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Background/Significance

- Evidence-based practice (EBP) refers to the integration of the best clinically relevant research with clinical expertise and patient values
- Evidence for the growing emphasis of EBP in physical therapy is provided by:
 - ✓ APTA research agenda
 - ✓ Designation of EBP as one of the 5 key areas for achieving autonomous practice
 - ✓ Development of Hooked on Evidence
 - ✓ Development of Physiotherapy Evidence Database (PEDro)
 - ✓ Inclusion in the CAPTE Evaluative Criteria
- It is critical that entry-level DPT programs foster the development of EBP skills in students
- A number of studies have evaluated different educational strategies and practices for teaching EBP to practicing physicians and occupational therapists, but there are no studies describing the outcomes of similar training for DPT students

Purpose

Evaluate changes in: (1) DPT students' knowledge and skills of EBP, as measured by the Adapted Fresno Test of Competence in Evidence-Based Practice (AFT) and (2) self-confidence in EBP skills, after instruction in the elements of EBP in a 2 credit course - *Scientific Inquiry 1* (SI1)

Subjects

- 30 first-year DPT students volunteered
- Written consent; no compensation
- UNE Institutional Review Board for the Protection of Human Subjects reviewed the protocol and determined that it was exempt

Methods and Materials

Outcome Measures

- AFT Version 3 used to measure knowledge of EBP
- 7 open-ended questions to 2 clinical scenarios

Clinical Scenario 1
You have been asked to see a 70-year-old woman with painful osteoarthritis in both knees that is affecting her mobility both within and outside of her home. In addition to recommending home modifications, you feel that she may benefit from an exercise program. However attending a clinic may be a problem for her. You have heard that a home based program may be just as effective.

Clinical Scenario 2
A client of yours has been recently diagnosed with carpal tunnel syndrome. Her treating doctor has recommended surgery but she is not keen on having the operation. She has heard that wearing splints may help her symptoms and help her to resume work more quickly. She asks you for your opinion.

Question 1: Write a focused clinical question for ONE of the above scenarios, which will help you to organize a search of the clinical literature.

Question 2: Where might you find answers to these and other similar clinical questions? Name as many possible sources of information as you can – not just the ones you think are “good” sources. Describe the advantages and disadvantages of each type of information source you have listed.

Question 3: What type of study (design) would best answer your clinical question (see Question 1) and why?

Question 4: If you were to search Medline for original research to answer your clinical question, describe the search strategy you might use. Be as specific as you can about which topics and search categories (fields) you would use. Explain your rationale for taking this approach. Describe how you might limit your search if necessary and explain your reasoning.

Question 5: When you find a report of original research on this question or any others, what characteristics of the study will you consider, to determine if it is relevant? Questions 6 and 7 will ask you how to determine if the study is valid and how important the findings are. For this question, please focus on how to determine if it is really relevant to your practice.

Question 6: When you find a report of original research related to your clinical question or any others, what characteristics of the study will you consider to determine if its findings are valid? (You've already addressed relevance, and Question 7 will ask how to determine the importance of findings. For this question, please focus on the validity of the study).

Question 7: When you find a report of original research which relates to your clinical question or any others, what characteristics of the findings will you consider to determine their magnitude and significance (clinical and statistical)?

- EBP Self-Confidence Questionnaire
- 5 questions
- Researcher designed
- 1 -5 Likert scale

Instruction in EBP in SI1

2 credit course

24 of 30 class hours devoted to EBP:

- write a P-I-C-O clinical question
- develop effective strategies to search electronic databases

