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CONSERVATION AND ARCHIVING MEDICAL RECORDS IN SELECTED HOSPITALS IN YAOUNDÉ

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ABSTRACT

Introduction: Medical records play an important role in the storage and recall of patient's information, patient's follow-up, research, teaching, public health policy making and as a medico-legal tool, but less emphasis has been placed on its role in health care delivery. The objective of the study was to appraise the methods of conservation and archiving of medical records in hospitals in the city of Yaoundé.

Methodology: A descriptive cross-sectional study was done in the hospitals of Yaoundé between January to June 2023. The Data which was collected from medical record clerks using a self-administered and pre-tested questionnaire included: The profile of the health institution, personal information of the clerks, strategies put in place for the protection of medical records and obstacles in archiving.

Results: Twenty hospitals in the city of Yaoundé participated in the study. The public sector represented 65% of the health facilities, 45% had been existing between 21 and 40 years, with a median of 24.5 years. In 70% of the cases, medical records archiving system had been existing between 1 and 10years. In 65% of cases, the conservation of archived records was mainly done at the different services with the paediatric service being the most represented (16.2%). In 87.5% of cases, the means of archiving used was the paper file classified on shelves (73.5%); of which (52.2%) were archived in alphabetical order. The obstacles to archiving medical records were mainly the lack of qualified personnel (82.4%) and the lack of storage space (80.1%).

Conclusion: Many obstacles were observed. These results suggest actions to be generated both by the Cameroonian State and by the leaders of private health facilities in order to improve the management of medical records.

Keywords: Medical Records, Archives, Hospitals, Cameroon

1. INTRODUCTION

Medical records (MR) are the document that explains all detail about the patient's history, clinical findings, diagnostic test results, pre and postoperative care, patient's progress and medication Al Otaybi et al. Medical records keeping is

an inevitable part of health care delivery as it serve a means of storage sharing, and maintaining patients' medical records of vital information on the patient past ailments and its management, the current treatment and possibly a treatment plan or protocol that has to be followed in future Awokola et al. (2012) Medical professionals have obligations to keep these records in a confidential manner. Additionally, they are also obliged to ensure that records are legible, accurate, and that the documentation is presented in an orderly fashion essential to the decision-making by these participants and providers who may not know the patient or actually even see the patient Bali et al. (2011),Dujat et al. (1995). Medical recording and archiving became significant in a hospital environment in the 1970s and has adapted to meet the requirements of medicine in terms of quality, safety, continuity of care, but also for research, teaching and public health Bali et al. (2011). The medical record represents for this purpose the memory of the doctor and the memory of the contemporary health system Bali et al. (2011). It is on the strength of this observation that in 1980 the World Health Organization (WHO) drafted directives on the practice of medical records (from their creation to their archiving through their confidentiality) to be applied according to the laws of the countries members in order to preserve the integrity of medical data Isaac (2020) Historically medical records were only kept in paper form but increasingly they are now being maintained in an electronic form or a combination of paper and electronic form Jeong et al. (2022)It is kept under conditions allowing its accessibility, its integrity and the preservation of the confidentiality of the information it contains. The file and its archiving are inseparable, the quality of one resounding on the quality of the other Kanchan (2016)Recent studies reveal that 78% of American doctors have recourse to the exclusive use of the electronic medical record (renewable energy) against 66% for the member countries of the European Union. In developing countries, the medical data recording system is still largely paper-based Kouotou (2017)

In Cameroon, data archiving is governed by Law No. 2000/010 of December 19, 2000, which sets the legal framework, establishes the distinction between public and private archives and finally promotes the organized and meticulous conservation of the cultural and national heritage that constitutes the archive Lievre & Moutel (2010). In the public sector, there are very few computerized archiving systems for medical records, the paper medium is still widely used in hospital structures and is often accompanied by its own limits and disadvantages. Nevertheless, some health facilities are following the digital trend and are beginning to integrate computerized medical records into their operations. In order to carry out its functions and to meet the increasing demands of society, the patient's medical file must be the subject of the greatest attention. It is within the framework of this reflection that we propose to study the mode of archiving of medical files in various hospitals of the city of Yaoundé. The objective of our study was to appraise the mode of preservation and archiving of medical records in hospitals in the city of Yaoundé.

