

# Integrating Evidence-Based Practice into a Therapeutic Exercise Course: Real-Time Patient Experience

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Athletic training students need real-time patient experiences in order to transfer the knowledge and skills learned in the classroom into clinical practice. The objective is to present a description of an assignment that could be incorporated into a therapeutic exercise course giving the student an opportunity to evaluate a patient, design a program utilizing evidence-based practice (EBP), and work with the patient in a 1-on-1 capacity over a period of time to implement the program. Students may not always have the opportunity in the clinical education environment to develop a rehabilitation program for a patient based on their own evaluation of the patient and utilize EBP concepts in the development of a program. This assignment involves utilizing patient evaluation techniques, including the use of a patient-rated outcome measures instrument, as well as the use of clinician-based measures, to develop a rehabilitation program. The program must be anchored in sound evidence and patient needs, incorporating multiple facets (eg, range of motion exercises, strengthening exercises) within the limitations of the injury/condition. Students report increased confidence in their ability to design a rehabilitation program, as well as their ability to utilize EBP in the clinical setting. They also develop problem-solving skills and cultivate professional attributes (communication skills, interpersonal skills) through this activity. In conclusion, this assignment is 1 way to infuse EBP concepts into a classroom assignment that requires real-time patient care experience over a period of time.

**Key Words:** Patient-rated outcome measures, athletic training education, rehabilitation, athletic training student

## INTRODUCTION

Athletic training students need clinical experience with real-time patients over a period of time to reinforce the concepts, skills, and techniques learned in a therapeutic exercise course, as well as to infuse evidenced-based practice (EBP) concepts and techniques into clinical practice. The purpose of this paper is to outline an educational strategy for blending classroom activities, clinical experience with a real-time patient, and EBP concepts into 1 comprehensive learning experience.

## ASSIGNMENT DETAILS

As a requirement for a therapeutic exercise course, athletic training students complete an assignment over the course of the semester working with a patient in a rehabilitative capacity. The student must recruit an individual (eg,

collegiate athlete, secondary school athlete) who is in need of therapeutic rehabilitation to serve as their patient, pending approval of the preceptor who is responsible for that patient's care. The student will ideally be able to recruit a patient who they may be directly involved with as a result of their clinical education placement. However, if that is not possible, students may discuss the requirements of the assignment with any preceptor, and the preceptor may be able to help identify a potential patient. The criteria for this assignment include selecting a patient who requires at least 4 consecutive weeks of rehabilitation for 1 particular injury or condition. Once a potential patient is identified, the student is required to discuss the requirements of the assignment with the patient and obtain the patient's consent (or the parent's consent if the patient is a minor) through a written medical release document. All documentation, including physician notes, testing results (magnetic resonance imaging, computed

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tomography, x rays, etc), and surgical report (if applicable) is obtained, allowing the student to fully understand the injury and/or surgical intervention. Like any patient-care experience in the clinical education setting, the student is required to follow the guidelines set forth by the Health Insurance Portability and Accountability Act. In addition, this assignment requires that the student be supervised by the preceptor whenever providing patient care. The student is required to perform an initial evaluation of the patient, including the incorporation of various measurement techniques (goniometer, girth, muscle grading, pain scale, etc) as well as a patient-rated outcome measure (PROM). If the patient is already engaged in a therapeutic intervention plan, the student must still perform an evaluation of the patient in order to identify the appropriate deficiencies. The student must choose a PROM that is appropriate to the patient, injury, or condition, and that is deemed reliable and valid in the literature. Since there are numerous PROMs from which to choose, students are provided with a resource entitled *Musculoskeletal Outcomes Measures and Instruments*<sup>1</sup> that summarizes many of the outcomes instruments used in clinical practice to provide a starting point. However, the athletic training student will still need to acquire the PROM (ie, performing an Internet search), learn how to score it (eg, understanding the minimally clinically important difference for that scale), and administer it to the patient as required by the assignment, tracking progress over multiple administrations. Based on the results of the initial evaluation, the student then develops a therapeutic intervention program, citing at least 3 current ( $\leq 10$  years) journal sources in order to demonstrate that the interventions used align with current evidence. Depending on the patient's needs, the therapeutic intervention plan should include the following: pre-exercise modalities, manual therapy techniques, exercise designed to increase range of motion or flexibility, strength, muscular endurance, and/or muscular power, proprioception (balance, coordination, and/or agility), post-exercise modalities, as well as any self-treatment or home exercise programs. Once developed, the student is required to discuss the program with the supervising preceptor, justifying the incorporation of the interventions and exercises included. One of the key features of this assignment is that the student is responsible for developing the rehabilitation program based on assessment findings (including the PROM) and within the limitations of the injury or condition, or limitations imposed by the physician, thus requiring critical thinking and practical application. The patient must be thoroughly re-evaluated by the student on a weekly basis, repeating clinician-based measurements, and documenting the results, and the student must write a patient progress note, revise the rehabilitation goals as appropriate, and modify the therapeutic intervention plan (modalities and exercises) based on the needs of the patient. At all times, the student is required to discuss any potential changes to the therapeutic intervention plan with the preceptor prior to the changes being made. However, a more formal meeting is required between the student and the preceptor responsible for the care of that patient on a weekly basis to communicate the patient's progression, setbacks, and discuss changes to the rehabilitation plan. The PROM will again be administered at the completion of 2 and 4 weeks, for the purpose of tracking the patient's perception of function.

Upon conclusion of the 4-week program, the student is required to write a reflective summary of the rehabilitation experience, how the plan was modified based on patient evaluation and outcomes, as well as successes, failures, and challenges faced by the student and/or patient. The student is also required to provide justification, based on current research evidence, for the various therapeutic interventions chosen, the specific emphasis (eg, key muscles to be strengthened) for this rehabilitation program, and the prognosis for the patient's return to function and activity. In addition, the student is required to report significant detail related to the PROM that was chosen. This includes the validity and reliability of the instrument, how the scores are interpreted, including a discussion on the minimum detectable change and minimally clinically important difference values. Also, the student must report the applicability and justification for the use of this PROM instrument based on the patient and how the results of the PROM administered related to patient progress and clinician-based outcomes.

## OUTCOMES

The desired outcomes of this assignment are to incorporate the knowledge and skills learned in the classroom, infusing the concepts of EBP, to a real-time patient regarding the entire therapeutic intervention process. This assignment includes the following components: understanding and evaluation of medical documentation; rehabilitation evaluation procedures, including PROMs; development and modification of a therapeutic intervention plan based on the results of the evaluation measures, patient needs, and sound evidence; development of problem-solving and critical thinking skills; and effective professional communication (with health care personnel as well as with the patient). The reflective summary that is a required component of this assignment provides subjective feedback pertaining to the value of this assignment to the student. Athletic training students report that this assignment requires them to understand all aspects of the injury or the surgical procedure performed because they are developing the plan and must provide evidence to support the use of various interventions. Also, because the student is developing the program, they have a greater sense of ownership, which differs from having a preceptor develop the program while the student supervises the patient through the exercises. Furthermore, students indicate that their interpersonal skills have increased because they are responsible for communicating all aspects of patient care with the patient, preceptor, and in some cases, a physician or parent. Lastly, students indicate that their confidence in the ability to develop an intervention plan increases through the completion of this assignment because they see the progress that the patient has made based on the plan that they developed.

## REFERENCES

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