

Association between the Sleep Quality and Physical Fitness of Undergraduates of the University of Colombo, Sri Lanka

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Sleep and physical fitness are important for undergraduates' performance and daily activity. However, these associations were not assessed adequately in the Sri Lankan context. The objective of the study was to determine the association between sleep quality and physical fitness of undergraduates of the University of Colombo, Sri Lanka. A cross-sectional study was conducted among undergraduates (n=150) of the University of Colombo recruited by random sampling. Their sleep quality was assessed using Munich Chronotype Questionnaire and physical fitness was evaluated using standard fitness tests. Data analysis was done using SPSS version 22.0 and $P < 0.05$ was considered significant. Out of 150 participants, 60% were females with a mean \pm SD of age of 22.76 ± 0.99 years. Their mean \pm SD sleep duration was 6.33 ± 1.26 hours, and sleep onset latency was 17.8 ± 27.46 min. On regular days, a majority (65.3%, n=98) had a normal sleep onset latency and a poor sleep duration (80.7%, n=121). Despite poor sleep duration, the majority (82.7%, n=124) showed normal sleep efficiency. These parameters had no significant difference between males and females ($P > 0.05$). In univariate analysis, undergraduates with normal sleep duration showed significantly better cardiovascular endurance (483.24 ± 53.69 sec vs 561.78 ± 19.69 sec), muscular endurance (45.93 ± 1.69 sec vs 41.49 ± 8.03 sec), and muscular strength (20.17 ± 1.75 vs 15.99 ± 3.80) than those who have abnormal sleep duration ($P < 0.05$). Further, those with normal sleep efficiency showed better cardiovascular endurance (536.14 ± 53.18 sec vs 596.46 ± 54.77 sec) than those with poor sleep efficiency ($P < 0.05$). The logistic regression analysis showed that sleep duration was associated with muscular strength (OR=1.29; 95% CI 1.03-1.60) and cardiovascular endurance (OR= 0.95; 95% CI 0.93 to 0.97). In conclusion, sleep deprivation is a concern among undergraduates which showed a significant association with their physical fitness thus, affecting their daily lives.

Keywords: *sleep quality, physical activity, physical fitness, undergraduates*