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A Discussion for Alteration of the Radiation Issues Based on the Clipping Analyses of Radiation Articles Reported in Korea

Joo Yeon Kim, Dol Mi Youn, Ji Yup Yoo, and Tai Jin Park
Korean Association for Radiation Application, Seoul, Republic of Korea

ABSTRACT

Background: Radiation accidents having occurred in recent containing the accident in Fukushima nuclear power plants of Japan were resulted to the increase in some public concern, anxiety and confusion for radiation or nuclear safety. The public anxiety for radiation is not being decreased though the announcements done in radiation research institutes in Korea. Therefore, this study aims at providing an effective system for radiation publicity to the public members by the clipping analysis for the radiation articles reported in the media. And, the relation between those radiation issues and the radiation perception to the public members is analyzed.

Materials and Methods: The radiation articles reported by them in 2013 and 2014 have been collected, and they are then classified with the article characteristic, field and tendency. Classified articles have been reviewed by dividing as two year. The 210 articles have been compared for their tendencies, characteristics and fields by year reported, and their characteristic comparison by reported year are then reviewed.

Results and Discussion: Though the frequency that the radiological accidents have occurred in worldwide is far low compared to the accidental frequencies occurred in the general industrial fields, the radiation perception is being still deteriorated because of its special problem, which is defined as exposure, contamination or radioactivity, about radiation. The basic principles for radiation communication were suggested for preventing some unnecessary misunderstanding due to the variation of understanding for radiation issues.

Conclusion: It is necessary to perform a variety of strategies for the publicity in improving the radiation perception, to build a relationship with the press or the media and then to consistently interact with them. Radiation communication must be performed by radiation experts or complete charge department, and must be consistently performed and be taken predictable patterns.

Correspondence to Tai Jin Park
tjpark@ri.or.kr

Keywords: Radiation communication, Radiation perception, Clipping

1. INTRODUCTION

Radiation accidents having occurred in recent containing the accident in Fukushima nuclear power plants of Japan were resulted to the increase in some public concern, anxiety and confusion for radiation or nuclear safety. The public anxiety for radiation is not being decreased though the announcements done in radiation research institutes in Korea. Furthermore, the characteristics reported in the press, which they are released at random without detail reviews by the radiation research institutes, contribute to the negative increase in radiation perception.

Therefore, this study aims at providing an effective system for radiation publicity to the public members by the clipping analysis for the radiation articles reported in the media. And, the relation between those radiation issues and the radiation perception to the public members is analyzed. Clipping analysis is performed for the articles reported in the media in 2013 and 2014 [1, 2].

A communication of the radiation with the public members can be done by the social agreement or confidence that radiation can provide some technical values in using radiation. This communication can be only done by providing predictive and useful information for the radiation, and then a change of the negative perception for the radiation will be expected. For changing of the negative perception, some messages for radiation communication can be derived by reviewing key words by social class for radiation perception. Therefore, the review of key words in radiation perception is done by combining the clipping analyses for the articles reported in the media. Finally, some strategies for radiation communication are then suggested by considering social class.

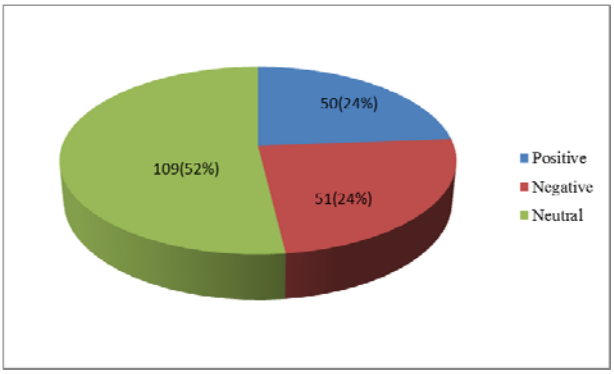

Fig. 1. Analysis of the articles tendency.

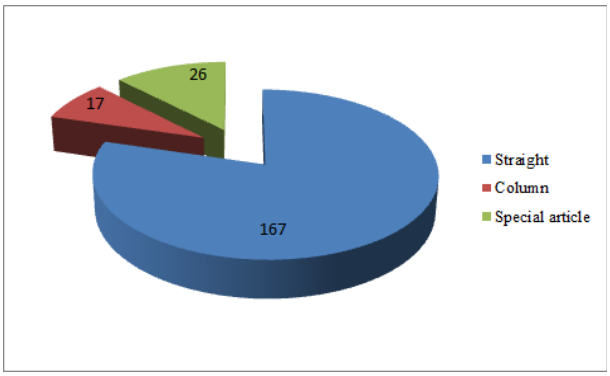

Fig. 2. Analysis of the characteristics of the articles.

