ARTICLE INFORMATIONAL

NURSING EMPOWERMENT BASED ON THE IQIC INTERNATIONAL COLLABORATION PROGRAM FOR THE CARE OF CHILDREN WITH CONGENITAL HEART DISEASE

O EMPoderamento da Enfermagem Baseado no Programa de Colaboração Internacional IQIC para o Atendimento às Crianças com Cardiopatia Congênita

EMPODERAMIENTO DE LA ENFERMERIA BASADO EN EL PROGRAMA DE COLABORACIÓN INTERNACIONAL IQIC PARA ATENDER A LOS NIÑOS CON CARDIOPATÍA CONGÉNITA

ABSTRACT

Objectives: to share knowledge and experience between an international center of excellence in pediatric cardiac surgery and a related program in Brazil, emphasizing the empowerment of nursing for the care of children with congenital heart disease. Method: the strategy used by the program was based on long-term technological and educational support models from that center, contributing to the creation and implementation of new programs. The Telemedicine platform was used for real-time transmission of monthly themes. A chat software was used for interaction between participating nurses and the group from the center of excellence. Results: nursing professionals specialized in care provided to this fragile population had the opportunity to participate in the knowledge conveyed. Conclusion: it could be observed that the technological resources that implement the globalization of human knowledge were effective in the dissemination and improvement of nursing regarding the care of children with congenital heart disease.

Descriptors: Congenital heart disease; Empowerment; Nursing.

RESUMO

Objetivos: compartilhar o conhecimento e experiência entre um centro de excelência internacional em cirurgia cardíaca pediátrica e um programa correlato no Brasil, destacando o empoderamento da enfermagem para o cuidado às crianças com cardiopatia congênita. Método: a estratégia utilizada pelo programa foi baseada em modelos de suporte tecnológico e educacional a longo termo advinda daquele centro contribuindo para a criação e efetivação de novos programas. Foi utilizada plataforma de Telemedicina para transmissão mensal em tempo real dos temas. Um programa de chat foi utilizado para interação entre os enfermeiros participantes e o grupo de excelência. Resultados: os profissionais da enfermagem especializados no cuidado a esta frágil população tiveram a oportunidade de participar do conhecimento transmitido. Conclusão: pode-se observar que os recursos tecnológicos que implementam a globalização do conhecimento humano foram efetivos na disseminação e aprimoramento da enfermagem no que diz respeito ao cuidado às crianças com cardiopatias congênicas. Descriptors: Cardiopatia congênita; Empoderamento; Enfermagem.

RESUMEN

Objetivos: compartir conocimiento y experiencia entre un centro internacional de excelencia en cirugía cardíaca pediátrica y un programa similar en Brasil, haciendo hincapié en el empoderamiento de la enfermería para el cuidado de niños con cardiopatía congénita. Método: la estrategia utilizada por el programa se basó en modelos de soporte tecnológico y educativo a largo plazo de ese centro, contribuyendo a la creación e implementación de nuevos programas. Se utilizó la plataforma de Telemedicina para la transmisión en tiempo real de temas mensuales. Un software de chat fue utilizado para la interacción entre los enfermeros participantes y el grupo del centro de excelencia. Resultados: los profesionales de enfermería especializados en la atención a esta frágil población tuvieron la oportunidad de participar en los conocimientos transmitidos. Conclusión: se pudo observar que los recursos tecnológicos que implementan la globalización del conocimiento humano han sido eficaces en la difusión y mejora de la enfermería con respecto a la atención a niños con enfermedad cardíaca congénita. Descriptors: Cardiopatía Congénita; Empoderamiento; Enfermería.

