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USE OF AN ELECTRONIC INFORMATION SYSTEM IN PROFESSIONAL PRACTICE NURSE MANAGEMENT

O USO DE UM SISTEMA ELETRÔNICO DE INFORMAÇÃO NA PRÁTICA PROFISSIONAL DO ENFERMEIRO GERENCIAL

EL USO DE UN SISTEMA ELECTRÓNICO DE INFORMACIÓN EN LA PRÁCTICA PROFESIONAL DEL ENFERMERO GERENCIAL

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ABSTRACT

Objective: to evaluate the use of an Electronic Information System as well as the phenomenon that concern the insertion of this system in daily professional practice of management nurses, from their speeches. **Method:** exploratory, qualitative study, using a structured form of open questions, with focused interview type, covering 21 management nurses enrolled in a federal public hospital in the city of Rio de Janeiro/RJ. The collected data were produced by Content Analysis, through thematic Blocks. The research project was approved by the Ethics Committee in Research, CAAE 15678113.0.0000.5285. **Results:** four themes emerged << The management nurses and the use of an electronic information system >>, << The electronic information system and the management of nursing actions in the everyday practice >>, << Electronic Information System: advantages and disadvantages >> and << Implications of the use of an electronic information system in the management nurse everyday professional practice >>. **Conclusion:** the use of the Electronic System is carried out empirically, showing that nurses act only as mere information holders/performers. **Descriptors:** Information Technology; Communication; Nursing Informatics; Professional Practice of Management.

RESUMO

Objetivo: avaliar o emprego de um Sistema Eletrônico de Informação, bem como os fenômenos que dizem respeito à inserção de tal sistema no cotidiano da prática profissional de enfermeiros gerenciais a partir de seus discursos. **Método:** estudo exploratório, qualitativo, utilizando-se um formulário estruturado de questões abertas, com tipo de entrevista focalizada, contemplando 21 enfermeiros gerenciais alocados em um hospital público federal na cidade do Rio de Janeiro/RJ. Os dados coletados foram produzidos pela Análise de Conteúdo, na modalidade de Blocos temáticos. O projeto de pesquisa foi aprovado pelo Comitê de Ética em Pesquisa, CAAE 15678113.0.0000.5285. **Resultados:** quatro categorias temáticas emergiram << Os enfermeiros gerenciais e a utilização de um sistema eletrônico de informação >>, << O sistema eletrônico de informação e o gerenciamento das ações de enfermagem no cotidiano da prática >>, << O Sistema eletrônico de informação: vantagens e desvantagens >> e << Implicações do uso de um sistema eletrônico de informação no cotidiano da prática profissional do enfermeiro gerencial >>. **Conclusão:** o emprego do Sistema Eletrônico é realizado de forma empírica, revelando, com isso, que os enfermeiros atuam, apenas, como mero detentores/executores de informações. **Descritores:** Tecnologia da Informação; Comunicação; Informática em Enfermagem; Gerenciamento da Prática Profissional.

RESUMEN

Objetivo: evaluar el empleo de un Sistema Electrónico de Información, así como los fenómenos que dicen al respecto de la inserción de tal sistema en el cotidiano de la práctica profesional de enfermeros gerenciales, a partir de sus discursos. **Método:** estudio exploratorio, cualitativo, utilizándose un formulario estructurado de preguntas abiertas, con tipo de entrevista focalizada, contemplando 21 enfermeros gerenciales alocados en un hospital público federal en la ciudad de Rio de Janeiro/RJ. Los datos recogidos fueron producidos por el Análisis de Contenido, en la modalidad de Bloques temáticos. El proyecto de la investigación fue aprobado por el Comité de Ética en Investigación, CAAE 15678113.0.0000.5285. **Resultados:** surgieron cuatro categorías temáticas << Los enfermeros gerenciales y la utilización de un sistema electrónico de información >>, << El sistema electrónico de información y el gerenciamento de las acciones de enfermería en el cotidiano da práctica >>, << El Sistema electrónico de información: ventajas y desventajas >> y << Implicaciones del uso de un sistema electrónico de información en el cotidiano de la práctica profesional del enfermero gerencial >>. **Conclusión:** el empleo del Sistema Electrónico es realizado de forma empírica, revelando, con eso, que los enfermeros actúan, apenas, como mero detentores/ejecutores de informaciones. **Descriptor:** Tecnología de la Información; Comunicación; Informática en Enfermería; Gerenciamento de la Práctica Profesional.

