

Sleep, Diet, and Physical Activity during COVID-19: Practitioners Should Be Aware of Considerable Individual Differences

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ABSTRACT

*Moderate-to-vigorous physical activity (MVPA) for prolonged periods of time is related to cardiorespiratory fitness (CRF). Sleep quality (SQ) can be operationally defined from components, such as sleep efficiency and sleep-onset latency. Diet is operationally defined as the quantity and quality of nutrient intake. CRF, SQ, and diet are related to all-cause mortality. During the COVID-19 health crisis, non-pharmaceutical interventions (curfews, stay-at-home orders) disrupted people's lifestyles, including sleep, diet, and physical activity (PA). **PURPOSE:** To analyze MVPA, diet, and SQ trends over time and variations in changes over time during COVID-19. **METHODS:** PA (in mins/week), diet (via REAP-S), and SQ (via PSQI) scores were collected every four weeks for a year from the sample ($n = 134$; $M_{age} = 37.7$, $SD = 15.7$; females = 103, 76.9%). We used a structural equation modeling framework to estimate growth models for each of the three variables. As such, the growth parameters were treated as latent variables. First, we examined the proportion of variability in the three sets of variables due to between-individual differences via the intraclass correlation coefficient (ICC). Next, we estimated the growth parameters for each outcome variable. **RESULTS:** On average, PA, nutrition, and SQ did not change appreciably over the course of the year; however, there were between-individual differences. For MVPA, SQ, and nutrition, about 35%, 68%, and 61% of the variability (ICC) were, respectively, attributable to differences between individuals. PA was standardized prior to fitting the growth model so the estimate of the intercept was expected to be very near zero. The random intercept effect shows that the person-specific intercepts varied by about 0.5 standard deviations from the overall mean. Similar growth patterns were observed for SQ ($M_{baseline} = 6.7$; $SD = 8.4$) and nutrition ($M_{baseline} = 31.1$; $SD = 7.4$). **CONCLUSION:** Our findings indicate considerable variability in initial status and have practical implications: during this ongoing crisis, practitioners should be probably expecting substantial individual differences but not changes over time in terms of diet, PA, and sleep habits.*