

INTISARI

Latar Belakang: Sekresi Nesfatin-1 secara sentral dan perifer dapat mempengaruhi banyak fungsi yang memberi dampak pada sistem saraf, sistem pencernaan, respon stres dan termogenesis. Fungsi fisiologis Nesfatin-1 didefinisikan pertama adalah pengurangan asupan makanan yang telah diamati pada efek anoreksigenik yang dapat menyebabkan penurunan timbunan lemak tubuh dan berat badan. Dalam kasus kronis perubahan berat badan, seperti obesitas maka kadar plasma Nesfatin-1 juga akan bervariasi. Intervensi aktifitas/latihan fisik dapat mempengaruhi regulasi nafsu makan dan peningkatan pengeluaran energi sehingga berdampak pada penurunan berat badan.

Tujuan: Untuk mengetahui faktor-faktor yang mempengaruhi efek intervensi dari aktifitas atau latihan fisik kronis terhadap kadar Nesfatin-1.

Metode: Penelitian ini merupakan tinjauan sistematis dengan mengikuti pedoman yang telah ditetapkan oleh *Preferred Reporting Items for Systematic Reviews and Meta-Analyses* (PRISMA) dan protokol penelitian sistematis ini sudah teregistrasi di database Internasional *Prospective Register Systematic Review* atau yang lebih dikenal sebagai PROSPERO. Pencarian dilakukan pada empat database dan dua registrasi yaitu Pubmed, Scopus, Embase via Cochrane, Clinicaltrials.gov via Cochrane dan WHOITCRP via Cochrane. Kriteria inklusi penelitian adalah sampel dewasa, Intervensi latihan *resistance*, *endurance* dan *combined* dengan *control sedentary* yang dilakukan dalam beberapa sesi dengan pengawasan. Pemeriksaan kadar serum / plasma Nesfatin-1 dengan menggunakan ELISA kits.

Hasil: Meta-analisis 12 studi penelitian yaitu 10 studi penelitian *Randomized Controlled Trials (RCTs)* dan 2 studi penelitian *Quasi-Experimental Trials* dengan jumlah partisipan sebanyak 334 partisipan (kelompok intervensi sebanyak 208 dan kontrol sebanyak 126). Kualitas bukti *moderate* pada intervensi latihan resisten partisipan sehat dan kualitas bukti *low* pada intervensi latihan aerobik *moderate-vigorous intensity*, resisten pada partisipan wanita sakit metabolik (diabetes melitus) dan latihan kombinasi murni.

Kesimpulan: Tinjauan sistematis ini menunjukkan bahwa intervensi latihan resisten pada partisipan wanita sehat obesitas / overweight dapat meningkatkan kadar Nesfatin-1 dengan kualitas bukti *moderate*.

Kata Kunci: Nesfatin-1, latihan fisik kronis, *overweight*, obesitas

ABSTRACT

Background: *Nesfatin-1 secretion centrally and peripherally can affect many functions that affect the nervous system, digestive system, stress response and thermogenesis. The physiological function of Nesfatin-1 is defined first as a reduction in food intake which has been observed to have anorexigenic effects that can lead to a reduction in body fat deposits and body weight. In cases of chronic weight changes, such as obesity, plasma levels of Nesfatin-1 will also vary. Physical activity/exercise interventions can affect appetite regulation and increase energy expenditure so that it has an impact on weight loss.*

Objective: *To determine the factors that influence the effect of physical activity intervention or chronic exercise on Nesfatin-1 levels.*

Methods: *This study was a systematic review following the guidelines established by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) and the protocol for this systematic study has been registered in the International Prospective Register Systematic Review database or better known as PROSPERO. Search completed. on four databases and two registrations namely Pubmed, Scopus, Embase via Cochrane, Clinicaltrials.gov via Cochrane and WHOITCRP via Cochrane. The inclusion criteria of the study were adult sample, resistance, endurance and combination training intervention with sedentary control conducted in several sessions under supervision. Examination of serum / plasma levels of Nesfatin-1 using the ELISA kits.*

Results: *Meta-analysis of 12 research studies, 10 Randomized Controlled Trials (RCTs) and 2 Quasi-Experimental Trials with a total of 334 participants (208 intervention groups and 126 controls). Moderate quality of evidence on resistance exercise intervention in healthy participants and low quality of evidence on moderate-vigorous intensity aerobic exercise intervention, resistance in female participants with metabolic disease (diabetes mellitus) and pure combination exercise.*

Conclusion: *This systematic review showed that resistance exercise intervention in obese / overweight healthy female participants could increase Nesfatin-1 levels with moderate quality of evidence.*

Keywords: *Nesfatin-1, chronic physical exercise, overweight, obesity*