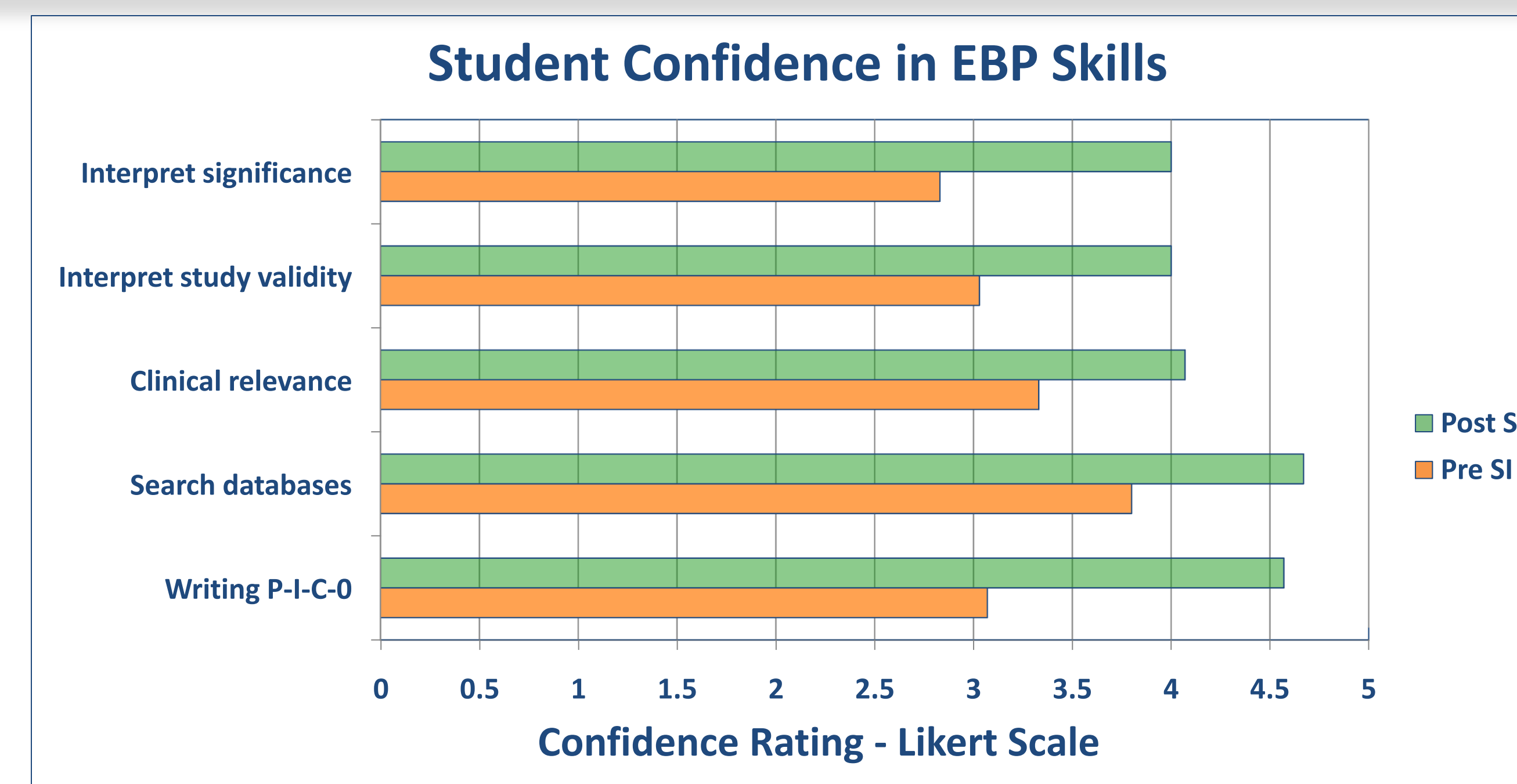


- interpret: RCTs, meta analyses, diagnostic/screening tests, case report
- evaluate statistical significance and clinical importance of treatment effects

Results

Analysis

- One group pre-test/post-test design
- Scoring of AFT by blinded investigator
- Adapted Fresno Test:
 - Repeated measures analysis of variance
 - 1 grouping variable (clinical scenario)
 - 1 within-subjects variable (time)
- EBP Self-Confidence Questionnaire:
 - Paired t test



AFT Question (# points)	Pretest Mean (SD)	Posttest Mean (SD)	Mean Difference (95% CI)
Q1 Writing P-I-C-O question (12)	5.7 (1.8)	6.0 (1.6)	0.37 (-.62 to 1.4)
Q2 Identifying sources (24)	11.5 (5.4)	7.1 (6.2)	-4.4 (-7.1 to -1.7)
Q3 Study Design (24)	3.9 (4.7)	10.9 (5.5)	7.0 (4.7 to 9.2)
Q4 Medline search (24)	7.7 (5.3)	16.5 (3.4)	8.8 (6.9 to 10.7)
Q5 Clinical relevance of study (24)	4.3 (5.2)	6.8 (4.5)	2.5 (0.7 to 4.9)
Q6 Validity of study results (24)	6.8 (5.2)	10.9 (7.1)	4.1 (1.1 to 7.1)
Q7 Magnitude/significance (24)	2.4 (3.3)	8.2 (4.2)	5.8 (3.5 to 8.0)
Total score (0-156)	42.2 (15.1)	66.4 (17.4)	24.2 (16.1 to 32.3)

Results

AFT Outcome

- Q2 Statistically significant decrease (Table)
AFT grading rubric rewards quantity and variety of sources more than quality
- Q3 to Q7 Statistically significant increase (Table)
- No statistically significant difference between the 2 clinical scenarios for any individual question or the total score
- The interaction of time and scenario was significant for Q5 and total score. In both instances, students answering about the patient with carpal tunnel syndrome improved their score more than students answering about the patient with knee osteoarthritis
- Confidence Questionnaire Outcome**
 - Statistically significant increase in students' self-confidence in all 5 EBP skills assessed (Figure)

Conclusion

- This is the first study to use the AFT to evaluate changes in DPT students' knowledge and skills related to EBP after formal instruction
- The observed 24 point increase in the mean total score is educationally important and comparable to the change in AFT scores reported in a study of occupational therapists (McCluskey)
- The AFT is a useful instrument to help educators assess the impact of their teaching and learning activities on students' EBP skills
- The results of the study will be used in the ongoing evaluation of teaching EBP, an essential element of curriculum review in physical therapy education.