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EXPERIENCE REPORT

Online training for health professionals in three regions of Brazil

Capacitação on-line para profissionais da saúde em três regiões do Brasil

Capacitación en línea para profesionales de la salud en tres regiones del Brasil

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ABSTRACT

Objective: to describe online training experience aimed at professionals working in the public health service in 27 Neonatal and Pediatric Intensive Care Units, and to reflect concerning the training process and possible improvements in this process. **Method:** this is an experience report study about the online training with multidisciplinary content, planned from the situational diagnosis of 27 institutions. The training target set was 10 participants per institution and per module, including the following topics: Indicators of Quality as a Management Tool, Hand Hygiene, Patient Safety, Intravenous Therapy and Patients' Chart Record. **Results:** a total of 2,071 active students in the modules, with 1,046 approved. The mean of 76 students per module exceeded the target set. **Conclusion:** experience has shown that online training is comprehensive as a potential tool for the professional technical development and digital inclusion. The online learning system becomes weakened if participants are unaware of the technological resources.
Descriptors: Pediatric Nursing; Neonatal Nursing; Education, Distance; Information Technology; Training.

RESUMO

Objetivo: descrever experiência de capacitação *on-line* direcionada aos profissionais atuantes no serviço público de saúde em 27 Unidades de Terapia Intensiva Neonatal e Pediátrica, refletir sobre a capacitação e possíveis melhorias nesse processo. **Método**: trata-se de relato de experiência sobre a oferta *on-line* de conteúdos multidisciplinares, planejados a partir do diagnóstico situacional das 27 instituições. A meta de capacitação estabelecida foi 10 participantes por instituição e por módulo, sendo os temas: Indicadores de Qualidade como Ferramenta de Gestão, Higienização das Mãos, Segurança do Paciente, Terapia Intravenosa e Registros no Prontuário do Paciente. **Resultado:** total de alunos ativos nos módulos foi 2.071, com 1.046 aprovados. A média de 76 alunos por módulo superou a meta. **Conclusão:** a experiência demonstrou que a capacitação *on-line* constitui ferramenta com potencial abrangente para o desenvolvimento técnico profissional e inclusão digital. O sistema *on-line* de aprendizagem se torna fragilizado se os participantes desconhecem os recursos tecnológicos.
Descritores: Enfermagem Pediátrica; Enfermagem Neonatal; Educação à Distância; Tecnologia da Informação; Capacitação.

RESUMEN

Objetivo: describir la experiencia sobre la capacitación en línea direccionada a profesionales actuantes en el servicio público de salud de 27 Unidades de Terapia Intensiva Neonatal y Pediátrica y reflexionar sobre la formación y los adelantos relacionados a ella. **Método:** se trata de un relato de experiencia sobre la oferta en línea de contenidos multidisciplinarios, ideados a partir del diagnóstico situacional de 27 instituciones. La meta de capacitación establecida fue de 10 participantes por institución y por módulo, siendo los temas: Indicadores de Calidad como Herramienta de Gestión, Higienización de las Manos, Seguridad del Paciente, Terapia Intravenosa y Registros en el Prontuario del Paciente. **Resultado:** el total de alumnos activos en los módulos fue de 2.071, con 1.046 aprobados. El promedio de 76 alumnos por módulo superó la meta pretendida. **Conclusión:** la experiencia demostró que la capacitación en línea constituye una herramienta de gran potencial para el desarrollo técnico profesional y para la inclusión digital. La utilidad del sistema de aprendizaje en línea se ve comprometida si los participantes desconocen los recursos tecnológicos.
Descriptores: Enfermería Pediátrica; Enfermería Neonatal; Educación a Distancia; Tecnología de la Información; Capacitación.

