ABSTRACT

EFFECT OF HANDPHONE'S ELECTROMAGNETIC WAVE EXPOSURE IN ACUTE PERIOD TO WORKING MEMORY AND SUCROSE INTAKE IN WHITE RATS (Rattus norvegicus) Sprague dawley STRAIN

BY

ANISA NURAISA DJAUSAL

Electromagnetic wave exposure especially from handphone, influence the physiology of normal brain. The electromagnetic wave could increase the free radical activity in cell which considered as stress by the body. Stress exposure from unknown environment will cause deficit in working memory. To acknowledge the effect of handphone's electromagnetic wave exposure to working memory and sucrose intake. The sample of this research are 18 white rats (Rattus norvegicus) Sprague dawley strain age 2-3 weeks old that divided into 3 random groups: control (K), 1 hour treatment (P1), and 3 hours treatment (P2) that exposed with handphone's electromagnetic wave in 7 days. The white rats had time to adapt in 7 days before the trial, and a pre-test in a day before the trial. The sucrose intake been measured everyday in 7 days, and in day 8 the working memory been tested with radial arm maze. The average values of working memory's pre-test are K:3,83%, P1:3,67%, P2:3,83% and for the post-test are K:1,17%, P1:1,67%, P2:1,33% with Wilcoxon bivariate analysis test in K p=0,020, P1 p=0,026, P2 p= 0,026 ($p< 0,05$). The average of sucrose intake are K:173,57ml, P1:120ml, P2:134,29ml with p=0,034 ($p< 0,05$) in Kruskal-Wallis bivariate analysis test. The handphone's electromagnetic wave exposure in acute period could decrease the working memory and sucrose intake in white rats *(Rattus norvegicus*).

Keywords: electromagnetic wave, handphone, sucrose intake, working memory.