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The Damages of Medical Records in the Outpatient Room in Dr. R. Soeharsono Lv.III Hospital Banjarmasin

Septy Handayani [1]*, Arief Budiman[2], Rabiatul Adawiah[3]
Health and Nursing Military Academy Tanjung Pura

ABSTRACT: Medical records function to record and store identity, diagnose, treatment, and services history provided to patients in the health facilities. This study aims to determine the factors that cause damage to medical records in the outpatient room at Dr. R. Soeharsono Lv.III Hospital, Banjarmasin. This is descriptive research with data derived from observations, interviews, and measurements. The results showed that the highest incidence of document damage in the 2019 was 24 files. Lighting conditions ranged from 40-99 lux. The temperature in the medical record room is 18º C -28º C and the fire extinguisher is placed outside the filing room. In the medical record room, there are 2 damp documents. The presence of nuisance insects was not found and there were officer activities such as eating or drinking in the room. There were 2 medical record documents that had faded in the patient's name.

Keywords*:* Damage, Medical Records, Filing, Outpatient, Hospital

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Corresponding Author: septyh2@gmail.com

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INTRODUCTION

Hospital is a comprehensive part of a social and medical organization that functions to provide complete health services to the community, both curative and rehabilitative, and a centre for training health workers, as well as for biosocial research (Budi, 2011). Administration of medical records is one of many ways to improve the quality of services in hospitals. Filing, in terms of medical record and health information, is the activity of storing or managing medical record documents to facilitate retrieval (Rustiyanto, 2011). Filing system is a part of medical record unit with purposes to store medical record documents, provide medical record documents for various purposes, protect medical record's confidentiality and against the danger of physical, chemical and biological damages.

The concerns out of medical record's security are danger and damage to the medical record itself. The aspects of the damage in question includes physical, chemical, biological and thievery. The physical aspect is damage to documents, such as paper and ink quality, caused by sunlight, rain, flooding, heat and humidity. The chemical aspect is damage to documents caused by food, drink, and chemical substances. The biological aspect is damage to document caused by rats, cockroaches and termites (Wijiastuti, 2014).

Based on the results of a preliminary study obtained in the outpatient filing room on May 23rd, 2022 at Dr. R. Soeharsono Lv.III Hospital in Banjarmasin, there were several medical records that had piled up due to no spaces available. Thus, medical records were forcibly stored into the filing (storage) rack and causes damage, torn or bent on the medical records. It exposes medical records to physical (no adequate air conditioning), biological (no camphor to protect medical records from insects), and chemical (there were food and drink and there were not fire extinguisher in the outpatient filing room) aspects of damage. This study was conducted to determine the factors causing damage to medical records in the outpatient filing room at Dr. R. Soeharsono Lv.III Hospital in Banjarmasin in 2022.

METHOD

This is a descriptive study conducted in Dr. R. Soeharsono Lv.III Hospital in Banjarmasin from 1st of July to 8th of August 2022. Data collection was done through observation, interviews and measurements. The main informant in this study was the head of the medical record's installation at Dr. R. Soeharsono Lv.III Hospital. For triangulation purpose, another 2 informants are filing officers in the outpatient ward of Dr. R. Soeharsono Lv.III Hospital, Banjarmasin.

Population in this study were 50 medical records from the outpatient filing room. All of them were used as study's samples. The variables in this study were damages to medical records, either intrinsic or extrinsic factors (physical, biological, chemical), in the outpatient filing room. The instruments used to conduct this study were interview and observation guidelines. The data analysis technique used in this study was carried out at the time of data collection and after the completion of data collection within a certain period to identify the factors of medical record's damages in the outpatient filing room of

Dr. R. Soeharsono Lv.III Hospital, Banjarmasin. The data analysis process used in this study is qualitative analysis.

RESULT

Dr. R. Soeharsono Lv.III Hospital is owned by Indonesian National Military-Land Force (TNI-AD) and located at St. Mayjen Sutoyo no. 408, Pelambuan, West Banjarmasin, Banjarmasin, South Kalimantan. The following are the results of the identification of damaged medical records at Dr. R. Soeharsono Lv.III Hospital.