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INTRODUCTION

Currently, it is common to identify professionals of varying ages and training levels, from young graduates to experienced and postgraduates seeking to update knowledge in their fields. As the United Nations Educational, Scientific and Cultural Organization (UNESCO), lifelong increasingly and continuously, men are educated in respect to their personal and professional development[1]. This process occurs both in formal teaching situations as well as in independent studies or experiences. In the health area, especially where scientific information progresses exponentially, demand for professional development can be considered even more critical[2].

With the advent of information and communication technologies (ICT), the possibility of democracy has extended the access to scientific knowledge produced by renowned teaching and research centers, especially through online education. This, based on proper planning, enables effective teaching and learning processes. It also enables self-learning, 'distance learning', through internet. Online Education is characterized by a systematic set of resources and interactive networks to distribute content organized for educational purposes, which are accessible at any time and place. It is different from Distance Education (DE), which is regulated by the Ministry of Education for the Brazilian educational system, since it does not need professors during the learning process[3].

According to the Brazilian Institute of Geography and Statistics (IBGE), in 2011, the Brazilian population living in households containing personal computer and Internet access in the North and Northeast regions accounted for 21.4% and 23.1% respectively, and, in the Southeast region, this figure reaches 50.4%[4]. Despite recent investments, such as the initiative of the Federal Government for implementing the National Broadband Plan, whose goal was to standardize access to broadband Internet, focusing on the most underprivileged areas of technology, inequality still exists[5].

Thus, it is predictable that professionals working in hospitals in the public health service, particularly in less favored areas, may have poor access to computers connected to the internet, which impacts access to online courses.

Occupational hazards, multiple jobs, poor working conditions, lack of security, professional devaluation and low salaries are described in Brazilian studies, being associated to the quality of life of nurses, as a problematic factor for job satisfaction and availability for improvement[6]. In this scenario, it is possible to infer that health professionals, subject to working conditions, similar to those described herein, tend to have a low access to digital culture.

The objectives of this study are to present the experience with online training, aimed at professionals working in Neonatal and Pediatric Intensive Care Units (NICU and PICU) and to reflect on the training process and possible improvements in this process.

METHOD

This is an experience report about the online availability of multidisciplinary content, planned from the situational diagnosis of hospitals in the public health service.

Project development

Initially, the project was submitted to the Research Ethics Committee, which approved the research under the Protocol number 07/12.

The development of online training provided to NICU and PICU professionals of the hospitals of the public health service was an initiative of the Social Responsibility (SR) sector of the Society Samaritano Hospital, located in the city of São Paulo, under the Support Program for Institutional Development of the Unified Health System (PROADI-SUS) of the Brazilian Ministry of Health (BMH), regulated by Decree No. 1.826 of August 24th, 2012[7], whose purpose is to enable Brazilian hospitals, recognized as Excellence Hospitals[8], to contribute their tax breaks to develop projects aimed at strengthening SUS. The Samaritano Hospital of São Paulo was responsible for the development and implementation of training in hospitals of the public health service.

The project entitled "Organizational Development Program and Management and Assistance Support with emphasis in Neonatal and Pediatric Intensive Care Units" seeks to provide training as the main focus of its scope, encompassing care practice and organizational management to professionals from 27 NICU and PICU in 15 states in the North, Northeast and Midwest regions of Brazil.

Through situational diagnosis of the beneficiary institutions, it was possible to identify the relevant contents to be discussed in the online training. In this sense, five sensitive areas were selected with multiprofessional range, which were didactically organized into five independent modules. These were offered in the following order: Quality indicators as a management tool, Hand hygiene, Patient safety, Intravenous therapy and Registry in the patients' chart.

The content has been prepared by specialist nurses, PhDs and Masters in Nursing with expertise in the fields of neonatology, pediatrics and infection control service of the Samaritano Hospital, with resources of computer services, instructional design and educational consulting. The previous proposal provided that online content should be made available so that the professionals could study by themselves, that is, without the online tutoring monitoring, justified by technical infeasibility and logistics.