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INTRODUCTION

In contemporary society, we have observed an increase influence and a big impact arising from the so-called New Information and Communication Technologies (NTIC), in the different fields of human activities. Many applications can be noticed in the daily life of institutions and everyday people. For example the NICTs in the set of social relationships in many different levels, for example in the Education, Health, Entertainment, Academic Research, etc., as well as the confluence of different global forces as critical to the introduction of NICTs, especially, for computers, with regard to the Health Area, primarily through the development and application of new software and hardware. This technological advance, together with other Computational Science productions, favors its deployment and implementation in the Health Area.¹ We increasingly observed the presence of software used in Electronic Systems aimed at offering better Health Services to all the population. This availability, allows for optimization and streamlining of the various actions for citizens, especially those related to nursing interventions among other positive aspects.

In this context, we see subjects interacting with each other in a constant chain of interpersonal and digital relations in the process of knowledge construction. This may occur through several New Information and Communication Technologies (NTIC), including the informatics being relevant in the production and use of this resource in the health context, corroborating with this idea, with noticeable signs of increasing and relentless influence of these technologies on health issues.²

Health professionals, institutions and society as a whole, must recognize the importance of computer use in the Health Area, as well as its potential benefits, considering that this tool promotes and assists the access to information, facilitates communication, and can improve facilitate and expedite both the quality of care in health of the patient as the work of the nursing professional.¹

The choice of this theme was chosen understanding that currently, it is increasingly challenging to management nurses provide a consistently safe and high quality care to clients, especially because of the volume of unstructured, heterogeneous and disintegrated information that permeate care, in addition to numerous demands of time for a

proper clinical assessment required in health care.³

According to this research, in nursing environment on the one hand, some professionals resist these technologies appropriation and on the other hand, other workers challenge its use as a tool for integration between the various dimensions of care. However, there are two problems, one related to information deficiency and other to dissemination of information about exclusive systems for nursing.¹

Considering all the benefits of the systems, it is important to note the quick access to information, enabling better update and advances in research about care. This technology, in a closer future, will be fully used in health services aiming to improve health care, favoring not only the patient, but also the professional who is responsible for this care.

The guiding questions to this research were: Have the management nurses used Electronic Information Systems in their everyday practices? How is the use of Electronic Information Systems by nurses in their daily practices to the management of nursing actions? Which are the advantage(s) and disadvantage(s) on nursing using Electronic Information Systems in daily management practice of nurses? Which are the implication(s) on nursing, using Electronic Information Systems in daily management practice of nurses?

The research objectives are:

- To evaluate the use of Electronic Information Systems in daily management practice of nurses, from their speeches.
- To identify the use of Electronic Information Systems in daily management practice of nurses.

METHOD

Exploratory study of qualitative approach,^{4,5} developed in a health institution of the federal administration, with tertiary and integral multidisciplinary assistance. It is focused on medium and high complexity, in the city of Rio de Janeiro / RJ, with a focus on clinical and general surgery. The investigated federal organization has 190 operating beds available to the population and 137 nurses in their employees team (eight of them in administrative area and 24 management nurses).

This health organization uses a Software Program for electronic information, developed by a private multinational institution, which offers products divided into four categories -

software, consulting, technology and added value services, assisting different market segments along with its sub-segments.

For data production a form for interviews with the study subjects was used. To this end, four open questions were part of the structure script.⁴

The type of interview allows the interviewees to speak freely about the topic, but when they deviates from the original theme, it is possible to bring the main topic back.⁴ It is worth noting, that the period for data collection took place from May to July 2013. Inclusion criteria for this study, the subject must be nurse with management position and with direct access to the Electronic Information System of the institution researched. As an exclusion criteria, they must be management nurse, however, being out of the unit at the time of data collection (vacation, sick leave, study leave).

The invitation for participating in the research was done based on the inclusion and exclusion criteria established for this study. The research was done in the sector and during nursing work hours occupying management positions. The research objectives, its voluntary nature and the confidentiality of data were explained to the interviewees.

