NURSES' PERCEPTION REGARDING THE IMPLEMENTATION OF COMPUTER-BASED CLINICAL NURSING DOCUMENTATION

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Nurses' perception regarding the implementation of computer-based clinical nursing documentation

PERCEPÇÃO DE ENFERMEIROS EM RELAÇÃO À IMPLEMENTAÇÃO DA INFORMATIZAÇÃO DA DOCUMENTAÇÃO CLÍNICA DE ENFERMAGEM

PERCEPCIÓN DE ENFERMEROS EN RELACIÓN A LA IMPLEMENTACIÓN DE LA INFORMATIZACIÓN DE DOCUMENTACIÓN CLÍNICA DE ENFERMERÍA

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ABSTRACT

This qualitative, exploratory, descriptive study was performed with the objective of understanding the perception of the nurses working in medical-surgical units of a university hospital, regarding the strategies developed to perform a pilot test of the PROCEnf-USP electronic system, with the purpose of computerizing clinical nursing documentation. Eleven nurses of a theoretical-practical training program were interviewed and the obtained data were analyzed using the Content Analysis Technique. The following categories were discussed based on the references of participative management and planned changes: *favorable aspects for the implementation; unfavorable aspects for the implementation*; and *expectations regarding the implementation*. According to the nurses' perceptions, the preliminary use of the electronic system allowed them to show their potential and to propose improvements, encouraging them to become partners of the group manager in the dissemination to other nurses of the institution.

DESCRIPTORS

Nursing informatics
Nursing process
Organizational innovation
Professional training

RESUMO

Este estudo qualitativo e exploratório-descritivo busca compreender a percepção de enfermeiras de unidades clínico-cirúrgicas de um hospital universitário referente às estratégias desenvolvidas para o teste piloto do sistema eletrônico PROCEnf-USP, visando à informatização da documentação clínica de enfermagem. Onze enfermeiras participantes de um programa de capacitação teórico-prático foram entrevistadas e os dados obtidos foram analisados por meio da Técnica de Análise de Conteúdo. As categorias *aspectos favoráveis à implementação; aspectos desfavoráveis à implementação* e *expectativas na implementação* foram discutidas na perspectiva dos referenciais da administração participativa e da mudança planejada. Com base na percepção das enfermeiras, o uso preliminar do sistema eletrônico lhes possibilitou evidenciar suas potencialidades e propor melhorias, o que as incentivou a tornarem-se parceiras do grupo gestor na divulgação junto aos demais enfermeiros da instituição.

DESCRITORES

Informática em enfermagem
Processos de enfermagem
Inovação organizacional
Capacitação profissional

RESUMEN

Este estudio cualitativo y exploratorio-descriptivo busca comprender la percepción de enfermeras de unidades clínico-quirúrgicas de un hospital universitario referente a las estrategias desarrolladas para el testeo piloto del sistema digital PROCEnf-USP, apuntando a la informatización de la documentación clínica de enfermería. Once enfermeras participantes de un programa de capacitación teórico-práctico fueron entrevistadas y los datos obtenidos se analizaron mediante la Técnica de Análisis de Contenido. Las categorías *aspectos favorables a la implementación; aspectos desfavorables a la implementación* y *expectativas en la implementación* fueron discutidas en la perspectiva de los referenciales de administración participativa y de cambio planificado. Según la percepción de estas enfermeras, el uso preliminar del sistema digital les permitió evidenciar sus potencialidades y proponer mejoras, lo que las incentivó a asociarse al grupo gestor en la divulgación junto al resto de los enfermeros de la institución.

DESCRIPTORES

Informática aplicada a la enfermería
Procesos de enfermería
Innovación organizacional
Capacitación profesional

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INTRODUCTION

The Nursing Process (NP) is an instrument that provides a systematized guide for developing a style of thinking that orientates the clinical judgment necessary for nursing care[1]. Its utmost importance consists on guiding and orientating nurses' thoughts. It suggests nursing care should be planned according to the patient's evaluation, which provides data for making appropriate decisions regarding the patients' care needs (diagnoses), the objectives to be achieved (outcomes) and the best care procedures to meet those needs in face of these expected results (interventions)[2].

