Child Health Records: Are they Valid and Useful to Children and Pediatric Practitioners?

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Children are important consumers of health care, yet neither children nor their clinical practitioners have received much attention from the health informatics community. Child health needs differ from those of adults, and the purpose of health encounters for children focus to a greater extent on health promotion and evaluation of developmental milestones. The early childhood period is critical because it is during this time the children develop the expectations and attitudes about health care that they will carry with them throughout their lives. The primary purpose of this project is to examine the congruence in communication between children and pediatric practitioners. From this examination implications will be drawn for designing pediatric clinical records and developing strategies for determining the extent to which the record serve the child's health information needs and the clinician's health service delivery needs.

INTRODUCTION

The growing concern over delivering quality health care calls for the need to address efforts in closing the communication gap between patients and clinicians. Terms such as "family-centered care" and "patient-centered care" that are frequently spoken in the health care industry suggests that delivering quality health care is not limited to curing diseases and helping patients recover from illnesses. Quality health care also includes the ability for patients and clinicians to build cooperative relationships through honest and respectful communication.

Communication issues between patients and clinicians have been explored in a number of past and recent studies. However, when communication issues are explored between these two populations, it is often done so within the context of adult patent and clinician relationships. Perhaps this could be attributed to adults (compared to children) having a greater capacity to communicate their views and a more willingness to express their concerns and ask questions during health care encounters. Therefore, research about child-clinician communication still remains to be a relatively unexplored area.

While the importance of understanding adult patient-clinician communication must not be discounted, there is also a need to investigate how children interpret routine health examinations because they too, comprise a significant proportion of health care consumers. The purpose of this proposal is to introduce a study that is intended to explore how children interpret routine pediatric examinations. Two major factors served as the impetus for the development of this study. The first is the status of children as health care consumers. Oftentimes, children are treated as passive recipients of health care services in clinical settings. This can occur when clinicians talk "past" or "over" the (child) patient by directing their conversation towards the parents regarding information about the patient's health status, interventions, and examination procedures. Furthermore, this passivity may be reinforced in pediatric encounters when clinicians equate the child's passiveness with compliance. The second factor is the need to foster collaborative relationships between children and clinicians.

The purpose of this paper is to describe how exploring communication could uncover important cues that can lead to a better understanding of how children practice health-promoting behaviors and how compliance can be improved between children and healthcare professionals. To accomplish these two objectives, this proposal will consist of the following three components. First, a description of two theories will be provided (one from a developmental/cognitive perspective and the other from a nursing perspective) and how they comprise a larger theoretical framework. Second, a study proposed to explore how children view routine pediatric encounters will be described. And lastly, the feasibility will be addressed in

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addition to the implications of this study in understanding child informatics.

THEORETICAL FRAMEWORK

The theoretical component of this proposal will introduce a model designed to provide a framework for guiding our study of child-clinician communication. Vygotsky's[1,3] cognitive-contextual theory and Orem's[2,4] Self-Care Deficit Nursing Theory will be described below.

Cognitive/Developmental Theory

As a contexutalist, Vygotsky posits that human development cannot be studied apart from the social and physical milieu of the child's environment.[1] The Vygotskyian perspective views human cognitive development to occur within the context of social and environmental factors. Furthermore, the development of children's learning capacities are contingent on the extent of how various features in the environment stimulate their internal processes.

One of the major elements of Vygotsky's theory is the concept of "zone of proximal development." Also referred to as "potential development", "zone of proximal development" was defined by Vygotsky[3] as the distance between a child's "actual developmental level as determined by independent problem solving" and the greater level of "potential development as determined through problem solving under adult guidance or in collaboration with more capable peers (p. 86).

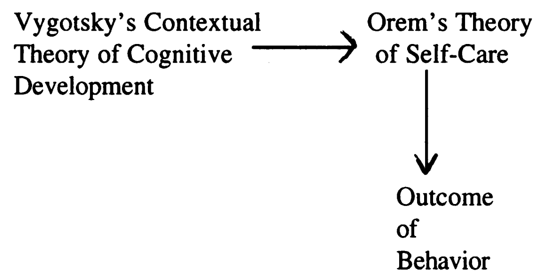
Vygotsky asserted that learning activates a wide range of internal developmental processes but these processes can only be stimulated when the child interacts with people in its environment.

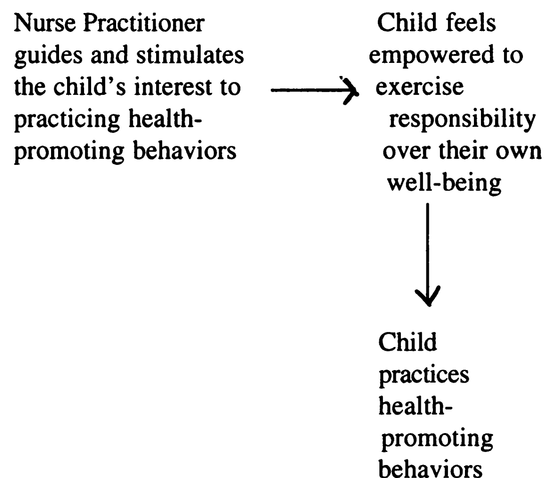
Orem's Self-Care Deficit Nursing Theory

According Orem's theory of self-care management,[4] individuals have the ability to take measures to promote their own physical well-being. In essence, they have the capacity to take steps in practicing health beneficial behaviors. Orem's theory is comprised of three major elements (i.e., sub theories within the larger theory). These three elements include the concepts of self-care agency, therapeutic self-care demand, and nursing systems.