The subjects who agreed to participate received the Informed Consent Term and were directed to a private place, only together with the researcher, so that they could answer the form, ensuring privacy of the interviewee and the confidentiality of information.

The treatment of qualitative data about the subjects interviewed speech practice was done by Content Analysis, supporting the results in the form of thematic blocks, specifically, analysis of the open questions contents, classified by analogy of the contents and the consequent construction nuclear categories/ideas arising from the categorization process of the nurses' speeches.⁶

For the purpose of content treatment of the 24 nurses, we chose the coding of the subjects from the letters EG + a number (from 1 to 21), wishing, therefore, a symbolic representation of these professionals occurring any compromising of their personal identities.

It should be noted that out of 24 management nurses who met the inclusion criteria for this study, two nurses did not use the Electronic Information System and a management nurse refused to participate.

Therefore, the final population for this study included 21 management nurses.

The research had the project approved by the Ethics Committee in Research of UNIRIO under CAAE number 15678113.0.0000.5285.

RESULTS

The analytical categories presented below were built by identifying the following unit records and speeches meaning contexts: ♦ The management nurses and the use of an electronic information system; ♦ The electronic information system and the management of nursing actions in everyday practice; ♦ The electronic information system: advantages and disadvantages; ♦ Implications of the use of an electronic information system in daily management of professional nursing practice.

♦ The management nurses and the use of an electronic information system

Professionals, especially those linked to Health Area, - specifically nursing staff - have been used increasingly Electronic Information Systems to help them to perform their duties in practice, in research, in education and nursing management.⁷ This is observed in the speech of EG 5:

It is increasingly evident the need for electronic systems in the development of activities, mainly by the management nurse. (EG 5)

The nursing practice is developing technical and scientific knowledge, but it is facing a big challenge to apply the theory in practice and acquire new knowledge from the experience lived by the practice - as the use of information technology in occupational environment, the system information be limited to requests for materials, without expanding access for a complete Systematization of Nursing Care, not to mention the absence and/or deficiency of an Electronic information System in key hospital departments that would need such support.⁸ Regarding the above, the limitations to access the information system are noted in the speeches of EG 1 and EG 21:

Nurses has a limited use of electronic information systems. The implementation is still abstracted, without the effective participation of users in the system, making a longer and complex period of adaptation, leading to errors in the process and the use of working time. (EG 1)

[...] There are restrictions for each user login, restricting access to patient visits and examinations (EG 21)

Regarding the limiting access in the Electronic Information System centralized only

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in material requisitions and rarely expanding its use to other activities, we note the discourses of EG 9, EG 12:

All requests of material and pharmacy are done through the system. (EG 9)

We manage requests for materials, inventory in the sector and medical prescriptions. (EG 12)

The absence of an Electronic Information System in key hospital departments that require this tool can be observed in EG 10 speech, as well as resistance and/or limitation (even by the time of formation and age) or difficulty by some nursing professionals in the use of this tool can be checked in EG 19 speech:

I believe that this resistance to the use of a computerized system comes from the difficulty to operationalize it, since many who are in management positions are older, who did not follow the computerization. I also believe that much of this operational difficulty comes from employers, who often do not provide a computer to nursing leadership to achieve the basic work processes [...]. EG 19

To change this situation, nurses are favorable to technological changes to help minimizing the gap between what is learned in theory and what is observed in the daily life of professionals through the development of systems that allow greater involvement with the assistance of nursing and reduce and ease the time spent with notes where these could often be replaced by electronic means.⁸

♦ The electronic information system and the management of nursing actions in everyday practice

Health professionals, health organizations and society as a whole, must recognize the importance of computer use in the Health Area, as well as its potential benefits, considering this tool favors and assists the access to information and facilitates communication, helping the development of nursing work.¹

The Electronic Information System offers many restrictions to the performance of the professionals in their daily activities, evident in EG 1 speech. Besides there are many speeches of management nurses, as regards the specific information system used at an institution being strictly used and still being under construction, which can be seen in the speech of EG 3:

The Electronic Information System is available in the hospital but with restrictions on use. In few time at the hospital I had access to two different systems: the first one with access to request module of warehouse materials,

hospitalization, with beds management (hospitalizations, transfers, discharges); the second and current one, with access to the module materials, without resources to care management in the area that I work [...]. (EG 3)

