Risk Factor Identification Occupational Health and Safety
Medical Record Officer Filing Section in Hospital
(Literature Review)

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ABSTRACT

Background: Filing service is one of the medical record work units that responsible for the
storage and maintenance of medical record files. Filing is one of the work units in medical
records that are responsible for the storage and maintenance of medical record files. The
work implementation process has risks that can threaten the safety and health of officers.
Therefore, it can result in low quality of work. An attempt that can be performed to decrease
the risk of accident is the implementation of good Occupational Health and Safety. Through
several studies related to Occupational Health and Safety in Filing Unit, some of the factors
causing work accidents are physical, chemical, biological, biomechanical factors related to
ergonomics, individuals, and psychosocial, which causes the officers to feel unsafe and
uncomfortable at work. Therefore, this study aims to identify what are the risk factors for
occupational health and safety to medical record officers in the filing section at the hospital.

Methods: The research method was qualitative research. The data collection used a literature
study. The subjects of the study were medical record officers in the filing section, while the
object of the study was occupational health and safety.

Results: The results of the study, according to 10 journals reviewed, show that factors that
become the risk to occupational health and safety of medical record officers in the filing
section are lighting, air temperature, smells caused by old medical record files, virus
exposure, medical record storage rack, awareness of using PPE, and work relationship
between officers.

Conclusions: It is expected that the hospital can improve work facilities and infrastructures,
and the self-awareness of medical record officers to maintain safety and comfort at work is
required so that a good and optimal working atmosphere can be created.

Keywords: Occupational health and safety, literature review, record officer medical, filing.

INTRODUCTION

The development and improvement of medical services is aimed at achieving better quality of
service. The goal of providing health services is to improve national health and raise public
awareness about the importance of maintaining optimal health. Hospitals are one of the
providers of health services that plays an important role in achieving these objectives. A
hospital is a health-care facility that provides comprehensive individual health-care services,
including inpatient, outpatient, and emergency care (UU RI No.44, 2009).

The medical record is one of the hospital's units, and it has a significant impact on
hospital management implementation. A medical record is a file that contains notes and
documents about the patient's identity, examination, treatment, actions, and other services
provided to the patient (Permenkes RI No.269, 2008). The establishment of a medical record
unit is intended to aid in the achievement of administrative order. Without a medical record
unit, it will be difficult for the hospital to achieve the success of hospital administration as
expected. The filling of medical records is carried out by all health workers who are responsible for each patient according to the actions and services that have been provided. Medical records are important and confidential documents, so file storage and protection are required to avoid or reduce physical damage or the contents of medical records, which can occur at any time.

Filing is a medical record work unit responsible for the process of storing and structuring systematic files in accordance with procedures and guidelines in order to simplify and shorten the time of medical record officers when storing and retrieving medical record files (Farlinda, Nurul dan Rahmadani, 2017). Not only are the files stored, but they are also distributed on a daily basis based on patient arrival and needs. Medical record officers are also required to maintain and improve the quality of service by lowering the risk which can be happened at work.

Occupational Health and Safety is an effort to create a sense of security, comfort, and protection at work without worrying about the hazards and risk that occur when performing work. Occupational health and safety procedures must be clear and applied to medical record storage (UU RI No. 432, 2007). As a result, this is one of the reasons for the ups and downs in service quality and work productivity of medical record officers. There are still some filing rooms that do not follow the standard guidelines that have been established, posing a risk to the medical record officer. These risks include respiratory problems caused by pollution, slashed files caused by sharp folders, crushed medical record files, joint and bone disorders, and itching when returning and retrieving medical record files (Zahroh, W Permana dan Deharja, 2020).

