

## ABSTRACT

Obesity is a condition that leads to increased health problems associated with metabolic disorders. Synthetic drugs are available for obesity treatment, but some of these compounds have demonstrated considerable side effects that limit their use. Polyphenols are vital phytonutrients of plant origin that can be incorporated as functional food ingredients. This review presents recent developments in dietary polyphenols as anti-obesity agents. Evidence supporting the potential application of food-derived polyphenols as agents against obesity has been summarized. Literature evidence supports the effectiveness of plant polyphenols against obesity. The anti-obesity mechanisms of polyphenols have been explained by their potential to inhibit obesity-related digestive enzymes, modulate neurohormones/peptides involved in food intake, and their ability to improve the growth of beneficial gut microbes while inhibiting the proliferation of pathogenic ones. Metabolism of polyphenols by gut microbes produces different metabolites with enhanced biological properties. Thus, research demonstrates that dietary polyphenols can offer a novel path to developing functional foods for treating obesity. Upcoming investigations need to explore novel techniques, such as nanocarriers, to improve the content of polyphenols in foods and their delivery and bioavailability at the target sites in the body.