

---

## **P113. THE EFFECT OF IONIZING RADIATION ON THE NEUROCOGNITIVE STATE AND OXIDATIVE STRESS AND THE QUALITY OF LIFE AMONG WORKERS**

Asma BAHRANIFARD, Ali Akbar MALEKIRAD, Samira SHAHRJERDI,  
Zeynab KIANI, Kobra RAHZANI, Mohammad ABDOLLAHI

Natural Hazards Management, Shakhes Pajouh Research Institute, Isfahan, Iran

Department of Biology, Payame Noor University, Tehran, Iran

Department of Physical Therapy, Faculty of Medical Science, Tarbiat Modares University, Tehran, Iran

Faculty of Nursing and Midwifery, Arak University of Medical Science, Arak, Iran

Department of Toxicology and Pharmacology, Faculty of pharmacy, Pharmaceutical Sciences Research Center, Tehran university of Medical Science, Tehran, Iran

Long-term exposure to ionizing radiation even with low dosage is associated with mutation and carcinogen factors. Ionizing radiations via free radicals overproduction and oxidative stress could lead to increase incidence of numerous diseases. The present study aimed to compare the neurocognitive state and oxidative stress and quality of life in workers in compare to control group.

The participants were consisted of 53 ionizing radiation exposed workers and 41 non exposed workers as control group. The biochemical parameters, the amount of DNA damage in blood serum, the neurocognitive parameters by SNI questionnaire, the psychological parameters by SCL90 and quality of life by SF36 questionnaire were evaluated to investigate the consequences. The data was analyzed with multivariate variance analysis and person correlate.

The biochemical parameters evaluation represented significant reduction in glucose level while the serum level of aspartat amino transferase has been increased considerably in exposed workers. The amount of DNA damage revealed no significant differences in both groups. Additionally, there is a direct and significant correlation between work history of and DNA damage. The psychological and neurocognitive assessment proved considerable decrease under influence of ionizing radiation. Quality of life questionnaire revealed decrease in physical activity with increase pain and anxiety level.

Consequently, it sounds oxidative stress due to ionizing radiations have brought detrimental effects on the psychological and neurocognitive parameters and physical health status. Hence it is necessary to consider the ionizing radiation effects on workers metabolic and neurocognitive status to provide Occupational Health in work places.

\* [AK\\_malekirad@yahoo.com](mailto:AK_malekirad@yahoo.com)