2. METHODOLOGY

This was a descriptive cross-sectional study. It was carried out in private and public hospitals between January to June 2022 in the city of Yaoundé, capital of the Republic of Cameroon. All health facilities in the city of Yaoundé that gave us access to structures participated in our study. Our study population was the staff of the hospitals responsible for the storage of medical records (medical record clerks, health information clerks etc). Hospitals selected for the study were selected

randomly by a raffle draw of a list of health facilities in the city of Yaoundé while the medical record clerks were selected by convenience in the selected health facilities. Data was collected using a pre-tested anonymous questionnaire. After explaining the purpose of our study, a self-administered questionnaire was given to them to fill after signing a consent form. The questionnaire was used in collecting data like the profile of the health institution (years of existence, the category of the facility , type of storage facility for medical records), personal information of the clerks (number of years in the service, training received etc), strategies put in place for the protection of medical records (equipment used for storage, protection of documents from intruders and heat, information concerning the life cycle of the document, clearance of old documents etc), obstacles in archiving (like untrained staff, lack of space, theft , excessive heat and humidity, inadequate surveillance, physical damage, dust, insect invasion etc) and their perspective on the archiving system of their facilities. The data collected was entered using CS Pro software (Census and Survey Processing) version 7.5 and analyzed using SPSS software version 25 (Statistical Package for the Social Sciences). An ethical clearance was taken from the Institutional review and Ethics Committee of the Université des Montagnes. To health facilities granted by Regional Delegate for Public Health of the Center Region of Cameroon and the directors of the various hospitals. Informed consent form given to participants.

3. RESULTS

The study was carried out in 20 health facilities made up of 13(65%) public and 7(35%) private hospitals. A quarter 5(25%) of the hospitals were referral hospitals, 11(55%) district hospitals. More than a third 8(40%) of the hospitals have existed for less than 20 years, 9(45%) between 21 to 40 years, 3 (15%) and above (Table 1). A large majority of the health facilities surveyed had only been archiving their medical records for less than 10 years. They represented 35% for a period of existence less than 05 years and 35% also for a period of existence between 06 and 10 years. The majority age group was between 31 and 40 representing 34.6% of the total participants. In the general population, nurses were in the majority (service majors) with a percentage of 53.7%(73) of the total workforce. The paediatric department remained the most represented (16.2%), followed by internal medicine department (8.8%), out patients (8.8%). The dental surgery 5.1%, The Median was 40 years, Interquartile range [31-44]. The minimum was 23 years and maximum 59 years. Overall, 28.7% of participants had been practicing for less than 05 years. It is interesting to note that in 60% of cases, no thermal protection system existed in the health facility. In 73.5% of cases, medical records were kept on the shelves. It is interesting to note that in 52% of the cases, medical records were archived in alphabetical order, whereas only in 7.4% of cases they were archived by an anonymity system. In 59.8% of cases, there was indeed an alternative energy system in the health facility. The results obtained show that 77.2% of the participants had no knowledge of archival methods and the life cycle of documents. The lack of qualified personnel 112(82.4%), lack of storage space 109(80.1%), excess humidity100 (71.5%), dust 99 (72.8%), degradation by pests 91(66.9%), degradation over time 90 (66.9%), physical damage 84 (61.8%), lack of archiving policies by institution 83(61%), natural disaster 51(37.5%), theft 44 (32.4%) and attack by computer viruses 10 (7.4%). Overall, 75(53.7%) of the participants prefer both paper archiving coupled with computer archiving, 52(38.2%) digital archiving, and 11(8.1%) paper only. 89.7% negative on the technical level of conservation and archiving in their structure/service.

Table I: characteristics of health facilities (see appendix)

Table 2: Distribution of places where medical records are kept according to the type of health facility (see appendix I)

Figure 1: Breakdown of participants by gender (see appendixII).

