.997%. While the second factor of 2,658 /11 x 100% = 24.167%. While by a factor of 3 at 1.292/ 11 x 100% = 11.745%. While by a factor of 4 at 1,042/ 11 x 100% = 9.471%. Total fourth factor can explain the variable of 24.167% 30.997% + + + 11.745% 76.380% 9.471% =. Thus, since the value of Eigenvalues set 1, then the total value to be taken is that> 1 which is component 1, 2, 3, and 4. This indicates that the factors that may have formed as many as three factors, factor 1, factor 2, factor 3.

*c) Stage rotation factor*

Factors shown in the table has not shown on any factors which become elements of a group that has been set.

*Table 2:* Variable Rotation Research

| No. | Variables | FACTOR | | | |
|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 |
| 1. | Physical condition | | | 0.916 | |
| 2. | Physiological condition | | | 0.821 | |
| 3. | Khemis conditions | | 0.797 | | |
| 4. | Work relationship | | .818 | | |
| 5. | Work atmosphere | 0.854 | | | |
| 6. | Family problem | | | 0,392 | |
| 7. | Economy problem | 0.887 | | | |
| 8. | Personality | .834 | | | |
| 9. | Workload | 0.696 | | | |
| 10. | time pressure | | | | 0,880 |
| 11 | Role conflict | | | | 0.547 |

*Extraction Method: Principal Component Analysis.*
*Rotation Method: Varimax with Kaiser Normalization*,
*A Rotation converged in 7 iterations.*

To define the factors that make up the group, the matrix component needs to be created, which would then be rotated again using varimax rotation. The result of the rotation of these factors is the 11 variables which are grouped into four factors as shown in Table 4:15. Viewed from 4:15 table. above, there are 11 explanatory variables were classified into four factors. To 11 variables has considerable influence in the amount of 76.380%. To 11 variables grouped into four factors can diuaraikan as follows:

1) The first factor has an eigenvalue above 1 is 3,410 and the variance of 30.997%. This means that the variables that affect the health and safety of laboratory personnel health centers in West Lombok has an influence in the form of a model of 30.997% called Individual Factors that consist of Working Environment, Economic Issues, Personalities, and Workload.
2) The second factor has eigenvalue above 1 is 2.658 and the variance of 24.167. This means that the variables that affect the health and safety of laboratory personnel health centers in West Lombok has an influence in the form of a model of 24.167% called Organizational factors that consist of Khemis Conditions and Employment.
3) The third factor has eigenvalue above 1 is 1.292 and the variance of 11.745. This means that the variables that affect the health and safety of laboratory personnel health centers in West Lombok has an influence in the form of a model of 11.745% called Psychological Factors which consists of Physical, physiological condition, and Family Issues.
4) The fourth factor, has eigenvalue above 1 is 1.042 and the variance of 9.471. This means that the variables that affect the health and safety of



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laboratory personnel health centers in West Lombok has an influence in the form of a model of 9.471% called Environmental Factors consisting of Time Pressure and Role Conflict.

## V. Interpretation

The concept of the factors that can affect the health and safety has been expressed by some experts in the field of management. According to Robbins (2008: 796) the factors that may affect the health and safety at work is a factor of environment that consists of economic uncertainty, political uncertainty, changes in technology, organizational factors consist of task demands, role demands, the demands of interpersonal, organizational structure, leadership organization, organization development stage, individual factors consist of family problems, economic problems, personality. Meanwhile, according Swasto (2011; 110) occupational health and safety issues is influenced by physical factors, physiological, khemis, labor relations and working conditions. This opinion is in line with Mangkunagara (2009:

Opinion Robbins (2008), Swasto (2011) and Mangkunagara (2009), is a formulation of the determining factors of health and safety at work which have the same properties when associated with factors that are formed in the research results. However, there is a difference in the aspect of the number of factors formed and classification of each factor resulting from the analysis. Results of the analysis showed that there are four factors that affect the health and safety of laboratory personnel PHC as Individual Factors that consist of Working Environment, Economic Issues, Personalities, and Workload; Organizational factors that consist of Khemis and Conditions of Employment; Psychological Factors which consists of Physical, physiological condition, and Family Issues;