The main guiding questions of the initial discussions were: Are hospitals able to ensure qualified access to participants? Is this mode of education sufficiently attractive to this public? Are the participants able to learn autonomously, without the direct support of an instructor?

Even before many questions, choosing the online mode was presented as an alternative capable of achieving professionals living in regions far from major centers of learning, reducing any existing geographical barriers[9].

Predicting possible difficulties of access to computers, we donated 52 computers to the beneficiary institutions. Thus, in addition to allowing access, enabling the realization of the course in small groups, in the hospital, or even in a classroom, which would fit a larger group, monitored by a professional who could present the content in a projector or similar.

The modules are offered independently of each other and without the need for tutoring, which enabled its reproduction without high investments, allowing free access to professional participants.

Because it is a large project, with several classroom activities, in addition to online training, it was possible to arrange a time with two representatives from each institution, which took place in

the Samaritano Hospital in São Paulo. The main objective of the meeting was to present the macro project. In one of the periods we provided two hours with the pedagogical responsible to guide professionals on access and navigation in the virtual environment to be offered to their teams. We asked each representative to spread the received orientations to other professionals of their institutions.

The target set in the project, referring to the number of participants was 10 professionals per institution and per module, therefore, minimally 270 students per module. Another aspect to note was the professional index that finished the module with the evaluation test. Because training was not mandatory, the expectation was that everyone could access the content, and that at least 50% of the students were approved[10].

Pedagogical model

The option was to build the training modules in order to allow autonomous learning, focusing on interactive teaching resources designed so that the user had freedom to learn, taking into account their own pace and learning styles.

The pedagogical model was designed from adult learning principles, or Andragogy. Among the arguments of this model, it is emphasized that the development of an actual meaningful learning, adults should be able not only to make decisions about what and how they want to learn, but also assimilate what they learn better what is closely related to their practice and prior knowledge. So we focused on a flexible and problem-based teaching approach, focused on content that effectively mobilized for the development and acquisition of concepts, procedures and significant attitudes to professional practice.

Samaritano's Hospital authoring content passed thorough a pedagogical treatment (instructional design), and have been adapted and scripted to be presented along an illustrated and interactive fictional story, using Flash technology and Articulate platform.

The course was organized and made available in a virtual learning environment for distance learning courses, the Modular Object-Oriented Dynamic Learning Environment (Moodle)[11]. In Moodle, the process of teaching and learning takes place through learning resources and assessment activities.

The participant students managed their own learning process, setting their goals, timetables and study sites. At the end of each module, if they had reached 70% of an elaborate test with multiple choice questions, we provided a certificate of completion on the same virtual environment. As the answers of the tests could be saved before being sent to the evaluation, it was possible to use the test as well as self-learning tool, as the student was encouraged to return to the contents whenever necessary.

To support learning, other resources and additional materials were also made available, such as tutorial access, student guide and links to videos about online Education.

Although autonomy was valued, the possible little experience in this form of learning led some limits, having as scope a better organization. Thus, for example, instead of keeping them permanently open, the modules have been released to professionals according to a schedule. On average, each module remained open in the virtual environment for two months, with an extension of one to two months depending on demand.

Access to the virtual environment

The registration was done through a worksheet in Excel® that contained the full name of the professional, e-mail, state where they worked and hospital name to which they belonged. This worksheet was loaded into the virtual environment, at which were generated access data (login/password) for each student, then sent by email. We preferred to perform a mass enrollment, because this model would envisage how many would be the potential students and how many, in fact, would access the platform of the courses. In addition, it was possible to monitor the participation of students per institution.

To clarify technical questions, a support e-mail was made available, with periodic monitoring.

RESULTS

To analyze the data, participants were classified as a group of "Actives", represented by the number of students who accessed the modules; and the group of "Approved", represented by all students who have completed the tests and obtained 70% of correct answers.

Considering the participants of the five modules, the total number of active students was 2.071. Out of this total, 1,046 students were approved.

