Prolonged smartphone usage is prevalent among young adults in Lima, Peru, with potential implications for musculoskeletal health. This study investigates muscle fatigue in university students aged 18 to 24, focusing on the upper trapezius and wrist flexor muscles. Utilizing electromyography (EMG), participants engaged in smartphone activities in various positions. Results highlight significant muscle fatigue associated with specific postures and tasks. Our findings underscore the need for preventive measures and ergonomic interventions to mitigate the impact of extensive smartphone use on the musculoskeletal health of young adults.