Intrinsic Factors

a. Paper Type
   Paper used as medical record files were HVS A4/70 GSM and ivory paper-map folder.
b. Ink Quality
   Ink used to write the documents was black-colored, oil-based ink. The good quality of ink used on the documents makes it not easily to fade.

Extrinsic Factors

a. Physical Aspect
   Medical record storage system was carried out by inserting documentsinto an open shelf. There were 20 white metal open shelves with the dimensions of 1.98 m high x 89.7 cm. The sub-shelf's dimension is 32 cm high x 40 cm wide.

Picture 1. White Metal Shelves in the Medical Record Filing Room.

As for some storage devices were 1 grey Roll O Pack with the dimension of 2.19 m high x 1.60 m wide and sub-shelf's dimension of 36 cm high x 74 cm wide.

Pitcure 2. Grey Roll O Pack in the Medical Record Filing Room.

In addition, 6 white boxes with dimensions of 39.1 cm high x 1.34 m wide were also used in Dr. R. Soeharsono Lv. III Hospital, Banjarmasin, due to the limited amount of storage racks/compartments.

Picture 3. White Boxes in the Medical Record Filing Room.

Based on the results of interview with the main informant, it was found that there was a particular SOP (Standard Operating Procedure) regarding the storage/filing of medical records and the person in charge of the SOP, but there were not particular rules of storage room's temperatures in the outpatient filing room. This is in accordance with the following interview:

> *"There is a special SOP for storing medical records. The person in charge [of the SOP] is the Director of Dr. R. Soeharsono Lv. III Hospital in Banjarmasin and the one who compile it was medical record installation, there is also temperature regulation and its SOP" (Main Informant)*

Based on the results of the interviews with main informant and triangulation informants regarding to the obstacles faced in the outpatient

filing room at Dr. R. Soeharsono Lv. III Hospital was difficulty to store documents in large amount due to small room.

Based on observations conducted in the outpatient filing room at Dr. R. Soeharsono Lv. III Hospital, extrinsic factors found inside the room were hot temperature due to there were not windows inside, there was not leaking roof, too full and narrow shelves made the medical records were put into the filing rack with forces and then causes damages, torn and bent on medical records. Fully stocked shelves eventually led to medical records had to be put on regular tables.

Temperature humidity, average temperature and average of air humidity are as follows.

Table 1. The Temperature and Humidity in Medical Record Filing Room.

	Time	**Morning**	**Afternoon**	**Evening**
Temperature and Humidity	29th July 2022	20^0C – 45%	20^0C – 45%	20^0C – 45%
	5th August 2022	20^0C – 45%	20^0C – 45%	20^0C – 45%

There was not leaky roof from the observation, but there was a leaking AC and it was immediately repaired. The medical record room is equipped with cleaning tools such as brooms, mops, and cleaning activities are carried out every morning and evening.

Based on the results of interviews conducted, the medical record room is equipped with a portable fire extinguisher that located outside of the room. The lighting comes from 4 lamps ranging from 40-99 lux which is measured using a light meter application. The lighting conditions were not evenly distributed in all corners of the room because the incoming light was blocked by high filing shelves.

b. Biological Aspect
Based on the results of observations conducted in a humid and moldy medical record room, there were no damp and moldy documents. In addition, a history of AC water seepage was also found on the walls. Based on the results of interviews conducted to officers, as many as 3 respondents, including respondent 1 namely the head of the medical record room, which stated that the condition of the medical record documents in the hospital filing room were found to be damaged, especially the cover. Meanwhile, respondent 2 namely the filing officer, stated that there were damaged and torn documents.

c. Chemical Aspect
Based on the results of observations on eating and drinking activities at the medical record filing room at Dr. R. Soeharsono Lv.III Hospital, there were

medical record officers who carry out eating and drinking activities in the filing room. Based on aspect of nuisance from insects, termites or other animals in the medical record room of Dr. R. Soeharsono Lv.III Hospital, there were not insect, termites and other animals found, except mosquitoes.

