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Medical Records Preservation And Archiving In A Selected Family Medicine Setting Saudi Arabia In 2024

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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 Saudia
Methods: Descriptive research design was utilized. **Setting** It was conducted in the private and public family medicine clinics in Gaddah, Saudia Arabia **Study subjects:** Medical record clerks, health information clerks, and other hospital employees in charge of medical record preservation made up our study population. **Tools :** One tool were utilized to fulfill this study objectives, it was developed by the researchers **Results:** The results showed that 77.2% of participants did not know about the document life cycle or archival techniques. Lack of storage space 109 (80.1%), excessive humidity 100 (71.5%), dust 99 (72.8%), pest degradation 91 (61.9%), natural disaster 51 (37.5%), theft 44 (32.4%), computer virus attack 10 (7.4%), physical damage 84 (61.8%), and institution-specific lack of archiving policies 83 (61%). Overall, 52 participants (38.0%) prefer digital archiving, 11 participants (8.1%) choose paper exclusively, and 75 participants (53.7%) prefer both computer and paper archiving. 89.7% expressed dissatisfaction with their structure/service's technological conservation and archiving capabilities.
Conclusion:
The main challenges are summed up as follows: inadequate storage space (80.1%), a shortage of skilled workers to administer the medical file , and high humidity , which deteriorates medical data. Half of participants support the simultaneous use of the two forms of medical record preservation, whereas the majority of participants express a negative opinion of the technological level of storage and archiving in the department or structure.

Introduction

Background :
Nowadays, the implementation of information technology in the health care system is a must.
Hence, medical systems have undergone several changes, including the transition of paper-based medical records to electronic medical records (EMRs) (Zahabi, Kaber, & Swangnetr, (2015).All of the

information regarding a patient's history, clinical findings, diagnostic test results, pre and postoperative treatment, progress, and medication is explained in their medical records (MR). Al Otaybi et al. Medical records keeping isan essential component of providing health care since it allows for the sharing, storing, and upkeep of patient medical records, which contain important details about the patient's past conditions and how they were treated, their current course of therapy, and potentially a treatment plan or protocol that must be followed going forward. Awokola et al., (2012). Healthcare providers have a duty to maintain the privacy of these records. Additionally, they must make sure that records are accurate, readable, and presented in an orderly manner so that these participants and providers—who might not even know the patient—can make decisions. (2011) Bali et al., 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). According to Bali et al. (2011), the medical record serves as a representation of both the doctor's and the modern healthcare system's memory. In order to maintain the integrity of medical data, the World Health Organisation (WHO) draughted guidelines in 1980 regarding the use of medical records (from their creation to their archiving through their confidentiality) that must be applied in accordance with national laws. Isaac (2020).

Medical records were only preserved on paper in the past, but more and more of them are now being retained electronically or in a combination of both paper and electronic formats. Jeong and associates (2022)It is stored under circumstances that guarantee its integrity, accessibility, and secrecy of the data it contains. The archiving and the file are linked, with the quality of one influencing the other Kanchan. (2016)According to recent studies, 78% of American physicians exclusively utilise electronic medical records (renewable energy), compared to 66% of physicians in EU member states. The majority of medical data is still recorded on paper in developing nations. Kouotou (2017).

Despite these initiatives, research indicates that Saudi healthcare facilities are still not using EMRs at a high rate. Only nine (25%) of the 36 hospitals in Mecca, according to a research by Shaker et al. 10, fully used all three EMR core modules (pharmacy, radiology, and laboratory). Sebaiet al., (2001).

This was greater than the 15.8% proportion that was noted in 2011 in the Eastern province of Saudi Arabia. Shaker, et al (2015). Seven (46.6%) of the 15 hospitals in the Eastern Province of Saudi Arabia that were surveyed for this study in 2018 had an operational EMR system. In addition, it discovered that EMR systems differed greatly from the previously described study of hospitals in Mecca in terms of operating systems, system characteristics, and security protocols. Bah, et al., (2011). According to some authors, staff opposition, a lack of computer and English literacy, and inexperience with EMR systems are some of the reasons for this sluggish adoption.13Positively, a number of significant healthcare institutions in the Kingdom of Saudi Arabia, including King Faisal Specialist Hospital, National Guard Health Affairs hospitals (which were recognized with the Middle East Excellence Award in electronic health records), and Armed Forces hospitals, made significant strides in implementing EMRs. Notably, the Saudi state hospital system is not connected to these medical centers(Jabali & Jarrar, 2018).

METHODOLOGY

Research design :

Descriptive research design was utilized

Setting

It was conducted in the private and public family medicine clinics in Gaddah, Saudia Arabia

Study subjects:

Medical record clerks, health information clerks, and other hospital employees in charge of medical record preservation made up our study population.

