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 faktorfaktor 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 waku tidur. Setiap penambahan 1 sektor dalam 24 jam terakhir meningkatkan 0,371 skala kelelahan [koefisien regresi () = 0,371; P = 0,000]. Selanjutnya setiap penambahan 1 jam terbang penugasan di luar jadwal memepertinggi 0,033 skala kelelahan (= 0,033; P = 0,000). Sedangkan setiap penambahan 1 nilai ESS mempertinggi 0,043 skala kelelahan (= 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 () = 0,371; p=0,000] and each additional value of ESS correlated significantly to a 0,043 on the FSS (= 0,043; p = 0,008), while each additional flight times of unplanned flights correlated significantly to a 0,033 on the FSS (= 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.