

Jumlah sektor 24 jam terakhir dan faktor lainnya terhadap kelelahan penerbang sipil pada penerbangan jarak dekat di Indonesia = The effect of number of sectors and other risk factors on fatigue among short haul commercial pilots in Indonesia

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Abstrak

Latar belakang: Kelelahan penerbang sipil termasuk pada penerbangan jarak dekat dapat mempengaruhi fungsi kognisi penerbang sehingga membahayakan keselamatan penerbangan. Tujuan penelitian ini untuk mengidentifikasi faktor-faktor yang mempengaruhi kelelahan penerbang sipil pada penerbangan jarak dekat di Indonesia.

Metode: Desain penelitian potong lintang dengan purposive sampling dilakukan di antara penerbang jarak dekat dengan rating Boeing 737 series yang melaksanakan pengujian kesehatan di Balai Kesehatan Penerbangan selama periode 5-26 Mei 2014. Kelelahan diukur dengan Self-Reporting Questionnaire, Fatigue Severity Scale (FSS). Data dikumpulkan dengan pengisian kuesioner oleh subyek, meliputi demografi, pekerjaan, kehilangan waktu tidur (Epworth Sleepiness Scale - ESS), faktor personal, dukungan manajemen, dan FSS. Analisis regresi linear dipakai untuk menganalisis faktor-faktor berkaitan kelelahan. Hasil: Di antara 785 penerbang yang melaksanakan pengujian kesehatan, 382 bersedia berpartisipasi, dan 239 subyek memiliki rating Boeing 737 series. Ratarata skala kelelahan adalah 4,66 (standar deviasi 1,202). Faktor-faktor dominan yang mempertinggi skala kelelahan adalah jumlah sektor 24 jam terakhir, jam terbang penugasan di luar jadwal, dan kehilangan waktu tidur. Setiap penambahan 1 sektor dalam 24 jam terakhir meningkatkan 0,371 skala kelelahan [koefisien regresi (β) = 0,371; $P = 0,000$]. Selanjutnya setiap penambahan 1 jam terbang penugasan di luar jadwal memepertinggi 0,033 skala kelelahan ($\beta = 0,033$; $P = 0,000$). Sedangkan setiap penambahan 1 nilai ESS mempertinggi 0,043 skala kelelahan ($\beta = 0,043$; $P = 0,008$).

Simpulan: Jumlah sektor 24 jam terakhir, kehilangan waktu tidur, dan jam terbang penugasan di luar jadwal mempertinggi risiko kelelahan di antara penerbang sipil pada penerbangan jarak dekat di Indonesia.

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Background: Fatigue could impair pilots' cognitive function which may lead to accidents in short-haul flight. The aims of this study were to investigate the risk factors of short-haul commercial pilots fatigue in Indonesia.

Methods: Cross-sectional study with purposive sampling was directed to Boeing 737 series typed-rating pilots who were taking medical examination at the Civil Aviation Medical Center, Jakarta from May 5-26th 2014. Fatigue was measured with Self-Reporting Questionnaire, Fatigue Severity Scale (FSS). Data were collected by completing an anonymous questionnaire on demographics, workload, sleep restriction (Epworth Sleepiness Scale-ESS), personal factors, and managerial support. Risk factors and fatigue were analyzed using linear regression.

Results: During data collection, 785 pilots were taking medical examination, 382 pilots were willing to participate and 239 Boeing 737 series typed-rating pilots were chosen as subjects. Mean of FSS was 4.66 ± 1.202 . Dominant factors of fatigue were number of sectors in 24 consecutive hours, flight times of

unplanned flights in 30 consecutive days, and sleep restriction. Each additional sector correlated significantly to a 0.371 increase on the FSS [regression coefficient (β) = 0,371; $p=0,000$] and each additional value of ESS correlated significantly to a 0,043 on the FSS (β = 0,043; p = 0,008), while each additional flight times of unplanned flights correlated significantly to a 0,033 on the FSS (β = 0,033; p = 0,000).
Conclusions: Number of sectors in 24 consecutive hours, flight times of unplanned flights in 30 consecutive days, and sleep restriction correlated significantly to higher FSS.