

ABSTRACT

This research, which is done in IT Telkom, has an aim to understand the influences of electromagnetic wave radiation from a mobile phone to the brain wave of 17-23 year-old men and women, the factors, and the solutions to reduce the influences. The basic method which is used in this research is explanative method. To determine the area of sampling process, available sampling method is used and to determine the phone users, the purposive sampling method is used. The data is divided into two, that are questioner and the record of EEG (*electroencephalogram*). The questioner data is analysed by using multiple linear regression while the *electroencephalogram* record will be analysed by measuring the variance of brain wave amplitude.

The research on influences of electromagnetic wave radiation from a mobile phone to the brain wave of 17-23 year-old men and women uses five variables : 1) SAR (*Specific Absorption Rate*), 2) Type of phone, 3) Average number of callings in a day, 5) Usage of handsfree. The result shows that there are some influences of electromagnetic wave radiation from a mobile phone to the brain wave of 17-23 year-old men and women in a short term, such as the user feels to have headache, burnt in the ears, and tire. The SAR factor and average number of callings in a day have positive relationship to the influences of electromagnetic wave radiation from a mobile phone to the brain wave of 17-23 year-old men and women, while the usage of handsfree has a negative relationship to the influences of electromagnetic wave radiation from a mobile phone to the brain wave of 17-23 year-old men and women. Some factors that are not directly influencing to the influences of electromagnetic wave radiation from a mobile phone to the brain wave of 17-23 year-old men and women are the type of the phone and the average number of callings.

Keyword: radiation, mobile phone, brain wave, SAR