Differences occur between the basic theory to the analysis of research that found to be caused by several things. First, the formulation of the theory of forming health and safety of laboratory personnel PHC individuals from Robbins (2008), Swasto (2011) and Mangkunagara (2009) can be said is still very common that can be followed by various types of organizations in both organizations that are profit orientation and social orientation , If the object is associated with the research at the Laboratory of Public Health Center in West Lombok who have more specific work orientation is the social orientation of the variables is reduced to a smaller, but the factor becomes more and more. Second,

Based on the analysis of data on 12 variables comprising Physical Condition, Condition of Physiological, Conditions Khemis, Employment, Working Environment, Job Stress, Family Issues, Economic Issues, Personalities, Workload, Pressure Time, Role Conflict reduced and analyzed using factor analysis to see the output value of the MSA (Measure Sampling Adequacy) of each of those variables. If the MSA value of the variable is less than 0.5, then these variables will be excluded in the analysis process. From the results obtained 11 variables output value of more than 0.5 MSA variable Physical Condition, Physiological Condition, Condition Khemis, Employment, Working Environment, Family Issues, Economic Issues, Personalities, Workload, Time Pressure, Role Conflict. While,

Based on the analysis of the loading factor that shows a breakdown of each variable showed that the most dominant factor shaping Health and Safety laboratory worker health centers in West Lombok are the Individual Factors that consist of Working Environment, Economic Issues, Personalities, and Workload. This indicates that in order to improve the health and safety of laboratory personnel health centers in West Lombok management Hospital / Health need to pay attention to Working Environment, Economic Issues, Personalities, and Workload.

Safety and health should be a serious peratian for management because it can minimize the loss to the organization. Various forms of worries and problems will always be faced with the employees. Some forms of trouble going on outside work, but other difficulties associated with the job is more dominant. Management must be able to build a good working atmosphere. Good working atmosphere is the situation and conducive working atmosphere and comfortable. Working comfort should be a priority so that the laboratory staff feel comfortable and at ease to work.

This convenience will make priorities and targets can be met on time, even faster. The main indicator of a comfortable working atmosphere looks a close relationship between superiors and subordinates. The relationship between superiors and subordinates like family, bosses as parents who are ready to provide knowledge and experience. As for employees, provide new ideas and creative and innovative ways to support the company's progress. Convergence of knowledge and experience from superiors and subordinates' ideas and will provide positive synergies that can boost performance achievement.

In addition to salaries, the main thing is their employees look for benefits like health insurance, transportation facilities, and so forth that make employees work more quietly and bolster productivity. It would be better if the organization gives bonuses to reduce the economic problems of laboratory personnel.

In running the government's development organization, it takes those right and competent in their field. In addition, there is also another important thing to take to be successful, namely the right personality of each attendant. Organizations have a variety of personality types and appropriately position could be



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crucial for organizations because it can bring a variety of creations.

## VI. Conclusion

The conclusion that can be formulated in this study correspond to the data analysis are as follows:

1) From the results of factor analysis showed that there were four factors that shape the health and safety of laboratory personnel in West Lombok health center which is the result of the reduction of the 12 variables. Four of these factors include Individual Factors that consist of Working Environment, Economic Issues, Personalities, and Workload; Organizational factors that consist of Khemis and Conditions of Employment; Psychological Factors which consists of Physical, physiological condition, and Family Issues; and Environmental Factors consisting of Time Pressure and Role Conflict.
2) The results of factor analysis showed that the most dominant factor affecting the health and safety of laboratory personnel health centers in West Lombok are the Individual Factors that consist of Working Environment, Economic Issues, Personalities, and Workload.

## VII. Recommendation

One of the variables of the most dominant factors that affect the health and safety officer at the health center laboratory workload West Lombok. In addition, the variable workload dirasakah laboratory workers based responses are at very high category with the highest response value compared with other variables. To cope with a high workload, some things need to be done such as to minimize distractions. Tidy up the work space and minimize the disruption is the first step to cope with a heavy workload. Working in a messy room is not only annoying, but also make it difficult to find the items you need to complete the job. Cluttered work area is also wasted time looking for a job needs.

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