
CHALLENGES AND OPPORTUNITIES IN TEACHING PEDIATRICS

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Abstract: Undergraduate studies are exposed to many new innovative techniques of teaching. The most specific is teaching and learning Pediatrics, due to many challenges that are posed with the focus of such teaching, i.e. children as patients. More specifically, there is a shift in medical education toward educating physicians who can work as team members, who acquire strong practical experience, who have good communication skills; an ideal medical education would produce physicians who, as part of a health team, practice “patient-centered medicine.” It is well recognized that communicating with children and their families can be challenging for health professionals. A survey of young patients by the Health Commission in 2004 suggested that many children are unhappy with the way in which health workers relate to them whilst they are in hospital. Equipping undergraduate students with the tools for effective communication via specific teaching whilst on clinical placement should therefore be part of the curriculum at all universities. Good clinical communication skills correlate with improved health care outcomes. The recognition that communication skills are a basic clinical skill and the development of practical teaching tools such as training on phantoms, hands-on training, Structured, Clinical, Objective Referenced, Problem-based, Integrated and Organized method of learning, case scenarios and Problem Based Learning, have led to an improvement in acquiring knowledge and communication skills. The complexity of such studies is increased because of the three-way consultation between a child, parent/guardian, and the doctor. Current curricular trends have substantially expanded the opportunities for pediatric departments to achieve full partnership and provide an optimal environment for students to acquire a sound general medical education, preparing them for any specialty and for lifelong learning in an evolving health care system. For the next steps, curriculum leaders in pediatrics can consider each of the following approaches: (1) full partnership with family physicians in the planning and conduct of longitudinal perception, population-based experience, and other integrated ambulatory experiences; (2) active participation as a preceptor, small group facilitator, and mentor or role model for case-based educational experiences and small group activities related to acquisition of necessary skills, attitudes, and values for the early clinical experiences; (3) partnership with basic science and other clinical departments to ensure that clinical correlations and case-based opportunities provide balanced and representative exposure to pediatric diseases, maintenance of health, and prevention of illness concepts that are pertinent to adult-onset manifestations of illness; (4) emphasis on developmental and maturational aspects of wellness and of illness, even when age-related or logistical limitations preclude access to a comprehensive age range of infants and children; and (5) full representation of core principles of pediatric health in the curriculum and in performance-based assessments, including biologic and psychosocial development, parental and family support systems, risk behaviors, and environmental risks in children as antecedents of adult-onset morbidity and mortality, social and emotional development and behavior, and relationships between parenting, family dynamics, and maintenance of pediatric health and prevention of adult illnesses. Comprehensive incorporation of the principles of developmental biology, preventive pediatric health care, growth and development, maladaptive environments, and the pediatric origins of major medical and psychological morbidities across all years of medical faculty is more readily attainable in the context of these new curricular trends.

Keywords: Body mass index, pregnancy, newborn, outcome

1. INTRODUCTION

Undergraduate studies are exposed to many new innovative techniques of teaching. The most specific is teaching and learning Pediatrics, due to many challenges that are posed with the focus of such teaching, i.e. children as patients. More specifically, there is a shift in medical education toward educating physicians who can work as team members, who acquire strong practical experience, who have good communication skills; an ideal medical education would produce physicians who, as part of a health team, practice “patient-centered medicine.”

Current research on learning indicates that using a wide variety of teaching strategies in the classroom increases student level of knowledge, and this raises the question of whether it has already become immoral to teach without

extensive use of active learning techniques that so enhance performance. Learning and participation are inseparable. In response to findings such as these, the professoriate is being encouraged to adapt and alter their teaching methods to address the new generation of postmodernist students.

Teaching Pediatrics is much more challenging due to the poses even greater demands in selecting methods of teaching, either theoretical or practical, bed-side or any other practical techniques. Working with children as patients implies legal issues as well. Parents or guardians are bonded to the circle of the team. Legal requirement for consent to include children within the teaching circle complicates the selection of the methods. There are many published cases when parents have forbidden teachers and students disclosing the data and information about their child illness.

Due to the requirements of and a pressure to the medical students, there are much more and different kinds of pressures to the students and to the professors and assistants as well. Additional pressure is placed when teaching Pediatrics, due to the specific needs of those patients. Given the pressures on academic faculty for both clinical and research productivity, we must identify, support, and train a cadre of faculty for whom educating, assessing, and guiding the next generation of doctors represent the central component of their academic contributions. Given the unsustainably high costs of health care, it is critical to educate both current and future physicians about the appropriate and rational use of diagnostic and therapeutic modalities in order to minimize their overuse and misuse. Medicine is increasingly becoming a “team game” and physicians must be well-trained to work as both a member and a leader of health care teams designed to provide high quality, patient-centered care. Whereas medical education has traditionally focused on diagnosis and treatment of disease, a high priority must simultaneously be placed upon education relating to maintenance of health and prevention of disease. Measuring and improving quality of care needs to be embedded into the cultures of medical education and patient care; an important step has been the designation of practice-based learning and improvement as one of the required general competencies for future doctors.

