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Osteoporosis Knowledge in Licensed Physical Therapists and First-Year Doctor of Physical Therapy Students: A Gap in Physical Therapy Education?



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Background

- A **lack of osteoporosis knowledge** has been found in a variety of healthcare providers
- No previous studies have evaluated osteoporosis knowledge between physical therapists and first-year doctor of physical therapy students

Purpose

- To **assess the knowledge of participants** in the course "Innovative Strategies for Preserving Bone Health: A Closer Look at Osteoporosis Management Across the Lifespan"

Methods

- **21 participants:**
 - 11 licensed physical therapists with an average of 19 years of clinical experience
 - 10 first year Doctor of Physical Therapy students
- **Outcomes** were evaluated using statistical analysis from data collected in:
 - demographic questionnaire
 - pre/post course test
 - course evaluation survey
- **Inferential Statistics:**
 - Wilcoxon Signed-Rank Test used to determine differences between pre- and post-course test scores for all learners
 - Mann Whitney U Test used to compare test scores between physical therapists and student physical therapists

Intervention

- Attendance at a **two day, 12.5 hours continuing education course**
- Exercise management taught (Figure 1)



Figure 1: Example of safe exercise to increase erector spinae strength: Prone Thoracic Extension

Results

Statistics of 11 Physical Therapists

Statistic	Pre test (%)	Post test (%)
Mean	51.8	88.1
Median	55	85
Standard Deviation	12.7	7.8
Minimum	30	75
Maximum	75	100

Statistics of 10 Physical Therapy Students

Statistic	Pre test (%)	Post test (%)
Mean	56.5	82.5
Median	57.5	85
Standard Deviation	8.5	9.5
Minimum	40	60
Maximum	70	90

- Difference between median scores was statistically significant ($Z(26) = -4.468, p < 0.0001$), indicating that a **learning effect occurred** as a result of course instruction
- **No statistical difference** between the knowledge of the therapists and students at the pre-course test ($U(21) = 38.00, p = 0.251$) or post-course test ($U(21) = 39.50, p = 0.282$)

Clinical Relevance

- Physical activity is critical in preventing osteoporosis, reducing falls and thereby reducing the risk of fragility fractures
- Exercise has been shown to be a safe and effective way to increase bone mineral density and reduce the chance of fractures in postmenopausal women
- Patient education and exercise for managing osteoporosis is a recognized and much needed intervention that should be provided by physical therapists. However, many **physical therapists may lack knowledge** to properly screen associated risks, educate patients about fall prevention, and develop appropriate exercise programs that minimize the risk of fractures while combating the damaging postural changes associated with osteoporosis
- **Future studies** should focus on how osteoporosis education can be improved, and if changes in knowledge would translate into changes in physical therapist's practice management

Conclusions

- The improved mean from the pre-course test to the post-course test demonstrates that a **learning effect occurred**.
- The lack of statistical difference between seasoned physical therapy clinicians and first-year DPT students indicates that there may be a **gap in osteoporosis education among physical therapists**.
- More research should be done to determine where this gap occurs in the education process and how it can be improved.

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