Tool :

One tool were utilized to fulfill this study objectives, it was developed by the researchers . it consisted of three parts; socio demographic data; means of protection of medical records; berries of archiving data. Data such as the health institution's profile (years of operation, facility category, type of medical record storage facility), the clerks' personal information (number of years of service, training received,

etc.), the strategies implemented to protect medical records (equipment for storage, protection of documents from heat and intruders, information about the document's life cycle, clearance of old documents, etc.), the challenges of archiving (such as untrained staff, lack of space, theft, excessive heat and humidity, inadequate surveillance, physical damage, dust, insect invasion, etc.), and their opinions of their facilities' archiving system were all gathered through the questionnaire.

Data collection :

After explaining the purpose of our study, a self-administered questionnaire was given to them to fill after signing a consent form. 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). Informed consent form given to participants. Confidentiality and anonymity was approved and maintained

3. RESULTS

The study was conducted in 20 healthcare facilities, including 7 (35%) private hospitals and 13 (65%) public hospitals. Eleven (55%) of the hospitals were district hospitals, while five (25%) were referral hospitals. Eight (40%) of the hospitals have been in operation for less than 20 years, nine (45%) for 21 to 40 years, and three (15%) for more than 40 years (Table 1). Less than ten years had passed since the vast majority of the medical facilities evaluated began storing their records.

Table 1: frequency of distribution of personal characteristics of participants:

Items	**No**	**%**
Type of health facility		
Public clinics	13	65
Private clinics	7	35
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

In terms of duration of existence, they accounted for 35% of those under 5 years and 35% of those between 6 and 10 years. The age range of 31 to 40 years old accounted for 34.6% of all participants. The majority of service majors in the general population were nurses, accounting for 53.7% (73%) of the workforce. The largest representation was still in the paediatric department (16.2%), followed by the internal medicine department (8.8%) and outpatient department (8.8%). The interquartile range was [31–44], the median age was 40 years, and the dental surgery rate was 5.1%. The highest was 59 years, and the minimum was 23 years. In total, 28.7% of those who took part had been in practice for less than five years.

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

	Storage location			**Total**
Type of health facility	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 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

In table 4 :It's interesting to note that in 60% of cases, the medical facility had no heat protection equipment. Medical records were stored on the shelves in 73.5% of cases. Interestingly, medical records were saved using an anonymity scheme in just 7.4% of cases, whereas in 52% of cases, they were archived in alphabetical order. In 59.8% of cases, the medical facility did in fact have an alternative energy system.

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

The results in figure 2 showed that 64% of participants did not know about the document life cycle or archival techniques.

Figure 2: Understanding archival techniques according to to type of record

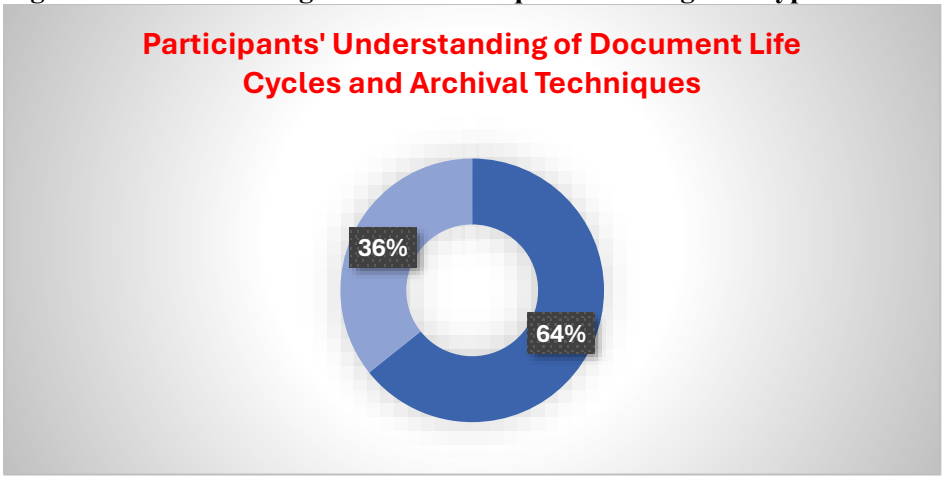
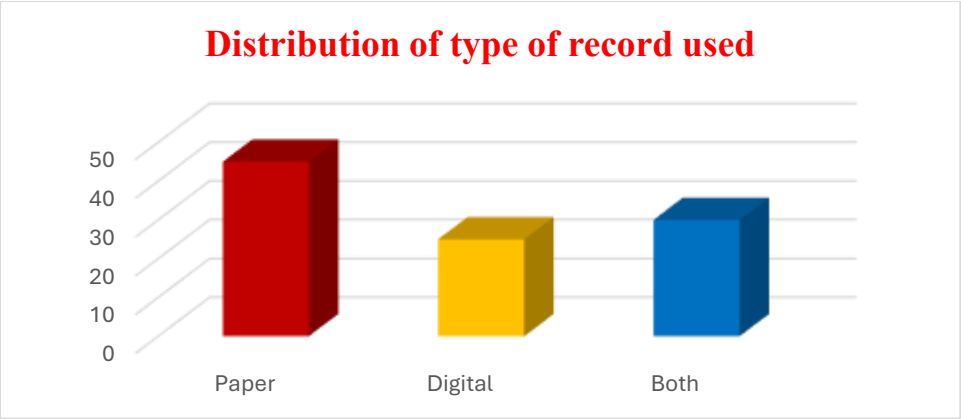


