

ABSTRAK

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Judul Skripsi : Perbandingan Flora Udara Sebelum dan Sesudah Pembelajaran di Ruang Skill Lab dan Tutorial Fakultas Kedokteran Universitas YARSI

Pendahuluan: Kualitas udara dalam ruangan (*Indoor Air Quality/IAQ*) merupakan faktor penting yang memengaruhi kesehatan dan konsentrasi penghuni, khususnya di lingkungan pendidikan seperti ruang skill lab dan tutorial. Aktivitas pembelajaran, kepadatan penghuni, penggunaan peralatan, serta sistem ventilasi berperan dalam memengaruhi keberadaan mikroorganisme udara. Kondisi ruang ber-AC tanpa ventilasi alami berpotensi meningkatkan akumulasi flora udara dibandingkan ruang dengan ventilasi alami. Keberadaan mikroorganisme udara, meskipun tidak terhindarkan, dapat menimbulkan risiko gangguan kesehatan respiratori, sehingga diperlukan pengelolaan kebersihan dan kualitas udara yang optimal.

Metodologi: Penelitian ini merupakan studi deskriptif kuantitatif kualitatif dengan jumlah sampel sebanyak 20. Pengambilan sampel dilakukan pada pagi hari sebelum pembelajaran dan sore hari sesudah pembelajaran menggunakan metode *settle plate* pada media Nutrient Agar. Sampel diinkubasi selama 48 jam pada suhu 35–37°C, kemudian jumlah koloni bakteri dihitung dalam satuan CFU untuk menilai peningkatan flora udara dan dilakukan identifikasi sifat bakteri menggunakan pewarnaan Gram.

Hasil: Hasil penelitian menunjukkan bahwa jumlah mikroorganisme udara di 5 ruang Skill Lab dan 5 Tutorial masih berada di bawah ambang batas standar kualitas udara, yaitu kurang dari 700 CFU/m³. Meskipun demikian, terdapat peningkatan jumlah koloni flora udara yang signifikan setelah kegiatan pembelajaran berlangsung. Jumlah koloni terendah yang ditemukan adalah 0 CFU/m³, sedangkan jumlah tertinggi mencapai 13 CFU/m³. Peningkatan jumlah mikroorganisme udara diduga berkaitan dengan aktivitas manusia, kepadatan penghuni, serta mobilitas selama kegiatan pembelajaran. Hasil identifikasi mikroskopik menunjukkan dominasi bakteri *Coccus* positif Gram dan ditemukan beberapa bakteri batang negatif Gram.

Simpulan: Jumlah mikroorganisme udara di ruang *Skill Lab* dan Tutorial Fakultas Kedokteran Universitas YARSI masih memenuhi standar kualitas udara. Meskipun demikian, aktivitas pembelajaran berkontribusi terhadap peningkatan jumlah mikroorganisme udara, sehingga diperlukan pengelolaan lingkungan ruangan yang optimal untuk menjaga kualitas udara tetap baik.

Kata kunci: Kualitas udara dalam ruangan, flora udara, mikroorganisme, ruang *skill lab*, ruang tutorial.

ABSTRACT

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Thesis Title : Comparison of Airborne Flora Before and After Learning in the Skill Lab and Tutorial Room of the Faculty of Medicine, YARSI University

Introduction: Indoor Air Quality (IAQ) is an important factor that affects the health and concentration of residents, especially in educational environments such as skill lab and tutorial rooms. Learning activities, population density, equipment use, and ventilation systems play a role in influencing the presence of airborne microorganisms. The condition of an air-conditioned room without natural ventilation has the potential to increase the accumulation of air flora compared to a room with natural ventilation. The presence of airborne microorganisms, although unavoidable, can pose a risk of respiratory health problems, so optimal hygiene and air quality management is required.

Methodology: This study is a qualitative quantitative descriptive study with a total of 20 samples. Sampling was carried out in the morning before learning and in the afternoon after learning using the settle plate method on Nutrient Agar media. Samples were incubated for 48 hours at a temperature of 35–37°C, then the number of bacterial colonies was calculated in CFU units to assess the increase in air flora and identify bacterial properties using Gram staining.

Results: The results showed that the number of air microorganisms in 5 Skill Lab and 5 Tutorial rooms was still below the standard air quality threshold, which was less than 700 CFU/m³. Nevertheless, there was a significant increase in the number of colonies of aerial flora after the learning activities took place. The lowest number of colonies found was 0 CFU/m³, while the highest number reached 13 CFU/m³. The increase in the number of airborne microorganisms is thought to be related to human activities, population density, and mobility during learning activities. The results of microscopic identification showed the dominance of Gram-positive Coccus bacteria and several Gram-negative rod bacteria were found.

Conclusion: The number of air microorganisms in the Skill Lab and Tutorial room of the Faculty of Medicine, YARSI University still meets air quality standards. However, learning activities contribute to an increase in the number of air microorganisms, so optimal management of the room environment is needed to maintain good air quality.

Keywords: Indoor air quality, air flora, microorganisms, skill lab room, tutorial room.