ABSTRAK

POLA PENINGKATAN KADAR IRISIN AKIBAT *MODERATE INTENSITY INTERVAL* DAN *CONTINUOUS EXERCISE* PADA REMAJA PEREMPUAN OBESITAS

Pendahuluan: Tingkat prevalensi obesitas sudah sangat mengkhawatirkan baik di negara maju maupun negara berkembang dan menjadi ancaman yang sangat serius terhadap kesehatan masyarakat. Gaya hidup, pola makan yang tidak sehat dan kurangnya aktivitas fisik menjadi pemicu terjadinya obesitas. Oleh karena itu, modifikasi gaya hidup dengan pendekatan nonfarmakologis berbasis *exercise* merupakan strategi yang tepat.

Tujuan: Penelitian ini bertujuan untuk menganalisis pola peningkatan kadar irisin akibat *moderate intensity interval exercise* (MIIE) dan *moderate intensity continuous exercise* (MICE) pada remaja perempuan obesitas.

Metode: Penelitian ini menggunakan metode penelitian *true experiment*, dengan rancangan penelitian *Basic Time Series Design* dengan menggunakan subjek 18 remaja perempuan obesitas dan secara random dibagi menjadi 3 kelompok, yaitu A (n=6, kontrol tanpa intervensi), B (n=6, *moderate intensity interval exercise*) dan C (n=6, *moderate intensity continuous exercise*). Intervensi dilakukan pada pukul 07.00 – 09.00 WIB. Intervensi MIIE dilakukan selama 45 menit, sedangkan MICE dilakukan selama 40 menit. Pengambilan sampel darah dilakukan sebelum intervensi dan 10 menit, 6 jam, 24 jam pasca intervensi. Pengukuran kadar irisin menggunakan metode ELISA. Teknik analisis data menggunakan uji ANOVA dan LSD *post hoc test* dengan *Statistic Package for Social Science* (SPSS).

Hasil: Terdapat perbedaan *trend* pola peningkatan kadar irisin pada A1 (3.260±1.283) ng/mL, A2 (2.996±0.863) ng/mL, A3 (3.038±0.602) ng/mL dan A4 (3.040±0.909) ng/mL. Pada B1 (3.395±0.596) ng/mL, B2 (4.714±1.059) ng/mL, B3 (4.617±0.943) ng/mL dan B4 (4.634±0.753) ng/mL. Pada C1 (4.287±1.229) ng/mL, C2 (5.933±1.379) ng/mL, C3 (5.521±0.929) ng/mL dan C4 (5.341±1.896) ng/mL.

Kesimpulan: MICE memiliki *trend* rata-rata peningkatan kadar irisin lebih tinggi dibandingkan dengan MIIE dan kontrol.

Kata kunci: *moderate intensity continuous exercise, moderate intensity interval exercise,* kadar irisin, remaja perempuan obesitas.

ABSTRACT

THE INCREASING PATTERN OF IRISIN LEVEL DUE TO MODERATE INTENSITY INTERVAL AND CONTINUOUS EXERCISE ON TEENAGE GIRL OBESITY

Introduction: The prevalence rate of obesity in developed and developing countries has become a serious threat to public health. A way of living, unhealthy eating habits and lack of physical activity cause obesity. Therefore, the change of lifestyle with non-pharmacological approach based on exercise is the right strategy.
Objective: This research is examining the increasing pattern of irisin due to moderate intensity interval exercise (MIIE) and moderate intensity continuous exercise (MICE) on teenage girl obesity.
Method: This research uses true experiment method, with basic time series research design by using 18 obese teenage girl and randomly divided into three groups. They are A (n=6 control without intervention), B (n=6, moderate intensity interval exercise) and C (n=6, moderate intensity continuous exercise). The intervention has done at 07.00-09.00. MIIE intervention has been done for 45 minutes, while MICE has done for 40 minutes. Blood sample were taken before intervention and 10 minutes, 6 hours, 24 hours after intervention. The measurement of irisin level uses ELISA method. The technique of data analysis uses ANOVA and LSD post hoc test with Statistic Package for Social Science (SPSS).
Result: there is different pattern trend in increasing levels on A1 (3.260 ± 1.283) ng/mL, A2 (2.996 ± 0.863) ng/mL, A3 (3.038 ± 0.602) ng/mL and A4 (3.040 ± 0.909) ng/mL. On B1 (3.395 ± 0.596) ng/mL, B2 (4.714 ± 1.059) ng/mL, B3 (4.617 ± 0.943) ng/mL and B4 (4.634 ± 0.753) ng/mL. On C1 (4.287 ± 1.229) ng/mL, C2 (5.933 ± 1.379) ng/mL, C3 (5.521 ± 0.929) ng/mL and C4 (5.341 ± 1.896) ng/mL.
Conclusion: MICE has an average trend of increasing irisin levels is higher than MIIE and controls.

Keywords: moderate intensity continuous exercise, moderate intensity interval exercise, irisin levels, teenage girl obesity