Table III: Distribution of participants according to age (see appendix I)

Figure 2: Participants by specialty service (see appendix II)

Figure 3: Types of archival media (see appendix II)

Table 5: Obstacles to the archiving of medical records (see appendix1)

Table 4: protection and storage systems for medical records (see appendix I)

Figure 4: Participants' knowledge of archival methods and the life cycle of documents. (see appendix II)

Figure 5: Practice of the annual elimination of the medical file in the structure/department (see appendix II)

4. DISCUSSION

The current study showed that medical archiving is still recent in Cameroon, and is not well organized. Data is not well stored or preserved and that digital data storage is not fully implemented. More than half 13 (65%) of the health facilities represented were from the public sector. This could be explained by the low frequency of using medical records in private hospital structures. The results obtained show that 60% of the hospitals listed had been existing between 21 and 40 years. We also note that 70% of these same structures have a medical record archiving system that has only existed for less than 10 years. This could be explained firstly by the late awareness of the Cameroonian health system on the merits of setting up the medical file; but also perhaps by the lack of logistical means (premises, personnel, and equipment) to the implementation of such a system in health facilities a few decades ago. The paediatric department was the most represented and had 16% of archived medical records. These results are contradicted by those obtained by Joongsik et al. in 2018 at the Yaoundé Emergency Center and Tarek et al. in 2008 in Morocco in favor of the traumatology service show that the archiving of medical records is respectively 39.7% and 51.2% Morris (2005)Murala et al. (2023)This could be explained by the fact that in the health facilities, some services depending on the human and material resources made available to them are more suitable for archiving than others. The odontostomatology service represented 5.1% of archived medical records. This result is lower than the 32% obtained by Hanan et al in 2021 National assembly. Law and decree on archivesin Saudi Arabia. This could be explained by the fact that in health facilities in Cameroon, the space reserved for the dental service is very narrow, the Dental Surgeon working alone and sometimes only has a register to enter patients' information. Hence, the difficulty for him to receive, examine, process and clean the instruments and the room.

More than half (59.6) of the participants were female. This result is similar to that of Kouotou et al. in 2017 Petersen (2023) which had also found a female predominance (62%) in the city of Yaoundé. This could be explained by the high proportion of women in the results of the various competitive entrance examinations for medical training schools and direct recruitment in the country's health facilities. Our study population was mainly represented by nurses that is 53.7%, and archivists 5.1%. The latter were only present in two hospital formations. This could explain why the archives were mainly found in the departments.

In 87.5% of cases, the paper archiving medium was used for the medical file in the health facility. This is contrary to the 63% obtained by Tarek et al in 2008 in Morocco [11]. This could be explained by the fact that in Morocco, the medical record archiving system is in transition to the digital model which is still lagging behind with us at (1%). And even when the digital system is installed in our health facilities, its operation is handicapped by the inappropriate supply of electrical energy. As 42% of health structures do not have an alternative energy source. A study done in Nigeria by Akola et al in 2012 to showed that, for many months, the use of the renewable energy was not effective due to the lack of constant electricity supply, as 80% of health facilities had no alternative electrical energy source Psiha (2017). This explains the difficulty of setting up the renewable energy. In our study population, 77.2% of participants had no knowledge of archival methods. This could be explained by the fact that they did not have this training during their studies, and have not had continuous training on the subject during their career.

The results obtained showed that in 84.4% and 80.1% of the cases, the lack of qualified personnel in the management of the medical file and the lack of storage space constituted the main obstacles to the effective archiving of the MD. These results are similar to those obtained in 2011 by Isaac Anyira et al in Nigeria, which were 86% for both cases Tarek (2008). This could be explained by the lack of training of medical personnel for the management of the medical file on one hand, and on the other hand, by the absence of an archives service coupled with the fact that the medical files are stored in 60% of cases in the various care services. The results of our study show that 89.7% of the participants declare having a negative opinion on the technical level of conservation and archiving of the MD, and 53.7% are in favour of the use of an archiving system which combines the paper record and the electronic medical record thus making a compromise between the disadvantages of one and the other

5. LIMITATIONS OF OUR STUDIES

It was an evaluation survey with some of the answers provided depending on the sincerity of the participant. Our work is part of the first studies on the medical record in Cameroon for which we experienced some difficulties in finding elements of comparison in the literature.

6. CONCLUSION

Most of the medical records recorded in paper form (87.5%) were archived in the various departments of 65% of health facility's. Very few of them (10%) had a service reserved solely for archives. The Electronic Medical Record was used in only 1.5% of health facility's because there were very few trained personnel and the absence of alternative electrical energy in the event of approximate electricity supply. The major obstacles are summarized in: The lack of qualified personnel in the management of the medical file (82.4%), Lack of storage space (80.1%) and excessive humidity (73.5%) which contributes to the deterioration of medical records. In 89.7% of cases, the participants give a negative opinion on the technical level of storage and archiving in the structure/department and 53.7% are in favour of the simultaneous use of the two types of archiving of medical records.