2. COMMUNICATION SKILLS

It is well recognized that communicating with children and their families can be challenging for health professionals. A survey of young patients by the Health Commission in 2004 suggested that many children are unhappy with the way in which health workers relate to them whilst they are in hospital.[1] Equipping undergraduate students with the tools for effective communication via specific teaching whilst on clinical placement should therefore be part of the curriculum at all universities. Good clinical communication skills correlate with improved health care outcomes. The recognition that communication skills are a basic clinical skill and the development of practical teaching tools have led to an improvement in acquiring knowledge and communication skills. The complexity of such studies is increased because of the three-way consultation between a child, parent/guardian, and the doctor. Current curricular trends have substantially expanded the opportunities for pediatric departments to achieve full partnership and provide an optimal environment for students to acquire a sound general medical education, preparing them for any specialty and for lifelong learning in an evolving health care system. Parents should become partners in the care and treatment of their children.

3. CHALLENGES IN TEACHING PEDIATRICS

There are several challenges while teaching Pediatrics, and some of them were mentioned above. Due to the requirements of and a pressure to the medical students, there are much more and different kinds of pressures to the students and to the professors and assistants as well. Additional pressure is placed when teaching Pediatrics, due to the specific needs of those patients. Given the pressures on academic faculty for both clinical and research productivity, we must identify, support, and train a cadre of faculty for whom educating, assessing, and guiding the next generation of doctors represent the central component of their academic contributions. Given the unsustainably high costs of health care, it is critical to educate both current and future physicians about the appropriate and rational use of diagnostic and therapeutic modalities in order to minimize their overuse and misuse. Medicine is increasingly becoming a “team game” and physicians must be well-trained to work as both a member and a leader of health care teams designed to provide high quality, patient-centered care. Whereas medical education has traditionally focused on diagnosis and treatment of disease, a high priority must simultaneously be placed upon education relating to maintenance of health and prevention of disease. Measuring and improving quality of care needs to be embedded into the cultures of medical education and patient care; an important step has been the designation of practice-based learning and improvement as one of the required general competencies for future doctors. And what about patients’

trust when treating children? The pediatrician has to establish friendly atmosphere in order to get the best information from the patient. It is very useful if residents go through training for understanding the child's psychology, emotional and social development.

4. OPPORTUNITIES IN TEACHING PEDIATRICS

Currently, many methods and strategies are developed aiming to create “bed-side like” teaching, especially in practical lessons. There are few methods that are mostly explored by teachers and accepted by the students and residents:

4.1. Bed side teaching combined with hands-on learning

Teaching in the clinical environment is defined as teaching and learning focused on, and usually directly involving, children as patients and their problems [2]. The clinical environment consists of inpatient, hospital outpatient and community settings, each with their own distinct challenges. It is in this environment that students learn what it means to be a real doctor. Skills such as history taking, physical examination, patient communication and professionalism are best learned in the clinical setting, medical knowledge is directly applied to patient care. Teaching in the clinical setting often takes place in the course of routine clinical care where discussion and decision-making take place in real time. This is the most common pattern for postgraduate trainees. Undergraduate students benefit from additional practical lessons specifically planned for teaching. These lessons may take place in the ordinary clinical environment and make use of the patients who are opportunistically available. They may on the other hand be highly structured with particular patients brought up especially for the session.[3] The role of the inpatient teacher is one of the most challenging in medical education. Teachers should try to facilitate knowledge acquisition by asking questions that make learners think and reason rather than recall facts. More importantly, knowledge should be applied to specific patients for clinical problem solving. Teachers can set a comfortable and safe learning environment in which they and the learners freely ask questions and are prepared to admit their limitations. Inpatient teams also need to behave as a teaching community where each member respects the other in order to maximize their learning. Teachers should learn to challenge their learners without humiliating them and provide support so that learning can be furthered. Time constraints, varying learner levels, unexpected teaching moments, presence or absence of the patient can all be factored in while the teacher attempts to answer all students' questions.[4] Learning in the clinical setting is the cornerstone of medical school education, but there are strong imperatives to optimize the ways in which students acquire clinical expertise. Deliberate practice is characterized by attention, concentration, effort and repetition of skills; it is an important tool for developing and maintaining professional expertise. Research has led to a greater understanding of how medical students develop core clinical skills, especially in the areas of diagnostic reasoning, communication and physical examination. Advances in information technology and instructional design are helping to strengthen the links between formal educational activities and opportunistic learning in the clinical setting. Educating medical students and residents in the office setting presents the simultaneous challenges of providing quality medical care, maintaining efficiency, and incorporating meaningful education for learners. A recent literature review identified several common barriers that often impede effective clinical teaching, including time constraints, inadequate institutional financial support, lack of access to educational specialists, and lack of access to appropriate educational space and resources.

