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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

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

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 ($U(21) = 39.50, p = 0.282$)

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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