

Original Research Article

Contribution of the New Technologies of Information and Communication in Patients' Security in Lubumbashi Clinics University

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Abstract: Introduction: in the health domain, new technologies of information and communication have brought up fantastic contribution according to the quality of care and the security of patients. **Objective:** this preliminary approach has to describe and to determine the contribution of NTIC (New technology of information and communication) to improve the quality of the security of patients in the university clinics of Lubumbashi. **Method:** The study of this work took place at the University clinics of Lubumbashi from April up to August 2019. The descriptive analysis has been selected as a method in the quantitative approach. The collection of data has been done through a set of questions. After choosing judiciously, only the welfare officers at last fourteen (14) investigated people were chosen. **Outcome:** computers (in 85, 7% of wards and also telephones for them (14, 3%) were found again. During the investigation, 14, 28% of computers were broken down. Those machines were used for stocking and archiving information (53, 85% of services, invoicing (in 15, 38), the transmission of information 15, 38% and 7, 69% were using these computers and telephones for the administration in secretary's office. Nevertheless, 71, 4% of investigated people have confirmed that the new technologies of information and technologies have contributed for the safety of patients. Whereas 14, 3% of patients were complaining for being dehumanized when using the NTIC. **Conclusion:** to University Clinics, their use of NTIC still is limited. Services are only equipped with computers and mobiles. These technologies should be really integrated and used for improving the quality of care and the safety of patients.

Keywords: New technologies of information and communication- safety of patients.

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INTRODUCTION

Hospital is a complex organization that is in full transformation. The new technologies of information and communication (NTIC) become a strategy component to develop the hospital wards (Bouhouili M'barka). So, the NTIC appear as ideal tools which help to respond to mayor challenge that our health system is encountered nowadays (Tilman, 2017). These new technologies lean on phones (via SMS, MMS, and implementation for smartphones and internet protocol), computers (office computer and laptop), notebook, internet and the World Wide Web even with

several software and implementations which may be their partners (Weil, Tikkanen, Kouanda, 2015).

In the hospital, the computer as a tool and all the other number implementation which derive from the computer model step by step health new practice and develop original and specific activity, said Thomas, 2008. As far as patients are concerned, Bohl in 2010 has demonstrated that 71% of patients are looking for the medical information through internet and 63% are still consulting the dictionary for their diseases and 37% are still asking questions to other patients.

When managing the hospital, these technologies are contributing to the improvement of the quality of care and the safety of patients (the last one is chiefly an approach which will deviate any doubt from the patient to the medicine allowed to him, said Olivier, 2006; HAS, 2013).

This preliminary approach is aimed to determine the assignment of the New Technology of Information and Communication (NTIC) to ameliorate the quality of the safety of patients at the university clinics of Lubumbashi.

METHOD

The approach has been done at the University Clinics of Lubumbashi from April to August 2019. We have used the descriptive analysis in the quantitative approach. We have used the sampling method through a set of questions. The University Clinics were using 400 workers grouped into 14 wards. Only the heads of departments or 14 heads were questioned. So, we've used the sample of the required choice. We have selected the heads of the wards who were present the day of the investigation or their substitute when the heads are busy working and those who accepted freely to contribute to this work. Thus, two (2) doctors or 14, 29%, 4 nurses or 28, 57% and 57, 14% were heads of

administrative wards who participated to this work. The available investigated were found in the service of Nutrition, Accounts, Respiratory Unit, Secretary's office, Information processing, Petty cash, Receipt, Laboratory, X-ray department, pediatric ward, Imagery ward, Male medical ward, Gynecological ward and Authority.

Referring to the administration matter, the memorandum of understanding was submitted to the authority of the University clinics of Lubumbashi. And the authorities of the University clinics agreed and allow us to collect data after we explain them about the aim of this research. We agreed with them together to work in anonymity system. That's why the investigated workers gave freely their opinion.

OUTCOME

Board-I: Gender of investigated

Gender	Number	%
Male	6	42,8
Female	8	57,2
Total	14	100

It is said that among 14 investigated workers, 8 investigated or 57,2 % were female sex and 6 investigated workers or 42,8% were male.

Board-II: Professional experience of investigated

Professional experiment in year	Number	%
<5	2	14,28
5-10	4	28,58
10-15	1	7,14
15-20	1	7,14
>20	6	42,85
Total	14	100

This board is argued that 6 investigated workers or 42,85% have been working for 20 years, 4 investigated workers or 28,57% have been working from 5 to 10 years; 2 investigated workers or 14,28% have been working less than 5 years, and one investigated worker has been working from 10 to 15 years and another one has been working from 15 to 20 years.

