

# Analisis Faktor Risiko Terjadinya Sindroma Metabolik Pada Penerbang Sipil Laki-laki di Indonesia Dalam Masa Pandemi COVID-19: Sebuah Studi Kasus Kontrol = Risk Factors Analysis for the Occurrence of Metabolic Syndrome in Male Civil Aviator in Indonesia During the COVID-19 Pandemic - A Case Control Study

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## Abstrak

Latar belakang. Belum diketahui apakah ada hubungan antara usia penerbang, obesitas sentral, kebiasaan merokok, riwayat penyakit metabolik, dan jam terbang total dengan kejadian sindroma metabolik pada penerbang sipil pesawat sayap tetap.

Metode. Penelitian ini merupakan studi kasus kontrol, yang dilakukan pada bulan Desember 2022.

Penerbang sipil laki-laki pesawat sayap tetap yang menjalani pemeriksaan kesehatan di Balai Kesehatan Penerbangan pada periode Juni – November 2022 diinklusi dalam studi. Variabel bebas yang diteliti adalah jam terbang, usia, status obesitas, merokok, dan riwayat DM tipe II keluarga.

Hasil. Terdapat dua ratus enam puluh dua penerbang sipil pesawat sayap tetap yang diinklusi dalam studi ini, dengan 131 (50%) penerbang dengan sindrom metabolik dan 131 (50%) lainnya tidak memiliki sindrom metabolik. Rerata usia pasien dalam penelitian adalah  $38,70 \pm 10,54$  tahun, dengan 57,6% penerbang berusia 40 tahun. 59,2% subjek memiliki jam terbang 5000 jam, dengan median jam terbang keseluruhan subjek adalah sebesar 5600 (45–27700) jam. Sebagian besar subjek (64,5%) memiliki indeks massa tubuh (IMT) yang termasuk dalam kategori obesitas. Hanya usia > 40 tahun dan IMT  $\geq 25$  kg/m<sup>2</sup> yang ditemukan berhubungan dengan sindrom metabolik ( $p < 0,001$ ), dengan rasio odds masing-masing sebesar 5,90 (IK 95%, 2,79–12,45) dan 6,24 (IK 95%, 3,25–12,00). Setelah menghilangkan faktor usia, jam terbang 5000 jam memiliki risiko 3,33 (IK 95%, 1,87–5,94) kali lebih tinggi untuk mengalami sindrom metabolik.

Simpulan. Usia 40 tahun dan status obesitas berhubungan dengan peningkatan risiko sindrom metabolik di kalangan penerbang sipil pesawat sayap tetap laki-laki.

.....Background. It is not yet known whether there is a relationship between pilot age, central obesity, smoking habits, history of metabolic disease, and total flight hours with the incidence of metabolic syndrome in civil fixed-wing aircraft pilots.

Methods. This research is a case control study, which was conducted in December 2022. Male civil pilots of fixed wing aircraft who underwent medical examinations at the Balai Kesehatan Penerbangan in the period June – November 2022 were included in the study. The independent variables studied were flight hours, age, obesity status, smoking, and family history of type II DM.

Results. Two hundred and sixty-two fixed-wing civil aviation pilots were included in this study, of which 131 (50%) pilots had the metabolic syndrome and 131 (50%) did not have the metabolic syndrome. The mean age of the patients in the study was  $38.70 \pm 10.54$  years, with 57.6% of the pilots aged 40 years. 59.2% of the subjects had flight hours 5000 hours, with the median flight hours of all subjects being 5600 (45–27700) hours. Most of the subjects (64.5%) had a body mass index (BMI) which was included in the obesity category. Only age > 40 years and BMI  $\geq 25$  kg/m<sup>2</sup> were found to be associated with the metabolic syndrome ( $p < 0.001$ ), with odds ratios of 5.90 (95% CI, 2.79–12.45) and 6, respectively. 24 (95% CI,

3.25–12.00). After removing the age factor, flying hours 5000 hours had a 3.33 (95% CI, 1.87–5.94) times higher risk of experiencing metabolic syndrome.

Conclusion. Age 40 years and obesity status are associated with an increased risk of metabolic syndrome among male civil fixed-wing aircraft pilots.