

Radiation Safety Factor of Education and Research Institution in Republic of Korea

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Abstract : This study surveyed on recognition related to radiation safety for radiation safety managers and workers those who have been worked in Republic of Korea education and research institution. At present, South Korea has no guideline and manual of radiation safety for education and research institution. Therefore, we tried to find an educational basis for development of radiation safety guideline and manual. To check the level of knowledge, attitude, and behavior about radiation safety, we used the questionnaire that consisted of 29 questions against knowledge, attitude and behavior, 4 questions against self-efficacy and expectation based on four factors (radiation source, human, organizational and physical environment) of the Haddon's matrix. Responses were collected between May 4 and June 30, 2015. We analyzed questionnaire by means of IBM SPSS/WIN 15 which well known as statistical package for social science. The data were compared with mean, standard deviation, Pearson's correlation, ANOVA (analysis of variance) and regression analysis. 180 copies of the questionnaire were returned from 60 workplaces. The overall mean results for behavior level was relatively lower than knowledge and attitude level. In particular, organizational environment factor on the radiation safety management indicated the lowest behavior level. Most of the factors were correlated in Pearson's correlation analysis, especially between knowledge of human factors and behavior of human factors (Pearson's correlation coefficient 0.809, $P < .01$). When analysis performed in line with the main radiation source type, institutions where have been used only opened RI (radioisotope) behavior level was the lowest among all subjects. Finally, knowledge of radiation source factor ($\beta = 0.556$, $P < .001$) and human factor ($\beta = 0.376$, $P < .001$) had the greatest impact in terms of behavior practice. Radiation safety managers and workers think positively about radiation safety management, but are poorly informed organizational environment of their institution. Thus, each institution need to efforts to settlement of radiation safety culture. Also, pedagogical interventions for improving knowledge on radiation safety needs in terms of safety accident prevention.

Keywords : radiation safety management, factor analysis, SPSS, republic of Korea

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