Several factors can contribute to the risk of illness and accidents, including physical, chemical, biological, biomechanics related to ergonomics, individual, and psychosocial factors (Permenkes RI No 48, 2016). Data on physical factors (lighting, air temperature, humidity, and so on) were derived from these factors. Data from research results at the Roemani Muhammadiyah Hospital Semarang in 2019 revealed that the average lighting in the filing room was around 56.8 lux, the temperature was 23.9 °C, and the humidity in the filing room was around 57 percent, all of which were within the standard limits (Anggita Sari dan Wulandari, 2020). According to research at Banyumas Hospital, the lighting in the general filing room was 31 lux, the temperature was 27.6°C, and the humidity in the filing room was around 65.6 percent (Irmaawati et al., 2019). According to data from RSUD K.R.M.T Wongsongoro Semarang on the results of research on the use of personal protective equipment (PPE) which is included in physiological factors regarding working methods, the percentage of using masks reaches 91 percent and the percentage of using gloves is 41 percent (Susanto, Pujiastuti dan Cahyaningsih, 2019). Some of these data are examples of problems that can interfere with the implementation of occupational health and safety which can affect the medical record officer in the filing section of the hospital. This study aims to identify what are the health and safety risks to the medical record filing officer at the hospital in working time.

**METHODS**

This study is a type of qualitative research that employs a data collection strategy based on a literature review. The primary source is in the form of research journals from 2011 to 2021, which are chosen using several online databases, including Indonesia One Search, Digital Reference Garba, Microsoft Academic, Research Gate, and Google Scholar.
In processing to find the data, the script screening stage employs a prism statement, which consists of four phases: identification, screening, eligibility, and inclusion or inclusion (Moher et al., 2009). The keywords used in the journal search process are occupational health and safety, filing, and medical records. The database search process also includes Indonesia One Search, Digital Reference Garba, Microsoft Academic, Research Gate, and Google Scholar. This search resulted in a total of 408 journals that were found when using keywords in the database. This search resulted in a total of 408 journals that were found when using keywords in the database. Following that, the identification of duplicate journals discovered 7 duplicate journals, which had to be eliminated, and the remaining 401 journals. The remaining journals proceeded with the screening stage by adjusting the inclusion criteria that had been established; 391 journals were found to be unsuitable and thus could not be studied. As a result, only 10 journals were obtained, with 8 being qualitative study journals and 2 being quantitative study journals. The chosen journals have also gone through a manuscript evaluation process. Several points were evaluated during the manuscript evaluation process, including: 1) Describing the main content of the research; 2) Making a connection to the chosen theme; 3) Avoid using abbreviations. 4) In accordance with the science being studied; 5) Articles include the following sections: Introduction, Methods, Results, Analysis, Conclusion, and Discussion. 6) There is a reason and a goal for conducting research. 7) A strong and relevant library.
Table 1. Previous Research