Information technology is an essential tool in nursing work, providing information and promoting interaction between professionals and their teams, for better addressing the strategies to be performed in hospitals,² perceived in the speech of EG 5:

During my activities in Hospital Infection Control, this tool is essential, especially due to its use in the suggestions for the nursing heads and related sectors in directing actions. (EG 5)

This does not occur in all hospital sectors, noted in the EG 11 speech, disagree with what is stated in the above referenced research:

[...] there is no connection with the electronic information system with all the hospitals [...]. (EG11)

Despite the problems that exist for the complete integrability of Information Technology, it is important to remember that nursing, as a profession, need to anticipate the expansion and the development of computer in its scope, so that it encompasses all its employees. This matches with EG 12 speech:

Currently the Electronic Information System is used partly by the lack of personnel, the accumulation of work and its implementation should be strategic to cover everyone. (EG 12)

♦ The electronic information system: advantages and disadvantages

Information systems focused on management consist in the process of modifying data in information that is used in the decision-making structure of an institution, promoting also the administrative support to improve the results.⁰⁹

Initially, Information Systems in Health were providing basis for medical analysis, the material control and payroll control, attending the financial and administrative sectors. Later, its purpose was extended to customer support, with orientation for medical problems and for nursing care to clinical units' users.¹⁰ With the expansion in the use of computers, it begins the deployment of networks and the Information Technology (IT).

This matches with the speeches of EG 1 and EG 2:

I believe that in health area, it is a tool contributing to the management and assistance. For nursing registration, it offers advantage SAE implementation, contributing

to the effective participation in this context of Nursing in the multidisciplinary team. The implementation of systems requires education/training and sometimes paradigm changes from nurses about its real importance. The systems can contribute to the management practice of nurses, since they are trained and instructed to pursue their activities. It is common to transfer administrative activities for these professionals without the consistent link between the responsibility of the nurse and the activity to be developed. (EG 1)

Advantage: applications can be developed to assist the care process [...] (EG 2)

The benefits in using these Information Systems by nurses, minimizes the time spent in documenting customer information, eliminates redundancies, improves the communication time between the team, optimizes access to information, and provides information to the multidisciplinary team.¹¹ This can be easily observed in EG 3 speech:

Advantage: to ensure safer care, since the information is more clear and legible; organization assurance of medical records of the patient; reduction of paper work; accuracy of the information and most importantly, to speed up procedures. (EG 3)

The Hospital Information Systems (SIH) are designed, tested and installed in hospitals of all sizes, so that these health care organizations could structure their massive volumes of information they need, at all times, being collected, separated, transmitted, recorded, retrieved, stored and synthesized.⁷

With regard to the aid of information management systems for continuous nursing reports, it is worth noting the advantage for nursing managers with this level of support, since the speed at which data can be recovered, compiled, summarized and presented with this type of tool, it is something that has comprehensively and with meaning. Another advantage is the ability to process specific reports according to each nursing need.⁷ Some advantages in using the Electronic Information System can be seen in the speeches of EG 6 and EG 11:

Advantage: reliable information quickly and easily accessed in routines (EG 6).

The advantages would be more optimized and fast care. A more effective communication between sectors, to assist clients better. Possibility of having data that are more effective in order to maintain indicators for effective performance in the processes of making and changing practices [...]. (EG 11)

Failures in the storage mechanisms of manual records, creating difficulties when

trying to retrieve data for research and analysis purposes. Furthermore, professionals see the manual information system as a limited and outdated communication vehicle.¹²

In EG 12 and EG 13 speeches, we see the questions of professionals regarding the manual patient registration system as well as the desire of these workers for better optimization of the administration in the work processes:

"It is easier, the file is virtual, not boxes with papers that are lost and take space."(EG 12)

[...] the system fully operating only has advantage because it streamlines the bureaucratic part of the nurse. (EG 13)

Some recommendations for the use of this tool: obtaining skills to operate the computers, to work with the various educational programs and the creation of a positive attitude toward computers for their professional use, and to share these experiences with other professionals, as well as having barriers in dealing with this work tool.¹³