The nurses from the Nursing Department (ND) of the University of São Paulo Teaching Hospital (USP-TH) base their care and educational practice on the NP, later denominated Nursing Care System (NCS), composed of three out of the six stages recommended by Horta[3]: History, Evolution and Nursing Prescription.

The administration of the Nursing Department (ND), according to the needs evidenced by nurses and nursing undergraduate students, has developed projects of improvement, innovation and continuous evaluation of the NCS, in a partnership with the University of São Paulo School of Nursing. Thus, as of December 2001, it has involved nurses and professors of the School of Nursing in planning and performing changes towards the computer-based clinical nursing documentation. Aimed at implementing these changes, the classification system of nursing diagnosis proposed by *NANDA - International* (NANDA-I)[4] was implemented and, as of 2005, there was the incorporation of the systems of Nursing Interventions Classification (NIC)[5] and Nursing Outcomes Classification (NOC)[6].

For seven years, the nurses working in the ND had participative experiences that allowed the evaluation and reflection of care and educational actions, in the respective units, and the collective construction of instruments to make the gradual implementation of the nursing classification systems feasible in the NCS[7]. The constructed instruments represent the consecution of an intermediate stage between the previously developed NCS and the objective to achieve: computerizing the clinical nursing documentation.

The investments of the ND administration in the technological development of the clinical nursing documentation are increasing, and the evidences point to the classification systems as essential elements for nursing care, with impact for the professionals involved, the results in the patients' health and the organizations or contexts in which care and care teaching are executed.

The project Computer-based Nursing Care System was initiated at the institution after the funding for the Universal 2006-2007 project was approved, together with the National Council for Scientific and Technological Development. Therefore, aimed at computerizing the clinical nursing documentation, an administrative group was constituted with nurses who worked at the TH, professors of the ND, researchers from different areas of knowledge, undergraduate students with scientific initiation fellowships, graduate students, and informatics professionals hired by the superintendence of the hospital. The mentioned group designed an electronic system, named *PROCEnf-USP (Electronic Documentation System for Nursing Process of the University of São Paulo)*, which permits users – nurses or nursing students- to answer a set of ramified questionnaires, with tabulative questions that generate diagnostic hypotheses. After choosing diagnoses that better characterize the situation of the patient, at the moment of hospital admission, the user moved on to the selection of the respective results, interventions and nursing activities[8].

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In order to implement the *PROCEnf-USP* and evaluate the quality of the user/system relationship, as of November 2009, a pilot test was programmed at the medical-surgical units, where adult patients are hospitalized and the developed work processes are similar to those at other hospitalization units, which will favor the replication of the obtained results using the system in similar units integrating the Nursing Department[9]. In the months of March and April 2009, the administrative group of the *PROCEnf-USP* provided a qualification program for using the system to 20 nurses of the institution. The content of the program included the following topics: guiding principles and foundations of the system related to the integration of the classifications NANDA-I, NOC and NIC; *PROCEnf-USP* use demonstration and practical activities supervised at the informatics laboratory of the USP-TH, which has 10 computers connected in a network. The program lasted for 16 hours, distributed throughout six days. Afterwards, the nurses participating in the program — at their respective work units — documented studies regarding the evaluation of fictitious patients in the system. The documented case studies were presented in five scientific meetings, which constituted opportunities for discussing the potentials, limitations and challenges related to the use of the new documentation system.

The effective participation of the nurses from the medical-surgical units is essential for the successful implementation of the *PROCEnf-USP* and, consequently, for the replication of the obtained results to other units of the USP-TH. Being agents of transformation of the experienced reality, the need to respect their values and fears becomes evident, as they are going to have to change

their way of thinking, feeling and acting in order to be participants of the change and not to suffer the consequences resulting from it and, in this perspective, the authors decided to develop this study.