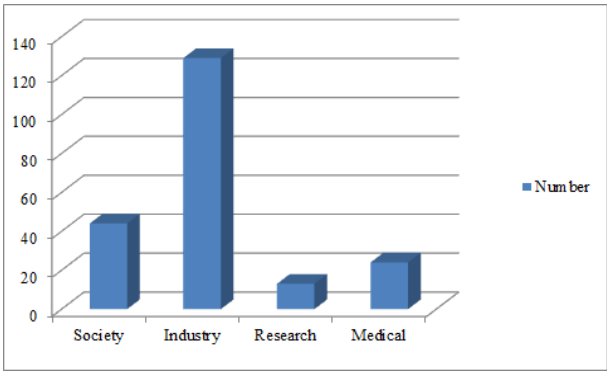

Fig. 3. Analysis of the field of the articles.

2. MATERIALS AND METHODS

2.1 Clipping analyses of radiation articles

The 210 articles reported in the media, such as Naver Scrap Master in Korea, etc, have been collected by searching key words of radiation or radioactivity for the portal systems. The tendency characteristics regarding these articles were reviewed, and they are then classified as positive, neutral and negative tendencies, respectively. Two classifications of articles are done for their type and field. The former is classified as straight, column and special article by straight, column, and the latter is classified as social, research and medical fields. The characteristic analyses of the articles reported in 2014 in Korea are summarized in Figure 1 to Figure 3.

2.2 Comparative analysis of the articles

The 210 articles have been compared for their tendencies, characteristics and fields by year reported, and their characteristic comparison by reported year are then reviewed. These comparisons are summarized in Figure 4 to Figure 6.

Corresponding author : Tai Jin Park, tjpark@ri.or.kr
18F, Seoul-forest IT Valley, 77, Seongsuil-ro, Seongdong-gu, Seoul, 04790, Korea

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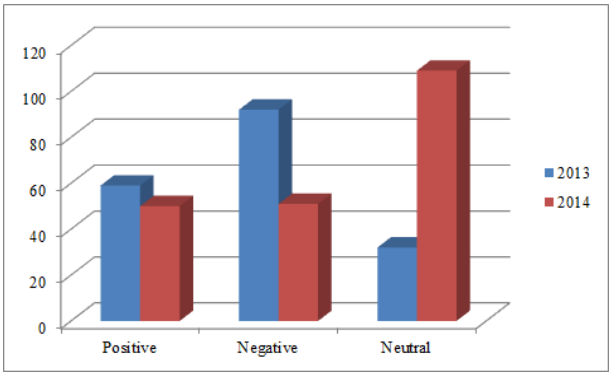

Fig. 4. Comparison of the article tendency.

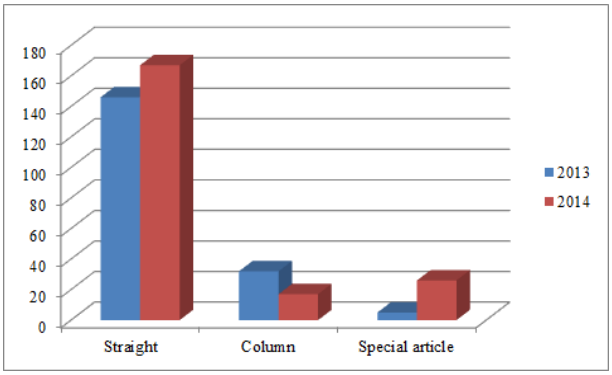

Fig. 5. Comparison of the article characteristics.

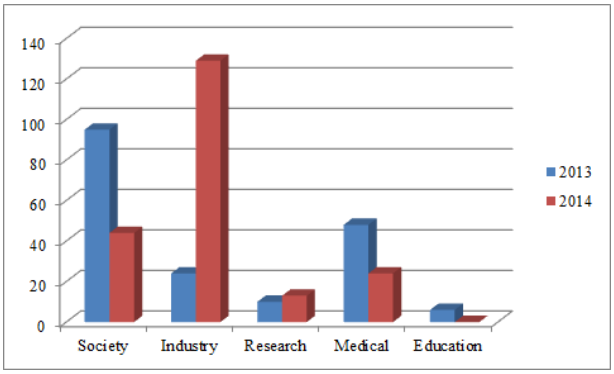

Fig. 6. Comparison of the article fields.