DISCUSSION

Intrinsic Factors

a. Paper Type

HVS A4 paper (210x297) 70GSM (gram per square meter), was used for all printing activities on all types of printing because of its proper size, not too small nor too big, and not easily torn. Ivory paper-map folder was used for protecting the documents inside. According to importer.co.id (2019) ivory paper is a type of paper that its thickness assures it strength and sturdy. Likewise, based on a study conducted by Tazia Intan in 2017 shows that ivory paper-maps were even, flat, and easy to read.

b. Ink Quality

Oil-based ink's quality is quite good. The characteristic of this ink is light resistant. Thus, makes it durable or have long duration of sticking to paper without fear of fading due to light exposure. Oil-based ink is also not easy to seep and can dry immediately, the ink is very suitable for writing on medical record forms such as signatures and filling out medical history.

According to Latif (2021), oil-based ink pens are more appropriate for writing documents. Oil-based ink is light resistant. Thus, makes it durable or have long duration of sticking to paper without fear of fading due to light exposure. Oil-based ink is also not easy to seep and can dry immediately without fear of making the paper dirty or fear of seeping ink.

The research is in line with a study conducted by Dindasari dan Siswati in 2019 which states that from the observation in partner hospital, it was found that the quality of paper and the type of ink used for medical records was good. Based on Yuliana's theory (2016), states that the cause of the damage was originated from the document itself such as paper quality, ink quality, adhesive glue etc. Paper is made from chemical mixture and eventually will undergo changes and damaged. The damaging process could occur in a short period of time or years. Similarly, inks and adhesive glue could cause a chain of chemical process that would lead to damaged papers.

Extrinsic Factors

a. Physical Aspect

The temperature recorded in the medical record room of Dr. R. Soeharsono Lv.III Hospital is 18º C -28º C and is still within normal limit. This is in line with research from Rahayun and Rustiyanto (2019) which states that the air temperature in the filing room ranges from 18º C-28º C and air humidity of 40%-60%. Maintaining medical record documents in tropical country is not too much burden. Humidity is a concern in tropical country because it would affect the quality of materials of medical record documents archived and makes it easily damaged. To avoid filing room become humid, temperature controller may be added inside a room.

Regarding measurement of the humidity level in the medical record room, it shows that each measurement still within normal limit of humidity level required by the government of the Republic of Indonesia Ministry of Health number 1405/Menkes/SK/XI/2002, which states that the humidity in the workspace allowed is <65%. This is in accordance with a theory from Yuliani's research (2016), which states that the room should be equipped with lighting, room temperature regulation and air conditioning which are useful for controlling the humidity in the room. Good air humidity is around 50-60% and good temperature is around 60-75º F or 22-25º C.

Lighting inside the room is originating from 4 lamps ranging from 40 to 99 lux, measured using light meter. The lighting condition was not evenly distributed in all corners of the room because light coming inside the room is blocked by high filing shelves. This is not in accordance with the Decree of Minister of Health No. 1405 of 2002 which defines lighting as the amount of lighting in a work area needed to carry out activities effectively. Minimum workspace light intensity is 100 lux.

Uneven lighting condition could cause officers not seeing the written medical record number and eventually would potentially lead officers to take the wrong document and missed in finding the medical record document wanted. Errors in retrieving the documents, in addition with frequent storing and retrieving, would damage document's cover outside and the form inside.

This is in line with the research of Oktamianiza and Andriani (2016) which states that the physical condition of the room on the performance of officers in managing medical record room is 21,6 Lux – 142,2 Lux. This greatly affects the performance of the medical record officer. The condition of the medical record room that does not meet the standard of area, temperature and lighting would affect the work of the medical record officer in carrying out their duties.