OBJECTIVE

The objective of the present study was to understand the perception that nurses from medical-surgical units have regarding the strategies developed to perform a pilot test of the *PROCEnf-USP* electronic system.

METHOD

This exploratory and descriptive study was performed using a qualitative approach, at the medical-surgical units of the USP-TH, whose objectives are consolidated through teaching, research and extension of their services to the community.

The studied medical unit has 41 beds to treat patients coming from the adult emergency service, outpatient clinic, adult intensive care and other units of the USP-TH, most of which are older people and patients with degenerative chronic diseases[7].

The surgical unit offers 44 beds for comprehensive, continuous and individualized care of the patient, through pre- and post-operative period. This unit hospitalizes patients of both genders, older than 15 years, in case they need general or orthopedic surgery; those coming from the adult emergency service in need of emergency surgeries, and from the outpatient clinic for elective surgeries. Patients transferred from other units in the institution are also cared for in case they need surgical procedures[7].

The study project was presented to the Committee of Teaching and Research and to the Research Ethics Committee at USP-TH, and data collection was only initiated after being approved by these departments (Registration Protocol no. 590/05 — SISNEP CAAE: 0043.0.198.000-09) and once the subjects agreed to participate.

As participants in the study, the authors invited 11 nurses working in the medical-surgical units that participated in the qualification program for using the *PROCEnf-USP*, and all agreed. Data collection was performed in the period from June to October 2009, through recorded interviews that lasted, in average, 15 minutes, and were conducted by the guiding question: *What are your perceptions regarding the development of the pilot test of the PROCEnf-USP electronic system?*

The obtained statements were transcribed, codified (I1, I2... and so on) and subjected to content analysis — defined as a set of techniques for communication analysis aimed at obtaining, through systematic and objective description procedures of the content in the messages, indicators to allow for inferring the knowledge related to the conditions of production and reception of these messages. The process comprehended stages of pre-analysis, material exploration and content interpretation[10].

RESULTS

The age of the 11 nurses participating in the study ranged between 26 and 46 years and the period of work at the USP-TH from 11 months to 19 years. Regarding a graduate degree, one of the contributors had a doctorate in cardiology, two had a master's degree in nursing, six had taken specialization courses (one in gerontology, one in nephrology, one in administration of nursing services, one in cardiology and two in clinical-surgical nursing) and two were not attending any graduate courses.

The interpretative analysis of the interviews allowed for defining three categories: favorable aspects to the implementation, unfavorable aspects to the implementation, and expectations regarding the implementation of the *PROCEnf-USP*.

First category: favorable aspects to the implementation of the PROCEnf-USP

As favorable aspects to the change in the nursing documentation system, through the implementation of an electronic system, the nurses evidenced the policy of participative administration adopted by the Nursing Department and the organizational culture of the institutions, as illustrated by the following statements:

> The meetings performed both with the nurses and the nursing technicians/assistants gave a preview of what the PROCEnf would be, in order to realize there has been a movement aimed at changing the nursing care documentation (I1).

> Being at the Teaching Hospital with the Nursing Department investing in this work process; having a team that already works with the Nursing Process (I2).

> As we participate in the tests, using the system, we tend to contribute to always improve it. It is very good because we could identify certain details that had not been observed by the administrative group, evaluating what is good and what needs to be improved (I3).

> The autonomy we have at the TH, the possibility of participation and the information availability (I7).

They also recognized as favorable aspects the opportunities of participation of the nurses representing the medical-surgical units in the development of the *PROCEnf-USP*, in the structuring and conduction of the qualification program and in the planning of the pilot test:

> The implementation of the nursing diagnosis started at the medical unit, we practically have the same group of nurses since that time and some of them participate in the administrative group of the PROCEnf system (I1).

> The nurse that represents the surgical unit in the administrative group of the PROCEnf has involved the unit nurses, helping the direction encourage them to access the system, to study the cases (I2).

> Something that facilitated the PROCEnf test is the help we received from our unit, which participated in the construction of the system (I4).