Board-III: Presence of at one computer in the ward

Computer	Number	%
Yes	13	92,86
No	1	7,14
Total	14	100

This board says those 13 wards or 92, 86% has a computer and 1 service didn't have.

Board-IV: Usefulness of the computer in the ward

Usefulness of the computer	Number	%
Enrolment and archiving of data	7	53,85
Identification of the patients	1	7,69
Billing (invoicing)	2	15,38
Administrative works and secretary's office	1	7,69
Dispatching of data	2	15,38
Total	13	100

This board stipulates that 7 wards or 53, 85% were using the computer to register and archive data, 2 wards or 15,38% were using the computer for billing, 2 wards or 15,38 % were using the computer for

dispatching data and 1 service or 7,69 were using the computer for administrative needs of the secretary office.

Board-V: Computer's operation

Computer's operation	Number	%
Good	12	85,71
Broken down	2	14,28
Total	14	100

In 12 wards where we made investigation or investigated wards or 14, 28% computers, 2 computers were working whereas in 2 were broken down.

Board-VI: Type of NTIC used

Type of NTIC used	Number	%
computers	12	85,7
Service telephones mobiles	2	14,3
Total	14	100

This board demonstrates that 12 investigated or 85, 7% were using the computers and 2 wards were using telephones of services.

Board-VII: Types of Network connection

Type of network	Number	%
Internet	12	85,7
Telephones mobiles communication	2	14,28
Intranet	0	0
Total	14	100

In 14, 28% of services, the internet connection happened through phones whereas 85, 71% of services were using connection from recognized houses.

Board-VIII: Usefulness of the internet

Usefulness of the internet	Number	%
Researches	4	33,3
Change of data between services	7	58,3
Sending of data to partners	1	8,4
Total	12	100

It means that 8 investigated workers or 58,4% researches; finally 1 investigated worker or 8,4 used to were using the internet to send data to other services,5 send data. investigated workers or 33,3%used internet for

Board-IX: Knowledge of patients' law in regard of tools used in information processing.

Knowledge of patients' law	Number	%
Yes	12	85,7
No	2	14,3
Total	14	100

This board stipulates that 12 investigated law whereas 2 investigated workers or 14,3% didn't workers or 85,7% have the knowledge on the patient's have the knowledge.

Board-X: Contribution of the NTIC to the safety of patients.

Contribution of the NTIC	Number	%
Yes	4	28,6
No	10	71,4
Total	14	100

It is demonstrates that 10 investigated workers or 71, 4% confirm that the NTIC is contributing to the safety of patients.

Board-XI: Existence of the patients' complaints regarding to the dehumanization

Patients' complaints	Number	%
Yes	2	14,3
None	12	85,7
Total	14	100

It is said through this board that 2 investigated workers or 14, 3% of patients were complaining about the dehumanization.

DEBATE

We are observing the rapid development of the medical world. Governments of developed countries stimulate their researches' centers and industrial ones of medical world, particularly in the case of the efficiency of the new medicine considered as "medicine of precision" said (Battu in 2015). From today to digitize healthcare facilities constitutes a national strategic stake and is an integral part of the e-health. The size "paper" used as document is disappearing step by step said Hubert in 2017.

From these change, the interest of the patients remains in the middle; that is to administrate the best medical care and to ensure the safety. To optimize the source of healthcare, the NTIC seems to be the best unique way of improving the quality of medical care. In 2008, France was late in the domain of NTIC at the hospital (Bonnet and Ponchon, 2018). In DRC, the entire public and private Health care facilities is nowadays late on the endowment of the tools in hospital but few of health care facilities have some tools for the hospital management available for medico-administrative data. Those who have materials of computers in their health care facilities helping them to change information with the outside are very few. In the University clinics of Lubumbashi, our researches stipulate that 13 wards or 92, 86% have got at least tools of NTIC. These technologies of information and communication include all the digital processing used in key-boarding, word processing, stocking and electronic data processing. But in the domain of health, they may help to be educated at distance, to be cured at distance when being at home, to be held at distance even in terms of attending the meeting at distance or in terms of getting clinical and administrative information at distance (Gagnon, 2013). Concerning the using of that technology, our study reveals that 53, 85% of wards were using them for stocking and archiving data (while registers or charts remain inescapable and the most used in several services), 15, 38% were using charts for billing 15, 38% were using them for change and sharing information and 7, 69% were using them the administrative and secretary needs. In the researches done by Bouhouili M'barka, more than 61% of investigated workers have chosen registers or charts(paper) in archiving, around 26% were using both computers and charts made in papers as tool where only a rate of 12,9% to mean that 4 people among interviewees used their archives in the computers.