<table>
<thead>
<tr>
<th>No</th>
<th>Author and Publishing Year</th>
<th>Journal’s title</th>
<th>Research Design</th>
<th>Summary Research</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>(Anggita Sari dan Wulandari, 2020)</td>
<td>Occupational Health Disorders and Accidents in Medical Record Unit Officers at the Filing Section of Roemani Muhammadiyah Hospital Semarang 2019</td>
<td>Descriptive, Qualitative</td>
<td>Causes of work-related health problems and accidents were discovered. Physical factors include light with an average overall filing space of about 56.8 lux and a temperature of 23.9°C obtained. The individual factor of personal protective equipment (PPE) use that is rarely implemented.</td>
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<tr>
<td>2</td>
<td>(Irmawati et al., 2019)</td>
<td>Occupational Health and Safety (K3) in the Filing Section</td>
<td>Qualitative, Cross-Sectional</td>
<td>Several factors that contribute to occupational health and safety include lighting in the general filing room, which has a result of 31 lux, and lighting in the integrated mental health filing room, which has a result of 595.8 lux. The general filing room had a temperature of 27.6°C, while the integrated mental health filing room had a temperature of 27.5°C. The humidity in the general filing room is 65.6 percent, while it is 68 percent in the integrated mental health filing room.</td>
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<td>3</td>
<td>(Susanto, Pujiastuti dan Cahyaningsih, 2019)</td>
<td>Occupational Health and Safety on Medical Record Storage at Medical Record Installation</td>
<td>Descriptive, Qualitative</td>
<td>In the filing section, the use of Personal Protective Equipment (PPE) as a factor of occupational health and safety. Based on 54 observations of 9 medical record storage officers, it was discovered that 91 percent of officers wore masks and 41 percent wore hand protective equipment or gloves.</td>
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<td>4</td>
<td>(Zahroh, W Permana dan Deharja, 2020)</td>
<td>K3 Risk Management Analysis in Filing Section of Dr. RSUP. Soeradji Tirtonegoro Klaten</td>
<td>Qualitative</td>
<td>Identification of occupational health and safety risks discovered several risks that occurred in the filing room, including officers’ lack of attention to the use of PPE, particularly gloves. Officers have complained about roll o’pack being too high, and facilities to make it easier for officers to reach shelves are not yet available.</td>
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<td>5</td>
<td>(Windari et al., 2018), Review of Ergonomic Aspects of Filing Room Based on Anthropometry of Filing Officers on Occupational Safety and Health (K3) Officers</td>
<td>Qualitative, Case-Study</td>
<td>The ergonomics of the filing room, the average temperature and humidity of the filing room were 27.3°C and 55%, respectively, were some of the items carried out in research on occupational health and safety in the filing room. Uneven lighting, low noise level due to the close proximity of the filing space, and an average distance of 60 cm between storage shelves</td>
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<tr>
<td></td>
<td>Authors</td>
<td>Title</td>
<td>Methodology</td>
<td>Description</td>
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<tr>
<td>6</td>
<td>Crystal, Ardianto dan Farlinda, 2020</td>
<td>Work Risk Analysis of Inpatient Filling Officers by Using Severity Assessment at Dr. RSUP. Hasan Sadikin Bandung</td>
<td>Qualitative</td>
<td>Work accident risks and work system risks can also be found in the storage room, such as officers being hit by a falling shelf or file, slipping when retrieving a medical record file from a shelf, feeling sore or back pain in the back and hands, and being hit by dust or other particles that can cause respiratory problems.</td>
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<tr>
<td>7</td>
<td>Jepisah, 2020</td>
<td>Factors Affecting Ergonomics of Filling Rooms on Access to Medical Record Officers at Siak Hospital in 2018</td>
<td>Descriptive, Qualitative</td>
<td>Due to limited space, the location of the filing room at Siak Hospital is still not in accordance with ergonomics, which greatly affects the access of medical record officers, making it difficult to do work and potentially affecting the health of medical record officers.</td>
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<tr>
<td>8</td>
<td>Aji Suntoso dan SugArsi, 2017</td>
<td>Overview of the Application of Risk Management in the Filing Unit of RSUD Dr. Moewardi</td>
<td>Descriptive, Qualitative</td>
<td>In RSUD Dr. Moewardi identified several risk factors, including physical factors such as noise, chemical factors such as ink and odors caused by the smell of medical record paper stored on the medical record rack for an extended period of time, biological factors such as insects and viruses, and ergonomic factors.</td>
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<tr>
<td>9</td>
<td>Febiana dan Novita Ardyani, 2018</td>
<td>The Effect of Occupational Safety and Health (K3) on the Work Productivity of Officers in the Medical Record Filing Unit of Al-Ihsan Hospital</td>
<td>Descriptive, Quantitative</td>
<td>The implementation of occupational safety and health in the filing room is not up to standard, especially when taking into consideration the size of the room and the unavailability of a vacuum cleaner in the filing room and lack of storage cabinets.</td>
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<tr>
<td>10</td>
<td>Nurbaeti, Jaenudin dan Indra Nuraeni, 2019</td>
<td>The Effect of Occupational Safety and Health (K3) on the Work Productivity of Officers in the Medical Record Filing Unit of Al-Ihsan Hospital</td>
<td>Descriptive, Quantitative</td>
<td>The impact of health and safety in RSUD Waled Kab. Cirebon is related to the ergonomics aspect, with the results obtained a temperature of 29.4°C and humidity of 64%. The measurement of light in the storage room with a digital luxmeter from 11 lighting level measurement results does not meet ergonomic standards, namely with a value of 177.0 lux, 157.6 lux, and 22.8 lux.</td>
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In these 10 journals, risks related to health and safety for medical record officers in the filing section of the hospital, through the categorization of factors, will be explained.
Table 2. Identification of Occupational Health and Safety Risks