CONFLICT OF INTERESTS

None.

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Table 1

Table 1 Characteristics of Health Facilities

Variables	Numbers (N=20)	Percentages (%)
Type of health facility		
Public	13	65
Private	7	35
Categories		
Referral hospital	5	**25**
Regional Hospital	1	5
District Hospital	11	**55**
District Medical Center and Assimilated	2	10
Integrated Health Center	1	5
Years of existence of hospital		
≤ 20	8	40
21-40	9	45
40 and above	3	15
Years of existence of archive services		
≤ 5	**7**	35
[6-10]	**7**	35
[11-20]	3	15
[21-30]	2	10
[31-40]	1	5

Table 2

Table 2 Distribution of Places Where Medical Records are Kept According to the type of Health Facility

Type of health facility	Storage location			Total
	In different services n (%)	In an archive room n (%)	Both n(%)	
Public	7(53.8)	02(15.3)	4(30.7)	13(100)
Private	5(71.4)	00(00)	2(28.6)	7(100)

Table 3

Table 3 Distribution of Participants According to Age

Age (years)	Workforce (N=136)	Percentages (%)
≤ 30	31	22.8
31-40	47	**34.6**
41-50	44	32.4
> 50	14	10.3
Duration of service		
≤5	39	**28.7**
[6-10]	30	22.1
[11-15]	34	25
[16-20]	15	11

> 20	18	13.2
Profession		
Medical doctor		38.8
Nurse		53.7
Hospital supervisor		4.4
Record keeping Clerk		5.1

Table 4

Table 4 Protection and Storage Systems for Medical Records

Means of protection	Workforce (N=136)	Percentages (%)
Air conditioner	29	21.3
Fire extinguishers	21	7.4
Fire alarms	10	15.4
None	**82**	**60.3**
Method of storage		
Store in cardboard boxes	47	34.6
Arranged on shelves	**100**	**73.5**
Placed on a desk	27	19.9
Arranged in drawers	15	11
Storage sequence		
In alphabetical order	**71**	**52.2**
Randomly	20	14.7
In order of arrival	35	25.7
By an anonymity system	**10**	**7.4**
Existence of security system		
Yes	14	**82.4**
No	3	17.6
Existence of alternative energy		
Yes	10	**59.8**
No	7	41.2

Table 5

Table 5 Obstacles to the Archiving of Medical Records

Obstacles	Workforce (N=136)	Percentages (%)
Lack of qualified personnel in the management of medical devices	**112**	**82.4**
Lack of storage space for medical records	**109**	**80.1**
Excess humidity	**100**	**73.5**
Dust	99	72.8
Degradation by pests	91	66.9
Degradation over time	90	66.2
Physical damage (tearing, soiling)	84	61.8
Lack of an archiving policy instituted and applied by staff	83	61
Natural disaster	51	37.5
Theft	44	32.4
Attack by computer viruses	10	7.4