According to the condition and the quality of material, in 12 investigated services or 85, 57% those tools were working perfectly whereas 2investigated services or 14, 28% had broken down tools. In his survey, Bouhouili M'barka has found similar results or a bad way of using these technologies due to repeated blackout, lack of technique assistance, even due to the resistance characterized by some civil servants. The maintenance and the management of these tools in good condition depend to qualification and profile of the office staff. These results allow us to know the profile of the investigated workers. It is noticed that among 14 investigated workers, 57, 14% were female against 42, 8% were male. Furthermore, 42,85% of investigated workers had been working more than 20 years, 28,57% had been working for 5or 10 years;14,28% have been working at least for 5 years. Whereas none had been trained when jobbing. According to Bouhouili M'barka, most of the requested investigated workers have not been educated in terms of T.I.C. (only 35, 3% among them recognized being trained).

In University clinics of Lubumbashi, applying to the new technology of information and communication is much more limited in spite of numerous advantages and profit specially the admittance to data, the reduction of the work load, a good communication between services and a good time manage. Consequently they improve the quality of the service offered to the patient and it secures him. In the research done by Bouhouili M'barka, the majority of the interviewees, that is 94%, were for the development of T.I.C. that was existing in the hospital and even the integration of other techniques that would go with the change of the hospital environment.

The investigated clinics were using computers in 12 investigated wards or 85, 7% and the telephones in the 2 investigated services or 14, 3%. The technologies of the information and of the communication (TIC) and the network of the new generation use to associate the internet through fix connections or mobiles. More than half of the mankind accedes nowadays to internet diligence. Whereas the medicine was the first science to use the internet (Battu, 2015). In our concern, the use of internet was limited. Only 58,4% of services were using internet to transmit and to share data and information between services, 33,3% were using internet for researches; finally, 8,4% used internet to transmit and exchange information between hospital. Computerization appears as a tool that facilitates the transmission and exchange of information said Hubert, 2017.

The safety of the patient is defined as a reduction of all risks of avoidable injury inflicted by the patient (HAS, 2013). The Safety of the patients is sometimes considered as a component of the quality, so that all the practice that aims to ameliorate the safety of the patients generally carries away the improvement of the entire quality of care. Likewise, technologies of health in line help to engage a collaboration which is benefic each other between patients and health care staff (Trill, 2015). The NTIC contributed to the safety of the patients. 71, 4% of investigated workers recognized that. These technologies intervened in the management and the research of patients' information even for their cure. Certainly, the level to intervene is very limited. What remains is the integration of these technologies in order to bridge a gap. To the University clinics, lateness is much deep as far as benefit and advantages of the NTIC in health are concerned.

The NTIC helps to improve the quality of care (Gagnon, 2013 and Hubert, 2017). The computerized file of the patient becomes now as a tool of improvement in the quality of care. These technologies follow the increase of the professional exhaustion when reacting as a positive solution which peculiarly operates on anxiousness (Piperini, 2020). Furthermore, a rapid development of medicine in distance may contribute in a best quality of taking care of patients (Nys, 2020). Also, the valuation in distance would help the occupational physician to sollicitate in distance the opinion of other physicians about taking care of complex files. The TIC is offering an excellent opportunity to rationalize the organization of management of care and to demonstrate the economic profitability of structures and methods most accommodated. In each country, the development of the TIC may contribute in one hand in reducing the health spending and in the other hand in ameliorating the level of the quality of care system (Battu, 2015). In spite of all observations, the NTIC possess some risks against the safety of patients. Deontological aspects of professional secret constitute a backbone of the patients' safety and the NTIC. With these, our results reveal that 12 investigated workers or 85, 7% had the background on the law of the patients whereas 2 of them or 14, 3% didn't have. In addition to this, 12 investigated workers or 85, 7% have confirmed that patients were complaining of dehumanization. On the contrary, 14, 3% of patients were complaining of dehumanization. The use of TIC in the medical practice is not aiming in the domain of specific and unified law. The information on the health data, that is the first result of the TIC in the medical practice, belongs to the common law of the protection of the private data (Tilman, 2017).

The investigation was encountered to absence of certain information of quality. In the University clinic of Lubumbashi, to appeal to the technology of information and communication is very limited.

CONCLUSION

In University Clinics their usage is again limited. Services are equipped only with computers and mobiles. Because of the necessity and the rank of the University Clinics in the Health system in the Democratic Republic of Congo, the authorities of our country should equip the services with NTIC, they integrate and use them for the improvement of the quality of care the safety of the patients.

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