> Having a nurse from the unit that participated in the system creation is a great facilitating aspect. We can always clarify our doubts with her, in person or on the telephone; she encourages us to perform the test and use the system (I10).

For the nurses integrating the qualification program previously described, the computerizing challenge was faced and assumed with optimism, responsibility, availability and effort. They value the support provided by the people involved in this process of change and recognize that the electronic system may help them improve the agility, the time spent and the quality of the information obtained and registered through the NCS in the admission of patients:

> The nurses who took the training are extremely committed, they developed the activities proposed such as the presentation of case studies using the system. They enjoy challenges and the pilot test is a challenging proposal of change in documentation (I1).

> The nurses are interested and involved in the change proposal, and believe it is going to favor the work process, since it offers a list a diagnoses, results and interventions, articulated among themselves" (I2).

> ... the support we have from our direction, the enthusiasm of the people involved regarding the use of the PROCEnf (I6).

> The good will and the availability of the people influence a lot. Also the wish to perform the test and enjoying what is being done (I7).

> The opportunity we have is unique, because besides participating in this project and contributing to the development of the system, I consider a privilege to be part of this group (I11).

The investments of the administrative group of the *PROCEnf,* in partnership with the ND, in the development of the qualification program and in the continuous support provided to the nurses are considered essential to the success of the recommended change:

> The training allowed us to see the entire use of the system. That is the reason why I did not have difficulty processing an admission on my own, it was easy. The fact that we processed some admissions in the system makes us learn always more (I3).

> The training facilitates, it is good to have the participation of several nurses, this way we can exchange ideas regarding the system. At the unit, the nurse who works the night shift tells us her doubts and what she could do from the exercise (I4).

> The training was very important to know the system before the development of the test. I could make some evaluations and it is faster than writing the entire admission manually and later establishing the diagnoses and the nursing prescriptions (I5).

> Whenever we have a question we have someone to turn to, there is a support network to help us (I6).

> It is logical that once we are well trained, we will have more ability and use it faster, regardless the activities we have to develop (I10).

Some nurses recognize the contribution of the electronic system to increase the visibility of the medical reasoning by integrating the classifications of diagnoses, results and interventions, supporting, thus, more appropriate decisions to each patient, contemplating their real needs during hospitalization:

> When we use the system with a patient we have ideas that we could not have had on our own, I think we are able to think better (I5).

> The system is an instrument that facilitates thinking, it opens a range of diagnoses, interventions and results. It is pure nursing, an evolution in our work, in the way we treat patients (I6).

> I find the system really interesting because it integrates NANDA, NOC and NIC. It has a rich range of important information to broaden my knowledge and helps to provide better care to the patient by orientating diagnoses, results and interventions (I10).

Second category: unfavorable aspects to the implementation of the PROCEnf-USP

The development of the pilot test of the *PROCEnf-USP* at the medical-surgical units aimed at evaluating the adaptation of the system to the care reality of the nurses. The experience of the documentation in the system of cases studies regarding the evaluation of fictitious patients and the proximity to the use of this new technological resource caused apprehension to all the nurses in the study, mainly regarding the dynamics of these units, the work process previously developed and the challenges experienced in terms of people management at the institution:

> There are serious problems regarding the quantity of nursing technicians/assistants and the nurses are working hard on the direct care to the patient, in order to help the team. One nurse from each shift was trained to participate in the pilot test, but since hospitalizations take place with more frequency in the night shift, sometimes up to six hospitalizations, the nurses from the night shift will probably be able to evaluate the patient in the system only once their shift is over (I1).

> Time is what makes it difficult… I cannot perform a hospitalization and, at the same time, register information in the

system, because I have to solve several pending matters regarding the dynamics of the unit (I4).

The shift dynamics is what complicates it, because it is busy. Depending on the number of hospitalizations I cannot sit down and document everything in the system. I have to stop to do other things and then continue, it is as if I was writing… When I return I worry about losing the data I have already inserted in the system (I5).

