THE APPLICATION OF FLIPPED CLASSROOM IN PEDIATRIC PHYSICAL THERAPY

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Background: Flipped classroom is a novel pedagogical approach that promotes active learning in many fields of medical education. However, little is known about how to implement flipped classroom learning in pediatric physical therapy.

Purpose: The paper reports the design, implementation, and evaluation of flipped classroom in pediatric physical therapy.

Methods: Motor facilitation videos were uploaded to Youtube. The students were required to watch the videos and comment on-line before the class. The teacher designed classroom activities based on the student comments and key points of the topic. During the class, the students participated in classroom activities and demonstrated what they learned from Youtube videos. The students observed the clinical skills of their peers and point out what needs to be refined in terms of the facilitation skills. The teacher answered the on-line comments and provided feedback for the demonstration of the students. Clinical skill examination and questionnaire were used to evaluate the outcome of the innovative pedagogy.

Results: The final examination scores (78.96 ± 12.03) of the clinical skills were significantly higher than the midterm scores (70.24 ± 11.80). The students indicated watching motor facilitation video on Youtube was helpful to their learning because they can watch the videos before and after the class for many times. They practiced the facilitation skills with their peers before the class. Their skills were refined during the class with commend of the teacher and peers. They also felt more confident for the performance in the final examination.

Conclusion(s): Flipped classroom pedagogy can effectively promote the learning outcome in Pediatric Physical Therapy. The students achieved better scores with more active and positive learning experiences.

Implications: Flipped classroom pedagogy is feasible in the teaching of pediatric physical therapy.

Keywords: Flipped classroom; Pediatric physical therapy; Clinical skills

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Ethics approval: This is a review and record of regular classroom teaching. Ethics approval is not available.

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ASSOCIATION BETWEEN HAND GRIP STRENGTH, AGE, BODY MASS INDEX, YEARS SINCE MENOPAUSE AND FRACTURE RISK FRAX MODEL IN HEALTHY ADULTS

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Background: One of major concern of elderly is osteoporosis. In Malaysia, diagnosis and management of osteoporosis is at a fairly low rate due to multiple constrains. Used of dual-energy X-ray absorptiometry (DEXA) in predicting risk of fracture are costly, mainly for research and available in urban area. Moreover, several clinical risk factors had observed better discriminate ability than bone mineral density (BMD) alone in identifying fracture risk in adults. Thus, early detection and management of those with risk osteoporotic-related fracture potentially improve quality of life, reduced health care cost and individual burden.

Purpose: To assess the relationship between hand grip strength(HGS), age, body mass index, years since menopause and osteoporotic fracture risk by the FRAX® model without BMD in Sekinchan, Subang Permai, Meru, and Sungai Udang, Selangor, Malaysia.

Methods: A hundred of community dwelling adults volunteered to participate in this study. The participants aged 40 years old and above (mean 58 ± 8.7 years) were recruited from the Malay community based centers through health screening program. A cross-sectional study used health screening questionnaire comprised of demographic data: age, sex, body mass index and other factors including medical history, personal history of fracture, parental history of hip fracture, current smoking, glucocorticoid use, rheumatoid arthritis, alcohol intake and secondary osteoporosis. History of fall, physical activity weekly and year since menopausal were also assessed. Hand held dynamometer was used as clinical examination for HGS. Descriptive statistics were used to calculate the prevalence of osteoporotic fracture risk. The association between age, body weight, height, BMI, HGS, YSM, 10-year probability of osteoporotic fracture risk was investigated using Pearson's correlation coefficient.

Results: In FRAX Model without BMD, the prevalence of low risk of major osteoporotic fracture was 96% and remainder was moderate fracture. In post menopausal women, the mean of years since menopause was 10 ± 7.9 years, years since menopause was positively correlation with the predicted 10-year fracture probability (r = 0.62, p = 0.00). Both HGS and BMI (r = -0.22, r = -0.23, respectively) were neg-