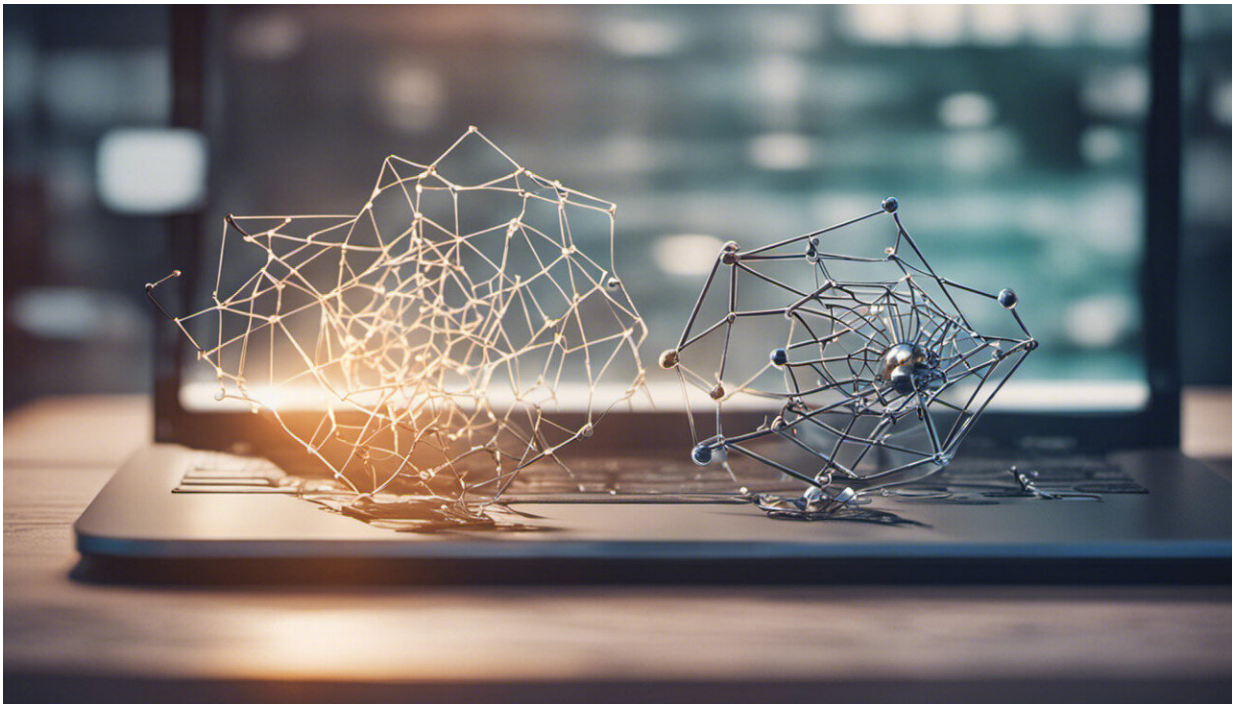# Web-based applications can help people lose weight, study finds

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Credit: AI-generated image (disclaimer)

Being obese and overweight can cause serious chronic diseases, which include type 2 diabetes mellitus, cardiovascular disease, hypertension, sleep apnea, osteoarthritis, and certain types of cancer. It has been proven that conventional weight-loss interventions that involve behavioral changes and lifestyle modifications are effective, and recently

there has been an upsurge of modern internet-based weight-loss interventions.

Using fitness-related technologies, such as wearable devices and smartphone applications, has been shown to boost physical activity. However, the impact of using such interventions and which of their components are most effective have yet to be studied and established. This study, carried out by a group from the University of Tsukuba and published recently in *Nutrients*, analyzed the effectiveness of using web-based applications in implementing and promoting weight loss in people with obesity.

To examine the said effectiveness of web-based applications, researchers performed a systematic review wherein 1,466 articles from two medical publication databases were retrieved and carefully selected. Each study was reviewed for its quality of evidence based on the risk of bias; 97 articles were analyzed qualitatively, and 51 articles were analyzed quantitatively.

Qualitative analysis showed that studies that used components such as social support, self-monitoring for behavior and outcome (weight), behavioral goal setting, information on health consequences, and outcome goal setting were significantly effective in weight loss. "Our study showed that the use of web-based intervention in people with overweight and obesity have a positive and significant effect on weight loss," states Professor Yoshio Nakata. "However, our data also suggested a trend toward a decreasing effectiveness for long-term web-based interventions."

Quantitative results also showed the efficacy of using web-based interventions, such as personalized information to tailor the needs of the user and e-counseling, which may be due to the advent and progress of smartphone technology and availability of web-based counseling.

However, certain components of web-based interventions, namely online chats, were shown to be ineffective, highlighting the need for such assessments of efficacy.

This study analyzed different components of web-based interventions on weight loss in overweight and obese people and identified key components and characteristics of said interventions that aided in their efficacy. With growing global concern regarding obesity and a steady increase in the number of people gaining access to the internet and using web-based health interventions this study sets the groundwork for analysis on the effectiveness of these interventional measures and provides data that can help in the design of these applications.

More information: Yutong Shi et al, Effectiveness and Components of Web-Based Interventions on Weight Changes in Adults Who Were Overweight and Obese: A Systematic Review with Meta-Analyses, *Nutrients* (2023). DOI: 10.3390/nu15010179

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