I am a little afraid regarding the work routine, sometimes we have four hospitalizations in one afternoon or six hospitalizations at night, so I see a problem there, at least in this period of adaptation. We are nurses and there are many things that depend on us, technicians count on us… what worries me the most is the matter of time and the availability of professionals to work (I6).

We go through difficult moments in the periods when the profile of patients and their care needs change significantly, sometimes there are complicated patients. Besides, we have absent employees, other with restrictions, so some days are really busy and I cannot finish the admission of the patient in the system (I7).

The work at the unit is really busy and depending on the shift we cannot sit down in front of the computer to answer all the questionnaires. The lack of time complicates it (I8).

The clinical dynamics complicates the admission process in the system… When the shift is not so busy or patients are asleep, I go to the computer and process the admissions (I9).

At this moment the unit dynamics complicates the system use. We have several activities to do and as we do not have much experience with the system, we take some time to use it... on the days I have many hospitalizations it gets difficult to perform the entire process in the system (I10).

The lack of time is what really complicates the system use. At night, even when there are two nurses, sometimes, we do not have time to stop what we are doing and access the system... So the lack of time is still a limiting factor, we handle the rest well (I11).

Based on these initial perceptions regarding the use of the *PROCEnf-USP*, the nurses requested meetings with representatives from the administrative group, in which they evidenced the need to prioritize improvements in the system, besides reviewing the work processes in order to handle the difficulties perceived, which could compromise the conduction of the pilot test. In the character of their governability, they proposed strategies of mutual help — for instance, the redistribution of patients between the morning and afternoon shifts, reducing the number of admissions that would be performed in the night shifts —, which was accepted by the members of the administrative group and the chief nurses of the respective units.

The participants of the study pointed out their concerns regarding the insufficient knowledge about the harmonization among the classifications NANDA-I, NOC and NIC to base the selection of results, interventions and the corresponding nursing activities:

... we still do not know all the classifications of results and nursing interventions (I1).

We are not familiar with the NOC and the NIC, and this makes us insecure, because of the time we are going to spend looking for results and interventions in the system (I2).

We are not used to the NOC and the NIC and now we have to use the results and interventions in the system. It is difficult to imagine what the results would be for those certain diagnoses and the necessary interventions (I3).

We have doubts regarding the diagnoses, results and interventions. The system may even show the possibilities, but we still do not have the ability to understand them (I8).

The introduction of the NOC and the NIC in the system complicated it a little, because I did not know them (I9).

The nurses representing the medical-surgical units at the administrative group of the *PROCEnf-USP* explained these concerns manifested by the nurses to the other members in the group meetings and decided to develop a theoretical-practical course, approaching the classifications NANDA-I, NOC and NIC before starting the pilot test.

Third category: expectations regarding the implementation of the PROCEnf-USP

All the nurses expressed their positive expectations towards the computer-based nursing documentation, due to the possibility of changes in the work dynamics that would allow greater visibility to the clinical judgment, agility in the documentation of information obtained through the NCS and the composition of a database that allows to recover the patient's history in the USP-TH:

I hope the PROCEnf will help us decrease the time spent on registration and give visibility to the nurse's clinical judgment. Provided with the system, we will be able to document and name what we do and which we have never actually named, as well as the expected results and the nursing interventions (I1).

Computerizing the documentation will decrease the time spent on registering information, we are going to have an important database regarding the patient and not only his/her current hospitalization, but also the previous ones (I2).

I hope this documentation will be faster, more practical and more objective. And that based on the answers to the questionnaires we may have a complete view of the patient, with more options than we have with the admission on paper (I4).

I hope PROCEnf will give dynamism to our work, by showing many things we have not been able to see in the everyday routine, beyond what we already do. The stages provided by the system are going to integrate us better to the patient and, based on that, it is going to be easier to choose the expected results and prescribe the care (I7).