Table 3 illustrated the causes /barriers of data archiving ; the highest causes related to lack of storage space 109 (80.1%), followed by excessive humidity 100 (71.5%), dust 99 (72.8%), pest degradation 91 (61.9%), natural disaster 51 (37.5%), theft 44 (32.4%), computer virus attack 10 (7.4%), physical damage 84 (61.8%), and institution-specific lack of archiving policies 83 (61%).

Figure 3 pointed that Overall, 52 participants (38.0%) prefer digital archiving, 11 participants (8.1%) choose paper exclusively, and 75 participants (53.7%) prefer both computer and paper archiving. 89.7% expressed dissatisfaction with their structure/service's technological conservation and archiving capabilities.

Figure 2: distribution of type of record used



Discussion:

According to the current study, medical archiving in Cameroon is still relatively new and disorganised. Digital data storage is not properly established, and data is not adequately preserved or stored. The public sector accounted for more than half 13 of the represented healthcare facilities. The infrequent use of medical records in private hospital structures may help to explain this. According to the statistics, 60% of the hospitals on the list have been in operation for 21–40 years. Additionally, we see that a medical record archiving system that has been in place for less than ten years is present in 70% of these similar structures. This could be explained by the Cameroonian health system's late recognition of the benefits of creating a medical file, but it could also be attributed to the absence of facilities, staff, and equipment necessary to implement such a system in medical facilities a few decades ago.

The largest percentage of stored medical records (16%) came from the paediatric department. The findings of Joongsik et al. (2018) at the Saudia Arabia Emergency Centre and Tarek et al. (2008) in Morocco in support of the traumatology service demonstrate that the archiving of medical data is 39.7% and 51.2%, respectively, which contradict these findings. Morris (2005) Murala et al. (2023)This may be accounted for by the fact that certain services in healthcare institutions are better suited for archiving than others, depending on the human and material resources made available to them. 5.1% of medical records that were archived were from the odontostomatology service. This result is less than the 32% that Hanan et al. achieved at the National Assembly in 2021.

This may be explained by the fact that dental services are provided in relatively small spaces in Cameroonian hospitals, where the dentist works alone and occasionally has only a register to input patient data. As a result, he finds it challenging to receive, inspect, process, and clean the instruments and the space.

Most of participants (59.6) were female. Similar findings were made by Kouotou et al. in 2017 Petersen (2023), who also discovered a female majority . The high percentage of female candidates in the competitive admission exams for medical schools and direct hiring in the nation's healthcare facilities may help to explain this. In our analysis, nurses made up 53.7% of the population, whereas archivists made up 5.1%. Two hospital formations were the only ones with the latter. This may help to explain why the departments were where the archives were primarily located.

The medical file in the healthcare facility was archived on paper in 87.5% of cases. This contrasts with the 63% that Tarek et al. achieved in Morocco in 2008 [11]. This may be explained by the fact that Morocco is still lagging behind us at 1% in the digitalisation of the medical record archiving system. Additionally, the improper electrical energy supply hinders the operation of the digital system, even when it is implemented in our healthcare facilities. Given that 42% of health structures lack a backup energy source. because 80% of healthcare institutions lacked an alternate electrical energy source, a 2012 study by Akola et al. in Nigeria shown that the usage of renewable energy was ineffective for several months due to the unreliable electricity supply (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.

According to the data, the primary barriers to the MD's proper archiving in 84.4% and 80.1% of the cases were a shortage of storage space and a shortage of skilled staff to administer the medical file. These findings are comparable to those of Isaac Anyira et al. (2011) in Nigeria, who found that 86% of the cases were identical (Tarek 2008).

This may be explained by the fact that medical files are kept in the various care services in 60% of cases, as well as the fact that medical staff are not properly trained to manage medical files and that there is no archives service. Our study's findings reveal that 53.7% of participants support the use of an archiving system that combines paper and electronic medical records, thereby balancing the drawbacks of each. Conversely, 89.7% of participants express a negative opinion regarding the technical level of conservation and archiving of the MD.

Conclusion:

The main challenges are summed up as follows: inadequate storage space (80.1%), a shortage of skilled workers to administer the medical file , and high humidity , which deteriorates medical data. Half of participants support the simultaneous use of the two forms of medical record preservation, whereas the majority of participants express a negative opinion of the technological level of storage and archiving in the department or structure.

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