<table>
<thead>
<tr>
<th>No</th>
<th>Factor</th>
<th>Author</th>
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<tbody>
<tr>
<td>1</td>
<td>Physical</td>
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<tr>
<td></td>
<td>Temperature</td>
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<td></td>
<td>Humidity</td>
<td></td>
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<td></td>
<td>Lighting</td>
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<td>2</td>
<td>Chemistry</td>
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<td></td>
<td>Cleaning liquid or furnishing containing solvents that can cause eye irritation and respiratory problem</td>
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<td>3</td>
<td>Biology</td>
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<td></td>
<td>Virus</td>
<td>(Zahroh, W Permana dan Deharja, 2020), (Aji Santos dan Sugiarsi, 2017)</td>
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<tr>
<td></td>
<td>Disease transmission among employees</td>
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<td>4</td>
<td>Biomechanics related to ergonomics</td>
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<td></td>
<td>Workplace hazard</td>
<td>(Zahroh, W Permana dan Deharja, 2020), (Windari et al., 2018), (Crystal, Ardianto dan Farlinda, 2020), (Jepisah, 2020), (Aji Santos dan Sugiarsi, 2017), (Febiana dan Novita Ardyani, 2018), (Nurbaeti, Jaenudin dan Indra Nuraeni, 2019)</td>
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<tr>
<td></td>
<td>Risks caused by equipment</td>
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<td></td>
<td>Hazard in the workplace or the environment</td>
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<tr>
<td>5</td>
<td>Individual</td>
<td></td>
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<tr>
<td></td>
<td>Lifestyle</td>
<td>(Anggita Sari dan Wulandari, 2020), (Susanto, Pujiastruti dan Cahyaningsih, 2019)</td>
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<td></td>
<td>Health Status</td>
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<td></td>
<td>Skeletal muscle pain</td>
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<tr>
<td>6</td>
<td>Psychosocial</td>
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<tr>
<td></td>
<td>Work load</td>
<td>(Febiana dan Novita Ardyani, 2018)</td>
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<td></td>
<td>Job dissatisfaction</td>
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<td></td>
<td>Workplace conflict</td>
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<td></td>
<td>Lack of appreciation</td>
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<td></td>
<td>Inadequate support from coworkers and superiors</td>
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<td></td>
<td>Uncertain duties and responsibilities</td>
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According to the 6 health and safety risk factors for medical record officers in hospitals, the most mentioned were biomechanical factors related to ergonomics that were 8 journals, physical factors was 6 journals, and individual factors was 4 journals from each factor in 10 journals.

DISCUSSION

1. Physical Factor

Lighting is one of the physical factors, with a standard light intensity of at least 200 lux in a medical record room and 100 lux in a storage room (Permenkes RI No. 7, 2019). According to the findings of the study (Anggita Sari dan Wulandari, 2020) conducted in 2019 at the Roemani Muhammadiyah Hospital Semarang, the lighting data for the filing room in the back left corner was 115 lux and the front right corner was 22 lux, for an average lighting of 56.8 lux. A proprietary study (Irmawati et al., 2019) at Banyumas Hospital discovered that the lighting in the general filing room was 31 lux and 595.8 lux in the integrated mental health filing room. As a result, there is no lighting that meets the standard, and the cause of the lighting that does not meet the standard is unknown for certain in the research journal that is being studied. Owned research (Crystal, Ardianto dan Farlinda, 2020) at Dr. RSUP. Hasan Sadikin Bandung and research conducted (Jepisah, 2020) at Siak Hospital in 2018 were in accordance with the standard, but the amount of lighting was not explained in detail.

