

Does Utilizing Laboratory Based Patient Scenarios in a Physical Therapist Assistant Neurology Class Improve the

Students' Perceptions of Evidence-Based Practice (EBP): A Case Report

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Abstract

BACKGROUND AND PURPOSE: Physical therapist assistants (PTAs) are expected to be able to apply evidenced-based practice (EBP) principles to patient care, yet no research exists in the area of EBP from the PTA perspective. The purpose of this case report is to investigate PTA students' perceptions of EBP after the utilization of laboratory based patient scenarios. **CASE DESCRIPTION:** Fourteen PTA students were given a twelve-question survey to complete regarding their perceptions of EBP prior to receiving their initial lecture in EBP and again as a follow up upon completion of the four lab sessions. **OUTCOMES:** Means of the pre-survey results, post-survey results, as well as percent change were analyzed showing a positive change in perception of EBP from start to finish of the project. **DISCUSSION:** Utilization of laboratory scenarios in a PTA neurology course improved the students' perceptions of EBP in all categories surveyed. Data also suggested that the activity improved the students' abilities to practice EBP within the laboratory setting, on model patients.

Introduction

"Physical therapist assistants (PTAs) work as part of a team to provide physical therapy services under the direction and supervision of the physical therapist. PTAs implement selected components of patient/client interventions (treatment), obtain data related to the interventions, and make modifications in selected interventions either to progress the patient/client as directed by the physical therapist or to ensure patient/client safety and comfort."¹ PTAs are expected to have a thorough understanding of EBP methods as well as the ability to apply the EBP principles to patient care as set forth by the Commission on Accreditation of Physical Therapy Education (CAPTE) and by *A Normative Model for Physical Therapist Assistant Education*.² There are four standards within the CAPTE document *The Standards and Required Elements for Accreditation of Physical Therapist Assistant Education Programs* that discuss which elements of EBP must be included in the curriculum of PTA programs (Items 7D8-7D11).³ Finally, the Federation of State Board of Physical Therapy lists evidence-based practice as material that is tested on the Board Exam for PTAs.⁴

Physical therapist assistant curriculums are required to be completed "in no more than 5 semesters or 80 academic weeks or 104 calendar weeks, including 520-720 hours of clinical education."³ Given that no research exists in the area of EBP from the physical therapist assistant perspective, it is a skill required by the accrediting and licensing agencies for PTAs, and minimal amount of time is allotted in the curriculum for these skills to be mastered, methods should be explored to determine effective mechanisms of presenting the material in a concise and meaningful way.

References

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Case Description and Problem

Fourteen, Phase II PTA students at a rural technical college in South Carolina took part in this study. They were enrolled in a one plus one model curriculum and had completed one, seven-week, clinical affiliation at an outpatient clinic, skilled nursing facility, or an acute care hospital. All were in their last semester of coursework prior to their final clinical affiliation. One course "PTH: 244, Rehabilitation," included basic neuroanatomy, pediatric neurology and adult neurology, was chosen as the test course for this study. Eight students held Bachelor's degrees, one held an Associate's degree, and five had a high school diploma with some college credits.

The "Lab Project" for this course was selected to integrate the EBP skills into practice. Once the students had completed the standard laboratory sessions where they were educated in the "standard" treatment methods for each patient population, they were then given the same scenarios with the opportunity to integrate EBP skills. Students were given a survey to complete regarding their perceptions of EBP prior to receiving their initial lecture in EBP and again as a follow up upon completion of the four lab sessions. This survey sought to determine students' perceptions of EBP, pre and post intervention. The survey results data were converted to an ordinal one through five scale with "strongly disagree" corresponding to a one, "disagree" a two, "no opinion" a three, "agree" a four, and "strongly agree" as five. Students were given four attempts to practice EBP in the lab setting.

Each student posted his or her selected research article on a class discussion board to prevent duplication of articles. In lab, the students presented the name of the article, the clinical question utilized in PICO format, the search process used to obtain the article, and then highlighted the results from the critical appraisal of the article. The student would then apply the research to the model patient in the lab, either an adjunct instructor or another student. The grading rubric was anonymously used to score each student's presentation by all students and faculty, but the course instructor grade was the only score utilized for assigning official student grades. This was done for four concurrent lab sessions. Neither the pre/post survey nor the grading rubric were rated for their reliability or validity. The rubric was created for this course as no previous surveys existed for the PTA student population.