The number of students of the five modules and the distribution of 27 benefiting institutions from the program in their respective regions are shown in Table 1.

Table 1 - Number of participants of the five modules distributed over many institutions in the North, Northeast and Midwest, from 2012 to 2014

Region and number of beneficiary institutions	Modules offered in the online training									
	1º Quality indicators		2º Hand Hygiene		3º Patient safety		4º Intravenous therapy		5º Records in patients' charts	
	A	AP	A	AP	A	AP	A	AP	A	AP
Northeast (12)	325	156	232	151	174	123	152	94	114	11
North (11)	206	74	185	120	132	85	130	55	87	8
Midwest (4)	94	36	84	59	65	43	53	27	38	4
Total	625	266	501	330	371	251	335	176	239	23

Source: Authors
Notes: A (Active); AP (Approved)

The number of active students varied among regions in the number of institutions, namely: Northeast, three in João Pessoa (PB); one in Maceió (AL); one in Natal (RN); one in Recife (PE); two in Salvador (BA); three in São Luís (MA); and one in Teresina (PI). North, two in Belém (PA); two in Boa Vista (RR); two in Macapa (AP); two in Palmas (TO); one in Porto Velho (RO); and two in Rio Branco (AC). Midwest, two in Cuiabá (MT) and two in Goiânia (GO).

Table 1 shows that the number of active students in the first module is higher than the others; justified, perhaps, due to the fact this is a new initiative in the institution and relevant content, current and at no cost to participants. We doubt if the number of active students would be kept in there were other modules. A tendency to decrease was observed, especially in module 5. The average number of active students was 76 students per module and exceeded the planned target of 10 participants per institution and per module. Analyzing the total approved in the five modules, the average was 50.5%, which included the initial expectation. We observed greater incentive and adherence to the course by professionals from the NICU and PICU, where managers were more participatory and involved with the project.

Regarding the active students index, who completed the evaluation test and being approved, we obtained the following results: 1st module, 42%; 2nd module, 65%; 3rd module, 67%; 4th module, 52%; and 5th module, 10%.

CONCLUSION

Experience in online training for professionals in the NICU and PICU from the North, Northeast and Midwest of Brazil, described in this report, allowed us to realize the potential of this mode of education, to improve learning processes in the context of professionals working in hospitals of the public health service, both the technical and professional development and for effective inclusion in the digital world. The distance learning course can be developed for different populations and in different areas, with no geographical limitations.

The donation of computers to the beneficiary institutions was crucial, since some managers provided time for professionals to access the devices in the NICU and PICU, in a training that did not impact on costs to participants.

We highlight the importance of adapting the method offered to the profile of the participants, because it is a self-learning model, so it is important to keep encouraging students to overcome barriers inherent to the mode of learning and his/her skills with the web tool. The adoption of a free online tutoring course can result in motivational absence; for example, immediate response of doubts regarding the content, which would help the continuing stimulus in the development of the student in the modules.

The registration system stands out as an important point to be improved. As the online mode proved to be new to many professionals, we evidenced an inconvenience for completing and forwarding the worksheet data for the subscription. Many professionals had no e-mail or affinity with this tool, which made it difficult to meet deadlines for registration, and rework as to send login and passwords. This makes us think that, certainly at the forthcoming courses, the implementation method may be revised because there is possibility of improving this process without prejudice regarding the control of the participants.

Another opportunity for improvement is the ability to include video classes, which would enrich the didactic material and learning; however, this feature usually requires broadband and higher technological quality in comparison to those currently available to professionals in the participant's regions.

Brazil has continental dimensions with political, social, economic and cultural differences, so that the current supply of online courses through the use of technological devices constituted a challenge to the project. However, adherence to the course by the institutions showed its potential to be developed in any future proposals. Our experience has shown that, in institutions whose managers were participatory, involved and committed to sharing information with their team, adherence was higher.

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