> I hope the system use will facilitate our service and that the documentation will get much faster. And it will improve, because the system broadens our possibility of choices, showing more detailed information, what would be more difficult and take longer if we had to look up the books of NANDA-I, NOC and NIC (I8).

> I like the system, I believe it will really facilitate our work. It is going to help us a lot, and as it is more organized, I can insert data in it, consult them and retrieve them if necessary (I9).

In this study, it is important to highlight the fact that the contributors manifested only positive expectations towards the implementation of the system *PROCEnf-USP* in their respective units. This attitude may be attributed to a set of factors; among them, the current organizational culture, the maintenance of the participative administration and the investment in qualification programs, in which people's intellectual and creative potential is recognized. Besides these factors, the PROCEnf, being an innovative system, is recognized by the nurses as a great possibility of advancing in nursing, according to the next statements:

> It will be an advance because there is no other system like this in Brazil, and for us it is a very good thing in the future, including for promoting what we do in scientific events... maybe the system will be good even for other hospitals too (I1).

> In the future, when the patient's medical records become electronic, the nursing area will be ready. It will really facilitate both the patient's admission and reading the records, everything will be computer-based, the records will be more legible. It is an advance to have a system like this (I3).

> I look forward to all of us using the system definitively, nurses, nursing technicians and assistants, because we are still in the beginning, only testing it (I5).

> It is a very good project, which will make history, I really enjoy participating in it (I10).

DISCUSSION

The presented results show that changing is not easy. Consequently, it requires people to leave behind what they know and experience new unknown pathways that may become sources of uncertainties. Therefore, those in charge of leading the change must plan their actions carefully and be alert to people's attitudes and behaviors, continuously evaluating the process and making interventions.

It is inferred from the participants' statements that, in order to be accepted, an innovation must contemplate important aspects for the people involved, for instance, offering an improvement for what already existed; not eliminating and interfering in other appreciated aspects; increasing the reputation of the people who adopt it; having support from people with high influence; involving those that will use it in the implementations and being modified to meet the appreciated traditional practices[5].

Any transformation at an organization represents a change in the daily activities, work relationships, responsibilities, habits and behaviors of the people composing it[11]. Thus, the implementation of any organizational change depends on each subject to think, feel and do something different.

Organizations may be conceived as social systems, extremely important for society, which combine science and people, technology and humanism. In these organizations, human behavior is unpredictable, as it results from a system of deeply rooted values and needs [12]. In this perspective, it is worth remembering that the processes of change are directly influenced by the organizational culture that represents the frame through which facts, objects and people are interpreted and evaluated in a certain context[13].

The participative administration is a philosophy that values the participation of people in the process of decision-making regarding the different aspects of administration in the organizations[13]. Participation may be defined as a shared process, in which people's emotional involvement takes place in group situations that encourage them to contribute for the group objectives and to take on the responsibility to achieve them. In this context, decisions must be taken in group, through common consensus and the maximum involvement and commitment of the people in it[11]. Therefore, participation implicates the use of people's intellectual potential, both to increase the quality of the decisions and administration and to increase the satisfaction and motivation of those involved in it[13].

Nurses must have access to exact information in real time in order to perform the broad variety of care and administrative interventions in nursing. Administrative, legal and care demands, the increase of health knowledge, the technological advance and the new therapeutic modalities favor the emergence of complex problems and situations, requiring greater technical competency from the nurses and increasing, systematically, the documentation of the entire care process[14].

According to the nurses, the investments made provided the improvement of the theoretical-practical knowledge allowing transformations into a more flexible and favorable attitude towards the conduction of the process. In this institution, it was observed that, besides the promotion of qualification opportunities for the nurses, there was the concern to create structural conditions so that the change would take place.

It is important to highlight that the accurate documentation of clinical data is one of the requisites for quality-centered nursing care. Documentation is important for the continuity of care, to develop clinical knowledge, base judgment, guarantee security and manage the nursing

care. Patients' clinical records are the main tool to improve clinical communication and care quality[15] and the structured documentation produces more reliable and significant nursing data than the free documentation[16].