Results

Means of the pre-survey results, post-survey results, as well as percent change were analyzed for each of the twelve questions (Chart 2). All twelve questions showed a positive change in perception of EBP from start to finish of the project. The range of change across all questions was from 7.58% to 31.34% (Chart 2). Class grading averages from each session showed a consistent increase from the first session of 19.73 to a perfect score of 20 on the final day (Chart 1).

STUDENT	LAB 1: Student Score out of 20	LAB 2: Student Score out of 20	LAB 3: Student Score out of 20	LAB 4: Student Score out of 20	STUDENT AVERAGE
1	20	20	20	20	20
2	20	20	20	20	20
3	19.86	20	20	20	19.965
4	20	19.857	20	20	19.96425
5	20	19.846	20	20	19.9615
6	20	19.846	20	20	19.9615
7	20	19.846	20	20	19.9615
8	19.72	20	20	20	19.93
9	19.83	19.846	20	20	19.919
10	19.01	20	20	20	19.7525
11	19.003	19.666	20	20	19.66725
12	19.6	19.285	19.714	20	19.64975
13	19.86	18.76	19.846	20	19.6165
14	19.39	19.714	19.142	20	19.5615
AVERAGE	19.73	19.76	19.91	20.00	

Chart 1: Peer/Instructor Scoring via Rubric

Discussion

Based upon the pre-survey results, students had a relatively positive perception of EBP prior to the start of the activity. When the post-survey results were analyzed, the students' perceptions of EBP improved on all questions. The survey's first six questions asked students' feelings regarding EBP and what they believe they had seen in practice. The last six questions were focused more upon the process of EBP itself and the comfort level of the student with each step of the process. The results showed a range of increasing from 7.58% to 31.34% across all questions.

Limitations included utilizing mock patients that were instructors or other students, as the program is not allowed to have actual patients for liability reasons. Another limitation was giving feedback to the students following each session, which may have led to the noted improved performance on the final sessions. A third limitation remains that the survey utilized had to be created, and hence may not have been valid or reliable. Finally, with multiple students assigned the same scenario, the activity became a race against each other to get to utilize the article they desired due to the "no duplication of articles" rule.

Survey Question	Pre Survey Average	Post Survey Average	Difference	% Change
I believe evidence-based physical therapy practice is applicable to me as a PTA and I understand how to implement it in the clinical setting to improve my skills as a clinician.	4.21	4.93	0.71	14.49%
I believe my role in health care as a PTA encourages me to utilize evidence-based practice.	4.43	4.93	0.5	10.14%
I believe current research is important with regards to how I treat patients.	4.5	4.93	0.43	8.70%
I believe the field of physical therapy values evidence-based practice for patient management.	4.36	4.71	0.36	7.58%
I believe I have a strong understanding of what evidence-based practice physical therapy is and I understand how to implement it in the clinic.	3.57	4.79	1.21	25.37%
I believe I have seen evidence-based practice utilized while completing my clinical rotations.	3.71	4.21	0.5	11.86%
As a student member of the American Physical Therapy Association (APTA), I know how to access the APTA's research resources, search for relevant literature, and obtain full text articles to utilize for evidence-based practice.	4.29	4.86	0.57	11.76%
As a student at this college, I know how to access databases, search for relevant literature, and obtain full text articles to utilize for evidence-based practice.	4.14	4.71	0.57	12.12%
I feel confident in my abilities to ask a good clinical question utilizing the PICO method.	3.29	4.79	1.5	31.34%
I feel confident in my abilities to find the best evidence using a variety of sources to answer my clinical question.	4.21	4.64	0.43	9.23%
I feel confident in my abilities to critically appraise the evidence I have found to answer my clinical question.	3.57	4.79	1.21	25.37%
I feel confident in my abilities to apply the new research I have found to patient care.	4	4.79	0.79	16.42%

Chart 2: Individual Survey Question Data

Conclusions

Utilization of laboratory scenarios in a PTA neurology course improved the students' perceptions of EBP in all categories surveyed. As an added outcome measure, data suggested that the activity improved the students' abilities to practice EBP within the laboratory setting, on model patients. While these data cannot be generalized to a larger population, they do give strong suggestion that this type of activity has as very positive effect on PTA students in EBP perception and possibly clinical practice. They also strongly suggest further research is warranted.

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