4.2. Problem based learning

Problem-based learning is a kind of learning method deeply involving critical thinking and problem solving. This method involves the student in applying all acquired knowledge and including them as equal members of the team in decision making process. This method in teaching Pediatrics is successful in solving medical problems rarely met in real practice, and is useful both, in theoretical and practical teaching. Especially is useful for medical problems requiring invasive diagnostic and therapeutic approach, thus saving ill children of unnecessary multiple exposing on examinations and discussions. There are plenty of case scenarios which have educational value, and helps to prepare students for clinical lessons.

4.3. SCORPIO (Structured, Clinical, Objective, Referenced, Problem-based, Integrated and Organized) method

The teaching method well known by the acronym SCORPIO has been proven as very useful with the great impact on the knowledge and practice gained.[5] SCORPIO involves delivering the program through a series of lecture-demonstrations at which students, teachers and patients gather at a defined area. Following a short introductory lecture, students rotate in small groups, through a series of teaching stations. These stations are structured to provide students with a problem-based, integrated learning experience. Assessment stations may be included before, during

or after the teaching circuit. The teaching system has been formally evaluated over a period of time and now has an established place in the curriculum of this medical school.[6] The greatest role is that of the trained teacher who interact with participants to learn skills.[5] It is based on a module consisting of a study guide, teaching stations and formative assessment representing the three components required for adult learning [7]. As the original SCORPIO methodology was designed for medical student teaching, this study has used a modified methodology for postgraduate inter-professional learning. Participants felt that during the SCORPIO, learning was driven not only by active participation, but also by formative assessment and feedback from teachers. SCORPIO method was applied successfully in Macedonia for neonatal in-service training.[5] In the clinical environment it is vital to provide feedback to trainees as without feedback their strengths cannot be reinforced nor can their errors be corrected. It is a crucial step in the acquisition of clinical skills, but clinical teachers either omit to give feedback altogether or the quality of their feedback does not enlighten the trainees of their strengths and weaknesses.

4.4. Simulations with phantoms and multimedia teaching

Considering the fact that learning Pediatrics is not a game, and patients must not be exposed to unnecessarily examinations or interventions, acquiring practical skills for the first time on phantoms, imitating alive patients is of outmost value. Currently, there are varieties of phantoms which give possibility to train for almost all pediatric interventions. Only those students who feel comfortable with a phantom should treat patients under the supervision of the assistant. But, phantoms cannot replace other teaching practical methods.[8]

In terms of multimedia, the cognitive theory was considered in order to highlight the mode of learning and practicing. The cognitive theory of multimedia learning was described as three dimensional one (has three components): the sensory memory, working memory, and long-term memory. All these types of memory are in place sequentially, one by another. The greatest value is that the knowledge acquired is long lasting. It also is related to teaching nurses and midwives.[9] [10]

5. CONCLUSIONS

Current curricular trends have substantially expanded the opportunities for pediatric departments to achieve full partnership and provide an optimal environment for students to acquire a sound general medical education, preparing them for any specialty and for lifelong learning in an evolving health care system. Many of the barriers are overcome [11] For the next steps, curriculum leaders in pediatrics can consider each of the following approaches:

- full partnership with family physicians in the planning and conduct of longitudinal perception, population-based experience, and other integrated ambulatory experiences;
- active participation as a preceptor, small group facilitator, and mentor or role model for case-based educational experiences and small group activities related to acquisition of necessary skills, attitudes, and values for the early clinical experiences;
- partnership with basic science and other clinical departments to ensure that clinical correlations and case-based opportunities provide balanced and representative exposure to pediatric diseases, maintenance of health, and prevention of illness concepts that are pertinent to adult-onset manifestations of illness;
- emphasis on developmental and maturational aspects of wellness and of illness, even when age-related or logistical limitations preclude access to a comprehensive age range of infants and children; and
- full representation of core principles of pediatric health in the curriculum and in performance-based assessments, including biologic and psychosocial development, parental and family support systems, risk behaviors, and environmental risks in children as antecedents of adult-onset morbidity and mortality, social and emotional development and behavior, and relationships between parenting, family dynamics, and maintenance of pediatric health and prevention of adult illnesses.

Comprehensive incorporation of the principles of developmental biology, preventive pediatric health care, growth and development, maladaptive environments, and the pediatric origins of major medical and psychological morbidities across all years of medical faculty is more readily attainable in the context of these new curricular trends.

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