Out of all 44 study samples of damaged documents and torn medical record's cover, 4 medical record's documents are from 2018's visit, 24 documents are from 2019's visit, 6 documents are from 2020's visit, and 6 documents are from 2021's visit. The damages and torn on the covers were caused by frequent storing and retrieving out of storage rack/shelf or from mistakenly retrieved by officers due to unevenly distributed lighting inside the room. 24 damaged documents from 2019's visit was caused due to frequent storing and retrieving out of storage rack/shelf.

This is in line with a study conducted by Rahma Suci Hadiyanti (2021), which states that between 2019-2021 there were 100 medical records with easily torn map folder, because they had not been replaced with thicker

folders. There were torn medical records due to documents arrangement was too packed, too few storages rack/shelf available, and not all medical records were retained yet. Shrinkage or retention is one of significant tool to solve the problem of stacking too many unused medical records. These unused documents should be destroyed for officers to have more spacious and better storage and maintenance facility for medical record documents that still have value.

The fire extinguisher (portable fire extinguisher) is placed outside the room, it is intended that the fire extinguisher could be used by other units around medical record room. In essence it would be better to locate it in place with no access limitation.

This is not in line with the results of research conducted by Hatauruk and Astuti (2018), which states that the absence of fire extinguisher causes the medical record documents were not secured and not protected from undesirable things may occur.

b. Biological Aspect
There were 2 damp documents found from 2019's visit, this may occurred due to medical record document was exposed to leaking AC's seepage water. This was confirmed by the respondent who stated that there were damp medical records due to they were exposed to leaking AC water. One way to solve the problem is by doing regular AC repairs.

According to Sugiarto & Wahyono (2015), destructive organism that often destruct archives are fungi, bookworm, termite, cockroach, and rat. Damage caused by biological aspect, afflicts many tropical areas, such as fungi and insects. The shape of the bacteria that causes the growth of this fungus is so small that it is very difficult to see with the naked eyes. Fungi could rot cellulose and cause paper have yellow, brown or black spots. Besides that, fungi also destroy adhesive and sticks one paper to another. Fungi usually grows in environment with humidity and light.

c. Chemical Aspect
Eating and drinking activities commonly found at medical record room, although cleanliness has been considered but it is not safe to assume that it was completely safe from chemical threats. These activities could also invite insects into the room and make nest between shelves and documents. Thus, the condition of medical record room had not achieved the standard of the theory of Sugiarto and Wahyono (2015), which states that chemical substances contained in air of filing and archive rooms cause damages to paper. For example, acidic gases may result in faded writings and paper become easily torn. Atmospheric pollution is one of the main causes of decrease in chemical degree contained in the paper and the use of low-quality ink.

This aspect is in line with the results of research conducted by Hariyati (2017) regarding Medical Record Installation Efforts in Maintaining the Security and Confidentiality of Medical Record Files at Panembahan Senopati Hospital, Bantul. Based on this research, crumbs from food and splashes from drinking water consumed by officers inside the room could expose medical record files and make safety of file's quality not guaranteed.

The medical record room and officer have prepared an insect repellent device. This aspect is not in line with research conducted by Hatauruk and Astuti (2018) regarding factors that affect the safety of medical record documents in the filing room of Medan Lung Hospital, which states that there were still many cockroaches and rats among medical records inside shelves in medical record room. This occurred because humidity in the room that changes every day and no camphor available.

There were 2 medical record documents that had faded, from 2018 and 2019's visit, on the patient name's part. This occurred due to frequent storing and retrieving out of storage rack by officers and it causes discoloration in the patient's name due to friction with other medical record surround it. This aspect is in line with the results of research conducted by Hariyati (2017) which states that there were officers who eat and drink in the medical record filing room. This activities cause crumbs from food and splashes from drinking water could expose medical record documents. Thus, medical record document's quality could not be guaranteed. One of the chemical aspects according to Sugiarto and Wahyono (2015) is damage.

CONCLUSION

The intrinsic factors of medical records' safety in Dr. R. Soeharsono Lv.III Hospital, paper and ink's quality used is good. The extrinsic factors of medical records' safety in Dr. R. Soeharsono Lv.III Hospital, the condition is safe enough but the lack of lighting could cause officers missed in finding the medical record document wanted.

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