

B40 Relationship between chronotype and chrononutrition profile with weight status of schoolchildren during the COVID- 19 pandemic

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Chronobiology suggests that later chronotype (higher eveningness) and suboptimal time-related eating patterns are associated with overweight and obesity besides the diet content. This study determines the relationship between chronotype and chrononutrition with weight status of children. Online cross-sectional study was conducted whereby questionnaires to assess the chronotype (Morningness and Eveningness Scale for Children (MESc)), chrononutrition and weight status were administered. Majority children were 11-year-old Malay girls from low household income group. In a week, the lower the MESc score of children (reflecting higher eveningness), the higher the breakfast skipping ($r=-0.325$, $p<0.001$), lunch skipping ($r=-0.166$, $p=0.024$), snacking after last meal ($r=-0.158$, $p=0.032$) and night eating ($r=-0.190$, $p=0.010$) frequency. On both school day (SchD) and free day (FreeD), the lower MESc score was also correlated negatively with later first eating event (SchD, $r=-0.204$, $p=0.005$; FreeD, $r=-0.304$, $p<0.001$), breakfast time (SchD, $r=-0.168$, $p=0.025$; FreeD, $r=-0.256$, $p=0.001$), dinner time (SchD, $r=-0.202$, $p=0.006$; FreeD, $r=-0.229$, $p=0.002$), last eating event (SchD, $r=-0.204$, $p=0.005$; FreeD, $r=-0.216$, $p=0.003$) and longer evening latency (SchD, $r=-0.227$, $p=0.002$; FreeD, $r=-0.196$, $p=0.008$). Besides, 61.8% of evening type children had dinner or snack as their largest meals on both SchD ($p=0.02$) and FreeD ($p=0.009$). Only on FreeD, lower MESc score was negatively correlated with the later lunch time (FreeD, $r=-0.246$, $p=0.001$). Higher BMI for age z-score correlated positively with timings of first eating event ($r=0.155$, $p=0.035$), breakfast ($r=0.165$, $p=0.027$) on SchD and snacking frequency after last meal in a week ($r=0.154$, $p=0.037$). In conclusion, the chronotype has significant relationship with chrononutrition profile but not weight status of the children. Nevertheless, significant relationship between chrononutrition profile and weight status were observed. This concludes the importance of regular sleep wake pattern and proper mealtime pattern among schoolchildren which could be considered as an approach to tackle childhood obesity in Malaysia.