1Master in Health Sciences, São José do Rio Preto Medical School/FAMERP, Base Hospital Local Manager/FAMERP. IQIC/Boston Children’s Hospital Program, Harvard University, USA. Email: adilip@famerp.br. 2Specialist and Holder in Cardiovascular Surgery from the Brazilian Society of Cardiovascular Surgery; Lecturer at the São José do Rio Preto Medical School; graduate advisor of the São José do Rio Preto Medical School. Head of the Pediatric Cardiovascular Surgery Service at the São José do Rio Preto Base Hospital. São José do Rio Preto (SP), Brazil. Email: uacroti@uol.com.br. 3PhD in Health Sciences, Responsible for the Anatomy course of the Specialization Program in Obstetric Nursing/FAMERP. São José do Rio Preto (SP), Brazil. Email: uacroti@uol.com.br
INTRODUCTION

In children, heart failure is often caused by congenital heart diseases or cardiomyopathies. The incidence in the world is approximately 1% in all live births and it is the most common congenital problem among neonates. In Brazil, approximately 28,000 children are born with congenital heart defect each year and only 6,000 undergo surgical treatment, according to data from the Brazilian Society of Cardiovascular Surgery (SBCCV). The causes are different from those that affect adults, such as artery disease and systemic arterial hypertension.¹

They are anomalies resulting from anatomical defects in the heart or the circulatory system that compromise their function. The etiology of most heart defects is unknown; however, several factors are associated with an incidence that is higher than normal. They include some prenatal factors, such as maternal rubella, malnutrition, diabetes and maternal age above 40 years.

The genetic factors include risk of congenital heart defects in children who have a sibling or parent with these defects or a chromosomal aberration, such as Down syndrome and birth with other congenital abnormalities.

Evolution of the intervention

In the last 30 to 40 years, a marked improvement in the results of interventions in neonates and children with heart diseases or congenital cardiopathies has been observed. This is due to two factors: technological progress and a significant growth of knowledge among specialists involved in pediatric cardiology care. Thus, shared interdisciplinary collaboration has been one of the biggest aspects contributing to this improvement. Initially, in specialized centers, the pediatric cardiology care model was described as linear, because the cardiologist made the diagnosis and referred the patient to a surgeon. In turn, the latter analyzed the case report and performed the operation based on the evaluation of this report. Postoperative care was constantly delegated to the surgical team (typically resident physicians). After hospital discharge, most monitoring took place at the clinic where the surgeon worked. Numerous factors contributed to failures in the linear model, such as surgeries performed by the surgeon both in adults and children. The cardiologist did not take part in postoperative intensive care and hierarchies contributed to the rigidity of this system, because the senior surgeon often deterred the junior members of the program, especially by establishing a communication barrier.²

The multidisciplinary team

It was especially in the late 1980s and early 1990s, with the introduction of catheter intervention, that the pediatric cardiologist’s role changed and was not confined just to diagnosis, because the interventionist cardiologist is occasionally required to deal with residual issues in events with complications, mainly in the postoperative period. Together with the development of interventionists, there was progress in the area of images that also contributed significantly to a shift in the paradigm and resulted in better interdisciplinary cooperation. The technological development allowed more sensitive equipment and transducers and even the use of transesophageal transducers. In recent decades, echocardiography was one of the biggest advances in pediatric cardiology. The uses of echocardiography are many and, from the late 1980s, it has invaded the operating rooms. Currently, the intraoperative transesophageal echocardiography is a consecrated and routine method for hemodynamic evaluation.

These changes gave rise to a defined multidisciplinary team; that is, the recognition of distinct specialties for the care provided in pediatric cardiac surgery. This team is constituted by the pediatric cardiologist, a cardiac surgeon, a cardiac anesthesiologist, intensive care specialists, and the nursing staff. As reported by other authors,³ the pediatric cardiology program must be understood collectively as a whole, as responsible for the patient. Once the patients are admitted to the program, the members of the team perform individually their specific tasks making use of their skills and experience, but always with mutual respect and trust.