According to Minister of Health of the Republic of Indonesia No. 7 of 2019 concerning Hospital Environmental Health, the standard for air temperature in the workplace is 20°C-28°C. Temperature was measured at 23.9 °C in the study (Anggita Sari dan Wulandari, 2020) at the Roemani Muhammadiyah Hospital Semarang in 2019. According to research (Irmawati et al., 2019), the filing room at Banyumas Hospital is divided into two sections: the general filing room is 27.6°C, and the mental health filing
room is 27.5°C. Another study (Windari et al., 2018) found that the average temperature in the filing room of the PKU Muhammadiyah Yogyakarta hospital was 27°C. The proprietary study's air temperature (Anggita Sari dan Wulandari, 2020), (Irma wati et al., 2019), and (Windari et al., 2018) were all within the standard. Another study (Crystal, Ardianto dan Farlinda, 2020) at Dr. RSUP. Hasan Sadikin Bandung met the standard, but it is not explained with a specific value.

In addition, according to the Minister of Health of the Republic of Indonesia No. 7 of 2019 concerning Hospital Environmental Health, the standard of room humidity in health facilities is 40% - 60%. In accordance with established standards, a proprietary study (Windari et al., 2018) in the filing room of the PKU Muhammadiyah Yogyakarta hospital obtained a humidity of 55%. In a study conducted at the Banyumas Hospital (Irma wati et al., 2019), it was discovered that the humidity in the general filing room was 65.6% and the humidity in the mental health filing room was 68%, which did not meet the standard establishment.

One of the physical factors is noise, which has a maximum noise level of 85 decibels (dBA) (Kepmenkes RI No. 1405, 2002). The research conducted at Dr. Moewardi hospital (Aji Santoso dan Sugiar si, 2017) has been controlled by installing a glass door that can muffle the sound from outside so that the noise in the room is less than 85 dBA, which is in accordance with the standard.

2. Chemical Factors

Chemical factors in the form of ink and odors caused by the smell of medical record paper stored on the medical record rack for a long time can disrupt officers’ concentration and become a risk of work accidents if it occurs in the long term, according to research of (Aji Santoso dan Sugiar si, 2017) at Dr. Moewardi hospital. Chemical factors in Dr. Moewardi hospital are in violation of Minister of Health of the Republic of Indonesia No. 48 of 2016.

3. Biology Factor

Biological factors, such as viruses, are one of the causes of workplace accidents or decreased officer productivity in completing their duties (Permenkes RI No 48, 2016). According to research (Zahroh, W Permana dan Deharja, 2020) at RSUP Dr. Soeradji Tirtonegoro, biological factors such as virus, bacteria, and dust exposure have a direct impact on filing officers, resulting in itchy palms, coughing, sneezing, and even infections that can interfere with work optimization. Biological factors in the form of viruses are also in accordance with research conducted at RSUD Dr. Moewardi who is still an impediment to work if the officers are infected with the virus (Aji Santoso dan Sugiar si, 2017). Exposure to this virus can be reduced by using PPE and increasing each medical record officer’s self-awareness so that they can work safely and comfortably while producing high-quality work.