Figure 1

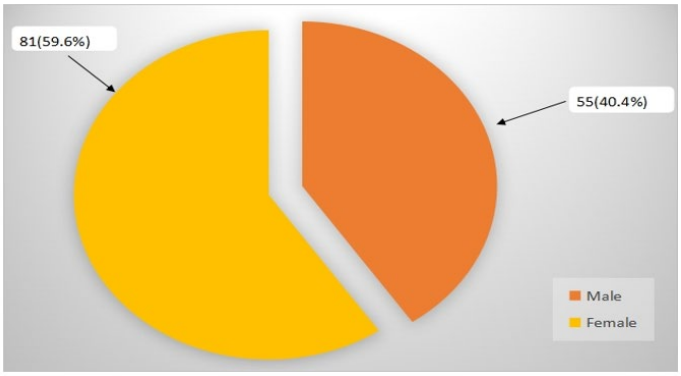

Figure 1 Breakdown of Participants by Gender

Figure 2

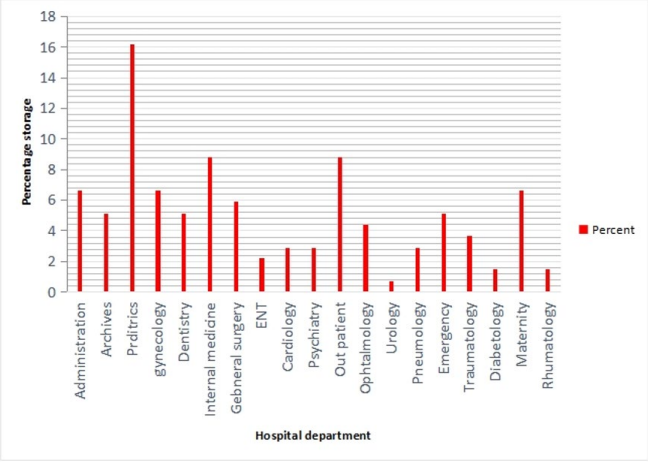

Figure 2 Participants by Specialty Service

Figure 3

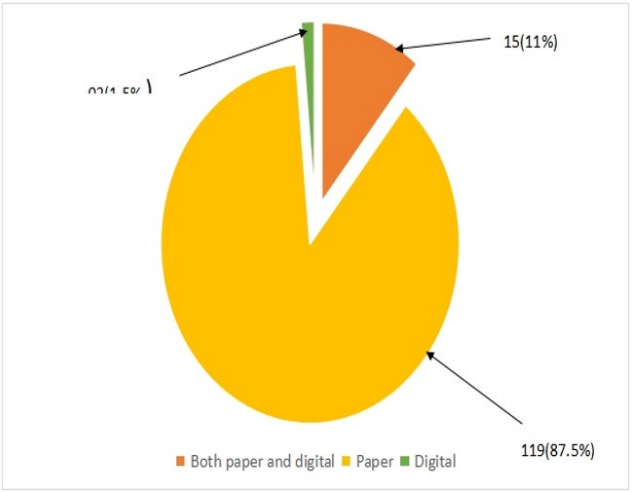

Figure 3 Types of Archival Media

Figure 4

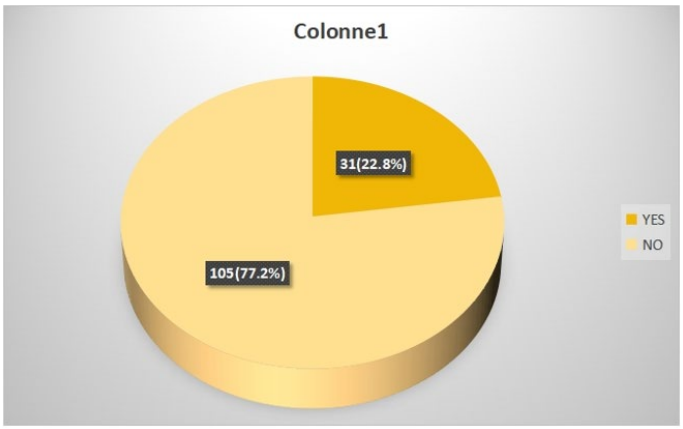

Figure 4 Participants' Knowledge of Archival Methods and the Life Cycle of Documents

Figure 5

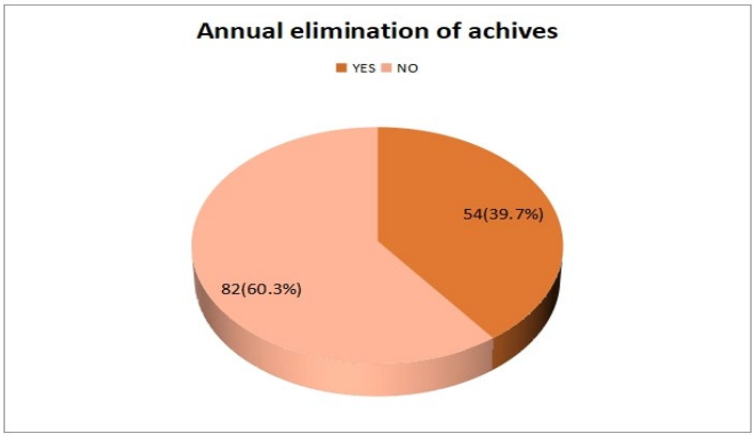

Figure 5 Practice of the Annual Elimination of the Medical File in the Structure/Department