Among these diverse specialties, nursing is highlighted with regard to direct care provided to children, because together with the evolution of new equipment, techniques and, above all, the scientific development that has been growing at very fast speed, nurses are required to enhance their knowledge in technical and scientific aspects, since the treatment and follow-up in the pre, trans and postoperative, and even in surgical treatment, are directly related to the qualification of nursing care.
Nursing empowerment:

‘Empowerment’ is one of the expressions defined with broader sense than its original meaning in English, which is ‘giving power’ to someone in order to accomplish a task without needing the permission of others. Paulo Freire’s concept follows a different logic: an empowered teacher, person, group or institution are those that perform the changes and actions that lead them to evolve and strengthen themselves. Empowerment implies conquest, advance and overcome on the part of those who are empowered (the active subject of the process). Paulo Freire created a special meaning for the word ‘empowerment’ in the context of philosophy of education, because education through empowerment has its emphasis in both the groups (more than in individuals) and cultural transformation. It is in the educational context of humanitarian medicine that there should be a place for cooperation rather than for individual competition with regard to care provided to most children born with congenital heart defects. This goal can be achieved by building a coalition between teams and groups involving projects with ideals and work in education and culture of all its members.

Partnership between two cardiovascular programs: Twinning Program

With the advancement in diagnosis and treatment of congenital heart disease, many of the children treated were able to survive. In most congenital heart abnormalities, early mortality associated with surgery has been reduced to 5% or less. However, this progress has been largely limited to developed countries.

There is a bad distribution of access to cardiac care, especially for children who live in less privileged places in the world. Therefore, there is a critical need to establish and improve the number of pediatric cardiovascular programs, especially in developing countries, such as Brazil. The recommended strategy should be based on long-term technological and educational support models from the centers of excellence that can contribute to the creation and support of new centers. This strategy is called ‘twinning program’. This is the combination of two cardiovascular programs (one from a center considered of excellence and the other a comprehensive program in a developing country) for establishing a relationship of values for both programs. The biggest reason for creating this partnership is the goal and the commitment of both programs on the challenge to build a structure directed to quality care provided to children with congenital cardiopathies, especially those that are submitted to heart surgery.

International Quality Improvement Collaborative Program (IQIC) for Congenital Heart Surgery:

Description of the program

The establishment of surgical programs for children with congenital heart diseases in developing countries is an important step to improve surgical results. In 2007, the clinical leaders who provide heart surgery care to children all over the world gathered at the Global Forum on Humanitarian Medicine in Cardiology and Cardiac Surgery in Geneva. In this event, they discussed the existence of possible factors that contribute to mortality specific to children submitted to heart surgery in developing countries. It was evident that there are few benchmarks to identify specific risk factors and to assess the performance of programs. In an effort to respond to these gaps, the Collaborative QI was released. In 2008, the Children's HeartLink organization, together with the Boston Children's Hospital, the Coeurs Pour Tous Humanitarian Association in Geneva, the KM Cherian Foundation in Chennai, and the International Children's Heart Foundation in Memphis, established the fundamentals of the International Quality Improvement Collaborative (IQIC) for Congenital Heart Surgery Program in Developing Countries.

IQIC aims at facilitating the collaboration of health teams from around the world working to create a culture of safety for patients and improvement in infrastructure quality for children submitted to heart surgery programs in developing countries. Its mission is to reduce mortality and major complications for children in these programs.

The IQIC is divided into two phases:

* Phase 1: Teams of nurses and doctors of each location are responsible for their data collection and management of the project. They submit clinical, diagnostic and procedures information in a centralized repository using a Web database as a tool. Assessment of surgical results and mortality rates based on risk scores adjusted for congenital heart disease surgery (RACHS-1 - Risk Adjustment in Congenital Heart Surgery) are used as benchmarks for comparison of results with other participating locations.

* Phase 2: It includes participation in monthly educational modules and webcasts provided by the Boston Children's Hospital. The webcasts for learning focus on improving the team based on practice through nursing empowerment, training, prevention of...
infection, and implementation of safe operating practices.

This implementation aims to assess the sustainability of a collaborative model. The objective is to identify the drivers of mortality and create strategies focused on quality improvement for obtaining satisfactory results. Since January 2010 until now, the Boston Children’s Hospital has been conducting monthly Web seminars in order to facilitate the dialogue and to disseminate quality knowledge learning.