4. Biomechanical Factors related to Ergonomics

There are three hazards in biomechanical factors related to ergonomics: hazard related to work, hazard related to equipment, and hazard related to the environment or workplace (Permen kes RI No 48, 2016). Hazard related to equipment are the most common factors found in several studies, particularly those related to workplace facilities, such as medical record storage racks. According to research (Zahroh, W Permana dan Deharja, 2020) conducted at RSUP Dr. Soeradji Tirtonegoro, the medical record file storage rack is too high and there is no folding ladder available to reach the shelf, causing officers to complain of back, neck, and shoulder pain. This occurred in a study (Crystal, Ardianto dan Farlinda, 2020) at Dr. RSUP. Hasan Sadikin Bandung, (Jepisah, 2020) at Siak Hospital in 2018, and research (Nurbaeti, Jaenudin dan Indra Nuraeni, 2019) at Waled Hospital in Cirebon Regency. The research conducted at RSUD Dr. Moewardi by (Aji Santoso dan Sugiar si, 2017) regarding the complaints of difficult-to-reach shelves and the lack of stairs, but these problems have been evaluated so that officers can access medical record files more easily and safely. According to the study (Windari et al., 2018), a step or ladder tool
has been available at PKU Muhammadiyah Yogyakarta Hospital since the beginning to make it easier for officers to carry out their duties.

Hazard in surrounding or workplace area become one of the factors affecting occupational safety especially medical recorder in a hospital. In addition, according to proprietary research (Jepisah, 2020), to shelves and the lack of footholds or ladders, the size of the room is one of the obstacles for officers in carrying out their duties. Another study by (Febiana dan Novita Ardyani, 2018) at Al-Ihsan Hospital obtained 62.5 percent results in taking questionnaires from 8 medical record officer respondents who stated that the medical record file filing room was quite spacious.

5. Individual factors

The use of personal protective equipment (PPE) in a hospital environment is one of the responsibilities of healthcare professionals. The medical records working department of the Recording Department is required to wear masks and gloves when placing medical records on the filing shelf. Moreover, study by (Anggita Sari dan Wulandari, 2020) at Roemani Muhammadiyah Hospital Semarang, two filing officers were used as respondents, and it was discovered that filing officers rarely use PPE at work. In addition there was a study of (Susanto, Pujiastuti dan Cahyaningsih, 2019) which was conducted at the K.R.M.T Wongsonengoro Hospital Semarang on the use of personal protective equipment (PPE) for medical record officers in the filing room. PPE consists of the use of masks and gloves; according to the results obtained from 9 respondents, 91 percent of officers used masks and 41 percent of officers used gloves. Officers have a low level of awareness regarding the use of gloves because it is believed that the use of gloves can impede work. The use of PPE is one of the individual factors, namely lifestyle, especially on attitudes when carrying out work; if the use of PPE is low, officers may experience work accidents coughs and even colds, which can reduce work productivity.

6. Psychosocial Factors

A good working relationship between employees will reduce workplace conflicts and foster mutual support among colleagues, which will benefit occupational health and safety because officers will be able to work comfortably (Permenkes RI No 48, 2016). In a proprietary research journal (Febiana dan Novita Ardyani, 2018) at Al-Ihsan Hospital, 8 medical record filing officers were used as respondents, and the medical record officers had a good relationship with all employees at the hospital. Good employee relations can help to create a safe and comfortable work environment, which has a direct impact on the health and safety of the medical record filing officer.

CONCLUSION

The conclusion from the identification of health and safety risk factors for medical record filing officers at the hospital includes several things, including four physical factors consisting of lighting, temperature, humidity, and noise, the majority of which are in accordance with established standards. Ink and odors from medical record files that have been stored on the medical record shelf for a long time can affect sensitivity to smell, interfering with comfort and concentration while working. Virus exposure is a biological factor that continues to endanger the health and safety of medical record filing officers.

Medical record storage racks contain equipment hazard that are still a risk factor for the health and safety of the medical record filing officer. Due to a lack of compliance at the time of implementation, the use of Personal Protective Equipment (PPE) is one of the individual factors that poses a risk to the health and safety of the medical record filing officer. Employee relations are one of the psychosocial factors that continue to influence the medical record filing officer's health and safety.
ACKNOWLEDGEMENTS

Thank you to the reviewers and the Head of the School of Health Sciences, Dr. Soetomo Soetomo Hospital Surabaya. Thank the Ministry of Finance’s Education Fund Management Institut (LPDP) for funding.

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