In this sense, the *PROCEnf-USP* provides support to its users by generating diagnostic hypothesis based on the answers to the questionnaires. Nevertheless, these hypotheses are going to be considered by users, who may accept, deny or change them, editing their defining characteristics, related factors or risk factors. Users are also able to add diagnoses that have not been suggested by the system and have the responsibility to decide the best diagnosis for the patient in evaluation. After choosing the diagnosis, the nurse will move on, with the system support, to the selection of the respective results, interventions and nursing activities[8].

It is evidenced that the maintenance of the participative administration provides people with real possibilities of participating in the administration with freedom to question, discuss, suggest, modify, change a decision, a project or a simple proposal. That is because when there is an environment of mutual trust among the parts, people are involved, encouraged, and wish to contribute[12].

Nevertheless, in any type of human activity, people tend to do whatever they know, instead of what they need to do, due to the fear of changing and taking risks. Therefore, among the essential conditions for a successful change, it is worth highlighting the importance of the higher administration to provide strong support for its implementation[17], as observed in the studied institution.

The authors emphasize that the planned change is the considered application of knowledge and abilities by a leader, aimed at implementing a change. The success of an attempt is characterized by the capability of the change agent — person enabled in the theory and in the implementation of planned changes — to handle, properly, emotions such as feelings of achievement and pride, losses and tension[18].

It is possible to infer that the initial perceptions of the nurses regarding the *PROCEnf-USP* are based on very favorable attitudes towards innovation. However, the use of the system in the real workspace and time will permit to broaden their evaluation. Nurses will need to know and use it appropriately, in order to evidence the concrete advances and propose improvements based on the experienced reality. The developed system must be tested carefully, evaluated continuously and modified according to the needs evidenced by the users and with the available resources.

The use of a computer-based information system, documenting and processing information in the direct care to the patient is fundamental in the context of the Nursing Process, which requires the integration and interpretation of complex clinical information for making decisions regarding the individualized nursing care[19].

Computerizing the nursing documentation is a great challenge faced in several parts of the world, since it allows to recover data regarding the clinical decision-making in nursing, a fundamental requisite for the practice based on evidences, and may contribute for the development of studies in nursing[8].

In the next years, the use of informatics in nursing is going to revolutionize processes in all the nursing service levels, mainly in hospitals, providing operational and strategic benefits for the organization of the profession[20]. However, nursing is going to find new opportunities and new challenges due to the technological and scientific advances in informatics, which allows to deal with massive quantities of data in an organized and fast way, counting on resources that did not exist before[21].

Computer-based information systems, such as the *PROCEnf-USP*, bring benefits to their users, for instance, improving the time spent on patients' data documentation, removing redundancies, improving the time of communication within the team, optimizing the access to information and offering information to the multidisciplinary team[20].

Nevertheless, the authors agree that the fast technological evolution allows the assimilation of new technologies without the reflection about the values and the intentionality of their use, making health professionals and customers vulnerable to accept and believe that informatics is able to solve health problems and improve the care quality. Thus, health professionals must acknowledge that technologies are not neutral, and they must be analyzed as for their intentionality and power relationships regarding their use in health, aimed at recovering ethical and human dimensions. Therefore, they become less vulnerable to the market pressure, promote the care quality and improve the population's health condition[22].

CONCLUSION

According to the perception of the nurses in this study, strategies aimed at the qualification to perform the pilot test favored the preliminary use of the electronic system, indicating their expectations towards the potentialities and the needs to incorporate improvements.

The results obtained in this study evidence it is important for the ND direction and the administrative group of the *PROCEnf-USP* to be sensitive to the needs reported by the nurses and available to favor the development of changes that contribute for the success of the system's pilot test, which is the common objective of all the involved subjects.

The possibility of previously using the *PROCEnf-USP* and the opening to suggestions of improvements contributed to encourage the nurses of the medical-surgical units to become members of the administrative group in the promotion of the electronic system to other nurses of the USP-TH.

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