Table 1. Main Concerns of the Social Classes

Issue	Key message
Definition	- Radiation
Safety	- Management of radiation sources - Hazard due to radiation exposure - Safety in radiation work - Environmental effect due to radiation
Health	- Radiation effects - Benefit due to radiation application - Radon exposure - Cancer risk due to radiation exposure - Hazard due medical diagnosis and treatment using radiation or radioisotopes - Radiation effect due to x-ray exposure
Law/Regulation	- Laws or regulation for radiation safety - Regulatory activities

2.3 Analysis of key words for radiation communication

International Atomic Energy Agency (IAEA) recommends that key words for radiation communication with the public members must start to clearly define the objects that information users want to know [3]. These objects may contain radiation or nuclear safety, health, laws or regulations including professional knowledge. It is then required to derive the key words causing concerns or attentions of the public members by reviewing these objects. Therefore, key issues applicable to Korean situation have been reviewed based on IAEA recommendation and they are summarized in Table 1.

3. RESULTS AND DISCUSSION

3.1 Clipping results for reported articles

According to the comparative analysis of the media tendency in Fig. 4, there has been a slight decrease in the number of positive articles compared to the negative articles. In addition, negative articles have been also reduced by almost 50% compared to 2013. Although the recent negative perception of radiation resulted from Fukushima nuclear accident in Japan has been reduced compared to 2013, the positive articles are also reduced, indicating no changes in the tendency of media. The notable consideration in Fig. 4 is the changes in the number of neutral articles; the number of neutral articles has been greatly increased by almost 300% in 2014. Those neutral articles can change to the positive or negative tendency at any time depending on the circumstances such as publicity strategies or radiation accidents. As a result it is required to establish response strategies considering this nature of media.

On the other hand, according to the findings of Fig. 6, the significant extent of changes of media articles in the industry can be seen. This means that at the social level, the efforts to highlight the positive aspects of the radiation through introducing utilization status of radiation based on the scientific fact have increased while the negative articles have dealt with the problem of radiation safety. Nevertheless, in order to highlight the positive aspects of use of radiation it is necessary to propose a strategy that presents a balance of use and safety of radiation to the media.

3.2 Derivation of key words for radiation communication

The social or target class for radiation perception

Table 2. Key Messages for Improving Radiation Communication or Perception

Issue	Key message
Definition	- Radiation type, interaction of radiation with matters
Safety	- Philosophy for radiological protection - Safety activities for minimizing radiation exposure - Radiation sources used in non-nuclear field - Radiation is securely controlled or managed by radiation safety officers. - Equipment containing radiation sources is securely controlled or managed according to its manufacture purpose. - Ensuring radiological safety by workers or CEOs
Health	- Radiation effects - Foodstuffs exposed by radiation have no effect on human body. - Public members are more exposed to background radiation than artificial radiation.
Law/Regulation	- Laws or regulation for radiation safety - Regulatory activities

must be realized after deriving the key words. And, it is important to develop the customized strategies for radiation communication by class, and this class can be classified as media, government, medical member, radiation workers, researcher, teachers, NGOs and the public members. Key issues for radiation communication can be defined by referring IAEA recommendation and messages by key issue are summarized in Table 2.

3.3 Strategy for radiation publicity by social class

Interesting information by social class is discussed for the media, government, experts and teachers. Specifically, communication with the media can be achieved by regularly providing the objective information by the serial publication of specific columns. Communication with the government can be achieved by providing key information for effectively establishing the policy. And, communication with the experts can be achieved by providing scientific information due to their radiation applications. Finally, communication with teachers can be achieved by providing books or internet contents for radiation perception including fundamental theory of radiation, because they can have much effect on their students.

The important consideration in radiation communication is the variation of the capability understanding a variety of radiation information, since this variation of understanding is resulted from the analysis capability due to education by social class [3]. Therefore, the basic principles for radiation communication are suggested for preventing some unnecessary misunderstanding due to the variation of understanding for radiation issues. First, provide an intensive communication strategy for key issues of small scale level. Second, radiation communication must be performed by radiation experts or complete charge department. Third, radiation communication must be consistently performed and be taken predictable patterns. Fourth, radiation information must be only released as objective fact. Finally, technical or scientific terminology must be excluded as far as possible and easy terminology in the level of the public members must be used.

4. CONCLUSION

The reason for degeneration of radiation perception or acceptance is resulted in exposure and radioactive contamination, which is the specific characteristics of radiation sources, though the occurring frequency of radiological accidents is very as low as the accidental occurrence in general industries. For performing various strategies for radiation publicity, main issues for radiation were reviewed by examining the articles released in Korea in 2013 and 2014 in this study. And, main key words for radiation communication and main messages consistent with key words were derived by referring IAEA recommendation. Social class for radiation communication was classified as the media, government, experts and teachers, and the basic principles for radiation communication were suggested for preventing some unnecessary misunderstanding due to the variation of understanding for radiation issues. Since key words for radiation perception to the public members are defined as safety, health and environment, radiation communication must be performed by radiation experts or complete charge department, and must be consistently performed and be taken predictable patterns.

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