Self-care agency refers to the individual's ability to practice behaviors that would be beneficial to one's health. Therapeutic self-care demand refers to the set of tasks that the individual must practice to achieve the most optimal health status. A self-care deficit occurs when the demands required to achieve or maintain optimal health status (therapeutic self-care demand) exceeds the individual's capacity to perform the necessary tasks to achieve this goal (self-care agency). This discrepancy between the therapeutic self-care demand and the self-care agency leads directly to the third element, nursing system. Nursing system refers to the measures used to bridge the gap between therapeutic self-care demand and self-care agency and nurses frequently have patients bridge this gap.

CONCEPTUAL FRAMEWORK





Most typically developing children have the ability to practice health-promoting behaviors. However, such behaviors must be stimulated and

guided by those who are in positions to provide information about health and nutrition. By explaining the procedures and encouraging them to ask questions, clinicians are in that position to stimulate the children's interests in health-promoting behaviors. When children are able to internalize the information about health-promoting behaviors, they are more likely to feel empowered about their own well-being and may be more willing to take the necessary steps to maintain good health. This willingness to take responsibility for their health may ultimately lead to their actually practicing health-promoting behaviors.

STUDY OF CHILD-CLINICIAN COMMUNICATION

Thirty children will participate in a study currently underway that is intended to provide the initial step in understanding the congruency between how children and clinicians interpret routine pediatric examinations. The subjects were collected in pre-schools throughout the Madison area and their ages ranged from 4 to 5. Twenty-seven children are currently recruited to participate in this study, 22 have been interviewed, and 20 of those interviews have been completed.

A nurse practitioner conducted a simulated pediatric examination. After the examination, the subjects were interviewed by a research assistant.

Questions during the interview were designed to probed for the child's opinion about the health exam. Examples of such questions included; "I noticed that the Nurse (also) put this thing on your arm and pumped it up. Why did she do that?"; "What did the Nurse find out when she put the thing on your arm and pumped it?"; and "How important was it that the Nurse used this?".

The data form the interviews provided insight to not only what children understood about routine pediatric examinations, but also what they did not understand. Children appeared to understand the questions probing *why* a nurse perform certain activities during the examinations. An example of such a question would be, "Why do kids get checkups?". Responses to this question were either to maintain good health or to avoid illness. However, the children had difficulty answering questions that asked about specific instructions given to them by the nurse. An example of such questions include, "So what was the nurse trying to tell you to do (in reference to a wearing a bike helmet)?". Future analysis will include further evaluation of the consequences of how children perceive health examinations.

FEASIBILITY AND IMPLICATIONS OF STUDY

The study of child/clinician communication was designed to be sensitive to the developmental status of the subjects. Because the subjects ranged in the ages of 4 and 5, the questions during the interview were piloted to ensure that the child could understand the items being asked. The interviews were carried out in a manner that facilitated the child's interest and cooperation. For example, the device of having the child describe the health encounter to a puppet permitted the child to recall in a playful and nonthreatening manner events that had occurred.

Encouraging children to be active participants in their own health examinations could foster a sense of empowerment. This empowerment may lead to their willingness to take responsibility for managing their own health and practice health-promoting behaviors. Furthermore, a better understanding of child/clinician communication may also engender more positive relationships between patient and clinicians and improve child's compliance.

Implications for Health Informatics

This project provides a model for health informatics studies involving children. The recruitment, evaluation, and debriefing strategies facilitated children's participation.

Vygotsky asserts that children gain skills through social interaction. The clinical encounter is a social context. Children learn self-care skill through social interaction during clinical encounters. These patterns suggest that the clinical records for children should be different from those used with adults. Specifically, the records should include more elements addressing health promotion that encourage the clinician to focus on the health-promoting aspects of the clinical encounter. The response that were generated from the children indicate that there is a need for clinicians to be sensitive to both the

idiosyncrasies unique to the child while at the same time, establishing standards for categorizing responses to include all children. Additionally, the clinical record as a health-promoting tool could be better exploited by having children provide self-report of selected personal health behaviors.

The present structure of clinical records do not support feedback of language to patients of any age. This is particularly troublesome with respect to children because of the opportunity to shape future health behaviors through effective use of health information. Children's inability to remember specific instructions suggests a need for feedback that reinforces the instructions and perhaps presents the content in several formats. For example, clinical systems that record whether safe biking instructions were provided to the child could be systematically linked to point card systems that provide a graphical and text summary of the record.

The project provides the unique opportunity to conjecture about the nature of clinical records and clinical record management that would be more beneficial to children. Based on the extent of congruence observed, we may find it necessary to recommend a record structure that supports both the clinician's and the child's perspectives on health events. It is useful to envision innovative uses of computer systems, such as with graphics or automation that may provide the child with more vivid feedback about his or her health status and health promotion needs.

Acknowledgments

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