These modules are based on the three mortality drivers: team-based practice; reduction of surgical site infection, and safe perioperative practice (Figure 1). Each module includes a series of three educational sessions that develop from elementary to advanced levels. The main goal of the seminars is to provide a collaborative learning experience that is flexible enough to be adapted according to the needs of each location. The Boston Children's Hospital develops the modules and provides local assistance in the implementation of interventions in order to improve quality of care provided to children with congenital heart diseases. The modules include an overview of the problem, learning objectives, application and problem-solving through case studies and tools for assessment.

### Module 1: Team-based Practice: effective communication and team work
- **Elementary**: Clear Communication and Efficient Team at work
- **Intermediate**: Care in the Postoperative Pediatric Cardiac Surgery: important considerations in nursing
- **Advanced**: Resource Management in Crises at the Intensive Care Unit

### Module 2: Reducing Surgical Site Infections and Bacterial Sepsis
- **Elementary**: Prevention in Health Care - Associated Infections: Creating a Culture of Hand Hygiene
- **Intermediate**: Prevention of Bacterial Sepsis - Infections in the Bloodstream
- **Advanced**: Prevention of Bacterial Sepsis - Surgical Site Infections

### Module 3: Safe Perioperative Practice
- **Elementary**: Implementation of a Surgical Safety Checklist for Congenital Heart Surgery (Session I)
- **Intermediate**: Implementation of a Surgical Safety Checklist for Congenital Heart Surgery (Session II)

### Advanced Modules:
Modules with advanced content that expanded from the mortality drivers were also created. The themes are as follows:
- Heart Embryology
- Arrhythmias
- Congenital Heart Defects
- Pain and Nutrition Management
- Respiratory Management in the Postoperative Period and Prevention of Pneumonia
- Fetal Circulation
- Partnership and participation of the Pediatric Cardiology and Cardiovascular Surgery Service at the Base Hospital (FUNFARME) - São José do Rio Preto Medical School (FAMERP), SP, in the International Quality Improvement Collaborative (IQIC) Program

Since December 2008, the partnership between the local institution and the American organization Children's HearLink (CHL) was established with a view to the identification of fundamental factors, such as its potential for the development of...
cardiology and pediatric surgery, including a minimum number of 100 surgeries a year and interest on the part of the medical staff and board of directors of the institution with responsibilities for mutual collaboration.

This way, since January 2010 to date, this integration continues advancing, especially in the participation of the International Quality Improvement Collaborative (IQIC) program for Congenital Heart Surgery in Developing Countries through the maintenance of a world database–based on the RACHS-1 risk score—and monthly Web seminars. The Web seminars are streamed through a scheduled monthly telemedicine platform. Prior to the date scheduled, each lesson is translated (Brazilian Portuguese) and also contextualized. On the day and time scheduled, the local team meets and the already translated and contextualized lessons are held simultaneously with the lessons provided by the IQIC team in real time. Interactivity in synchronous process is accomplished through the use of chat rooms for questions and responses between the local team and the IQIC team.

The nursing staff has had a constant participation and has been receiving effective and continuous training in the main themes (mortality drivers) related to the improvement of care for children who undergo cardiac surgery. The Pediatric Cardiac Surgery service has been functioning at the Base Hospital since January 2002. In addition to performing surgeries to children with serious and rare cardiopathies, the service serves patients of any age or weight and has already operated children with less than a week of life. The work of the Pediatric Cardiac Surgery is part of the Cardiac Surgery Service of the Base Hospital and works together with the Pediatric Department.

These global efforts in the dissemination of knowledge for the improvement of care provided to children with congenital heart disease also have the perspectives of monitoring and development with respect to the opening and planning of the new women and children's hospital in the city of São José do Rio Preto. Therefore, all nursing empowerment, permeated by international organizations of excellence, contributes to the growth and success of the pediatric program at the hospital.

REFERENCES


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Corresponding Address

Adília Maria Pires Sciarra
Rua Dionísio F dos Reis Filho, 65 / Ap. 32
CEP: 15085-440 – São José do Rio Preto (SP), Brasil