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DIGITAL TRACKERS SHOW THAT HIGH INTENSITY EXERCISING AND CONSISTENT SLEEP

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Objectives: Behavioral data (e.g., steps and sleep patterns) from activity trackers can provide valuable insights into an individual's overall health and wellness. However, the relationship between behavioral characteristics and perceived health and quality of life (QoL) in the general population has not been quantified. In this analysis, we examined the association between behavioral traits inferred from passive trackers and self-reported overall health, physical health, mental health and QoL.

Methods: Members of an online health community were invited to participate in a survey that included ratings of perceived overall health status, physical health, mental health and QoL on a 5-point Likert scale, as well as characteristics such as age and gender. We used their activity information recorded from health trackers and apps over the past five months to compute per-patient daily mean and standard deviation of step and sleep metrics such as step count, sleep duration, maximum steps taken in a continuous 30-minute interval per day, and sleep efficiency. Weight was also collected from connected scales. For 7,261 individuals, we used the various computed behavioral characteristics as explanatory variables in standard regression models to predict perceived overall health, physical health, mental health and QoL while controlling for age and gender.

Results: On average, the study population took 10,588 steps per day and slept 6.6 hours per night. Weight was negatively associated with perceived overall health status, physical health and QoL. High intensity exercise and consistent sleep length had statistically significant associations with positive perception of overall health, physical health, and mental health and high self-reported QoL.

Conclusions: Our results indicate that individuals who frequently engage in rigorous exercising and sleep a consistent amount nightly also have positive perceptions of their health, wellness and QoL. Further research should be conducted to determine if these relationships hold true among disease-specific populations.