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The Role of Digital and Wearable based Exercise Programme in Weight Management and Cardiorespiratory Fitness in College Students: A Narrative Review

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ABSTRACT

Significant health hazards, such as decreased cardiovascular fitness and increased metabolic disorders, are associated with the rising overweight and obesity among college students. The use of wearable and digital technology to encourage physical activity and enhance health outcomes in young adults presents a promising path as these tools become more and more popular in fitness and health management. In order to help overweight college students maintain their weight and improve their cardiovascular fitness, this study investigates the potential of wearable and digital workout regimens. Physical activity, heart rate, calorie expenditure, and sleep habits may all be tracked in real time with digital platforms and wearable technology like fitness trackers, smart watches, and smartphone apps. According to research, these kinds of treatments may greatly improve adherence to physical activity recommendations, which leads to quantifiable gains in cardiorespiratory endurance and body composition. Using MeSH phrases such as “cardiorespiratory fitness,” “overweight,” “wearable electronic devices,”“fitness trackers,” and “young adults,” a thorough search was conducted throughout databases like as PubMed, PEDro, Google Scholar, Ovid, and others. According to the inclusion and exclusion criteria, articles published within the previous five years were included. In this we found that anthropometric measurements have been significantly impacted by the incorporation of structured exercise regimens, such as resistance training, High-intensity Interval Training (HIIT), and aerobic training, through digital platforms. In addition to improved fat oxidation and the retention of lean muscle, studies show decline in body weight, Body Mass Index (BMI), and waist circumference. Several devices like Xiaomi 8 smart watches, Myworkout GO, Fitbit charge 5, Apple watch series 8 have shown good results. Additionally, gains in cardiovascular fitness, as demonstrated by elevated VO2 max and decreased resting heart rate, demonstrate how well wearable-based therapies support cardiovascular health. The potential of wearable and digital exercise regimens as efficient, scalable, and user-centered approaches to college students' weight management and cardiovascular health is highlighted by this review. These initiatives can enable young individuals to create long-lasting habits for a healthier future by fusing technology with conventional health promotion initiatives.

Keywords: Cardiorespiratory fitness, Fitness trackers, Overweight, Wearable electronic devices, Young adults.