**ABSTRACT**

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**The Realationship Between AC Usage Duration and the increase of microbe number (A Case Study at Enviromental Health Department of Yogyakarta Polytechnic of Health )**

The use of Air Conditioner (AC) as an alternative to replace natural ventilation can indeed improve the comfort and work productivity. However, ACs which are rarely cleaned will benefit microorganisms to multiply and make work environment inconducive. Environmental Health Department of Yogyakarta Polytechnic of Health has 21 ACs installed in several rooms. This study was aimed to examine the relationship between usage duration and the increase of microbe number of those ACs.

This observational study with time series design observed 5 ACs sample which were derived by using purposive method. The inclusion criteria was the ACs which are used at wrking hour and still works well. The independent variabel consists of 2,4 and 6 weeks usage duration, and the microbe numbers were examined at microbiology laboratory of the department. Descriptive analysis was conducted towards the tables presenting the data.

The study concludes that there is a relationship between usage duration and the increasing of microbe number. The longes the duration, the higher the microbe number. In ordes to keep the microbe number low, it is advised that the ACs should be periodically maintained and cleaned.

**Keywords**: air conditioner, microbe number

**Bibliography**: 21 books (1994-2009)