Chapter 4
Creating a Computer Simulation with Ill-Structured Problems for Physical Therapists in the Acute Care Setting

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ABSTRACT

The purpose of this phenomenological study is to identify the types of ill-structured problems physical therapists face in the acute care setting for a computer simulation to train students in a professional physical therapist education program. Ten physical therapists who practiced in the acute care setting in four large urban Midwestern hospitals participated in semi-structured interviews. Results show that acute care physical therapists experience complex, ill-structured problems that encompass all direct and indirect patient care activities and are complicated by system factors outside of their control. Solving the problems described by the participants requires clear and accurate communication and an awareness of the role of physical therapy in the acute care setting. The use of these authentic challenges for a computer simulation can allow students in a professional physical therapist education program to develop better problem-solving skills.

INTRODUCTION

As healthcare reform is realized, the responsibilities for entry-level physical therapists (PTs) have expanded (Plack, 2002). In the acute care setting, improvements in the understanding of the benefits of early rehabilitation in the intensive care unit and access to electronic medical records (EMR) have provided PTs the opportunity to have a greater impact, but decreasing lengths of stay and increasing levels of acuity have made providing excellent care more challenging. PTs in the 21st century work as consultants who are tasked with using their unique education and professional perspectives to solve ill-structured problems (ISP) in challenging, fast-paced environments (Dean, 2009).

Educating students in a professional physical therapist education program to be successful in the acute care setting can be challenging. This difficulty is not due to the fundamental nature of physical therapy practice in the acute care setting, but rather because the didactic coursework must help students develop the cognitive processes that are needed to assimilate and synthesize the vast amounts of information from a multitude of sources including physicians on the care team, the EMR, the patient, and his or her family members. This requires a student to organize the information, evaluate its relevance to a particular patient case, and then make appropriate clinical decisions.

These complex skills can be effectively taught in a computer simulation that is highly structured to promote critical thinking or clinical reasoning. This chapter focuses on identifying the types of ISPs physical therapists face in the acute care setting, which can be used for a computer simulation for PT students. The central research question pursued is: What types of ISPs should be included in a computer simulation to train PTs in the acute setting? To shed light on this, the study explores the components of a typical, ill-structured patient scenario as well as the ill-structured challenges an acute care PT encounters.

CRITICAL THINKING AND ILL-STRUCTURED PROBLEMS

The most recent studies in the field of physical therapy education are focused on improving and measuring critical thinking or clinical reasoning skills (Brudvig, Mattson, & Guarino, 2015 & 2016; Fu, 2015; Furze, Black, Hoffman, Barr, Cochran, & Jensen, 2015; Furze, Gale, Black, Cochran, & Jensen, 2015). There is a robust history of researching the means of improving the critical thinking ability of allied health students, but the results have been mixed (Coker, 2010; Hunter, Pitt, Croce, & Roche, 2014; Kantar, 2014; O'Dell, Mai, Thiele, Priest, & Salamon, 2009; Vendrely, 2005).

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