There are also obstacles and problems related to effective information nursing management and information should be considered as a corporate strategic resource and that nursing managers use of the information as a method and management tool, given greater power and autonomy to nursing managers in more efficient use of available technological resources.⁷

However, some of these disadvantages/limitations on the use of Electronic Information System can be checked in EG 2 and EG 9 speeches:

[...] Disadvantage: "nursing as a profession based on the practice of its activities and not facing bureaucracy, we find strength in combining the computerization service". (EG2)

[...] Disadvantage: system down, identification of printing mistakes when typing, undermining and invalidating the identification of the patient. Example: a simple exchange of a medical record number gives rise to a chart that does not belong to that patient. The big advantage is the saving of time [...]. (EG9)

There are different barriers to a full and correct use of information technology. A well-structured information system brings results in increased time for nurses to direct care, the best quality of documentation, increasing productivity, reducing the margin of iatrogenic, increasing job satisfaction and developing an administrative database and uniform clinic, which can also serve to

standardize the nursing language, improve processes and help in improving the performance of healthcare organizations.¹¹

♦ **Implications of the use of an electronic information system in daily management of professional nursing practice.**

One of the main implications of using an Electronic Information System in the everyday professional practice of management nurses is to consider the information and its electronic systems as a corporate strategic resources to provide methods and information management instruments ever more elaborate, agile and reliable to health professionals and nursing managers.⁷ Given this scenario, the speeches of EG 1, EG 7 and EG 17 talk about this quote:

Information technology is a value that should be added to the practice of management nurses contributing to the better development of their activities. (EG1)

Nursing can be better organized for management and care practice. (EG 7)

The main implication would be provide/get data in real time in which the actions take place. (EG 17)

It is essential the role of nurses in the management of Electronic Information Systems in health care sectors. In most hospitals and healthcare companies, nurses administer both patient care as the care units. In general, clinical nurses manage customer care, and nursing administrators manage the units of the patients in health institutions in general, but also they are responsible for training their teams, daily, improving their practices and skills in the world of Information Technology.⁷

EG 11 speech is about this:

The implication for nursing would be the time spent optimizing the care provided. We would have appropriate resources, tools for the development of our practice in a modern way, with better management of our care and administrative processes (management). I think that companies and hospitals should have a focus on training in this area and not just implement this system. We must be prepared to follow this technology. (EG 11)

The Electronic Information Systems in Health Area should be strongly disseminated and used in patient care and management of activities, assignments and nursing skills, serving as support for the clinical and administrative decisions of these professionals, allowing thereby a better organization, communication, data feedback, and a consolidated, practical, dynamic,

reliable and trustworthy management analysis-based.¹²

It is important that the participation of managers and users in building the system not having the implementation of a fragile system.¹³

FINAL REMARKS

Throughout our analysis, we observed that a larger theme of reflection on using Electronic Information System in the daily work practices of management nurses is currently a consistent reality for the entire academic community of Nursing, as well as to their peers inserted in the care and management, since a further deepening about its contemporary professional practice is needed.

It is understood that the study objectives were satisfactorily achieved. However, the results show the necessity of intensifying efforts for the development and improvement of studies with more elaborate designs and also producing and allowing larger evidence about the topic investigated, and may also generating consequences for future work related to this subject.

It was found that the management nurses have not even played some role in the insertion of Information Electronic System implemented by the hospital organization, where they act only as mere holders/performers of information into the system. We also observed that this Electronic Information System is only used empirically by the study subjects, making difficult, therefore, further clarification of the real importance of the Information and Communication Technology about their practices.

It was noted also that the use of the computer, specifically of an Electronic Information System by the management nurses in their practice, occurs mainly just to meet bureaucratic and administrative requirements of the job or a standardization of nursing actions to be performed (often automatic, without any objective, understanding and clear intention by the professionals involved) and linked to the hierarchy in which these workers are exposed, not because they do not believe in the Information and Communication Technology as a useful tool and key to the routine of their routines labor.

The speeches have messages that some nurses use the Electronic Information System because they have to do it and thus limiting our reading and interpretation of the

employability of this tool in everyday activities. The results suggest that further studies are needed on this topic to better understand the use of Electronic Information Systems, especially in this time of intense technological innovation, especially in health care tertiary care.

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