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Association of Hamstring Flexibility on Spinal Mobility and Health Related Quality of Life among Female Obese Undergraduates of Allied Health Sciences in General Sir John Kotelawala Defence University

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Abstract

Due to the fact of spending high seated time of undergraduates, there will be an increasing obesity risk and low health related quality of life. The objective of the current study was to assess the effect of hamstring flexibility on spinal mobility and health related quality of life (HRQOL) among obese female undergraduates of Faculty of Allied Health Sciences (FAHS) in Kotelawala Defence University (KDU). A descriptive cross sectional case-controlled study was conducted with 100 female participants (50 obese and 50 normal Body Mass Index (BMI)) aged between 18-40 years at FAHS, KDU. Hamstring flexibility, lumbar spinal flexion, both lumbar spinal extension and lateral flexion, HRQOL were measured by sit and reach test, Schober's test (tape measurements), standard goniometer and SF-36 questionnaire respectively. Prevalence of obesity was 18.3%. The mean BMI (kgm^{-2}) of the case was (27.9 $\pm$ 2.9) and control groups was (21.0 $\pm$ 1.4). Mean age (years) of case and control groups were (23.5 $\pm$ 4.2) and (23.3$\pm$3.5) respectively. Spinal mobility and hamstring flexibility did not show any significant difference between two groups (p>0.05). Hamstring muscle flexibility did not show any significant difference between two groups (p=0.42) and it was associated with right lumbar lateral flexion in the obese BMI group (p=0.04, r=0.03) and both left (p<0.05, r=0.43) and right (p < 0.05, r=0.41) lateral flexion in normal BMI group. Obese BMI group showed a significant association only for the SF 4 (p=0.02) and SF 8 (p=0.01) questions. The lumbar spinal mobility did not differ in the obese group compared to the normal BMI group. In both groups, lateral flexion has shown an association with hamstring flexibility. In the obese group, hamstring flexibility showed a significant (p<0.05), yet weak positive (r <$\pm$ 0.4), association with left side lumbar lateral flexion.

Keywords: *Spinal mobility, Obesity, Hamstring flexibility, Health related quality of life*