Relationship between physical activity, Body Mass Index (BMI) and lipid profile of students in Ghana

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Objective
In Ghana, there is no data regarding physical activity habits and lipid profiles of students. Therefore, the aim of this study was to investigate the relationship between physical activities, Body Mass Index (BMI) and lipid profile of students in Ghana.

Method
Cluster and systematic sampling techniques were employed to recruit 120 students, aged 18 years and above. This cross-sectional study was carried out among students from the University of Ghana. Biochemical analysis was conducted analysing total cholesterol (TC), high-density lipoprotein (HDL), low density lipoprotein (LDL) and triglycerides (TG) in serum samples. Anthropometry measurements were also taken and BMI calculated. The physical activities, undertaken over a 7-day period, by the students were assessed using the International Physical Activity Questionnaire (IPAQ).

Results
31.7% and 21.7% of the students were overweight and obese respectively. 61.5% of the obese students were engaged in high-level physical activity as compared to 45.5% and 36.8% of the normal and overweight students, respectively. Normal weight students and overweight students showed significant differences in means of TC; [(4.56 ± 0.930 mmol/L) and (5.06 ± 0.93 mmol/L), respectively] and also between normal weight group (4.54 ± 0.93 mmol/L) and the obese students (5.24 ± 1.18 mmol/L). Significant correlations were also observed between TG, TC and BMI; and TC and TG, HDL and a strong correlation between LDL and TC (r=0.967).

Conclusion
There were strong correlations between BMI, physical activity and lipid profile indices among students in Ghana. Comprehensive efforts should be applied to reduce the incidence of CVDs among students.