

AWARENESS ABOUT RADIOPHOBIA AMONG ALLIED HEALTH SCIENCE STUDENTS

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Abstract

Introduction: Radiophobia is a fear of ionizing radiation. Irrational fear of low-level radiation is a constantly increasing component of public attitudes and the political responses to them. While careless management of any perturbation to the natural environment, particularly ionizing radiation, can produce both acute and long-term hazards, the extensive body of scientific knowledge of the biological effects of ionizing and nonionizing radiation that already exists (although far from complete) has been most often perverted, confused, or ignored in the public and private decision processes. **Aim:** This survey was conducted for assessing the Awareness About Dna Strand Breaks And Chromosomal Aberrations Among Allied Health Science Students. **Materials and method:** A cross-section research was conducted with a self-administered questionnaire containing ten questions distributed amongst 100 Allied Health Science students. The questionnaire assessed Awareness About Radiophobia among Allied Health Science Students. The responses were recorded and analysed. **Results:** 74.1% of the respondents were aware of Radiophobia. 67% were aware of symptoms of Radiophobia. 61.2% of the respondents were known that Radiophobia is treated by psychiatrist. 87.9% of the respondents were aware that Radiophobia is an excessive fear of radiation. 67% were aware about that radiophobia was presented by Dr Albert Soiland of Los Angeles in 1903. **Conclusion:** There is a moderate awareness amongst Allied Health Science students about Radiophobia. Enhanced awareness initiatives and educational programmes together with increased importance for curriculum improvements that further promote knowledge and awareness of Radiophobia should be initiated for further understanding and benefits.

Keywords: Radiophobia, Radiation, Psychological Disorder, Psychiatrist.

INTRODUCTION

Radiation is defined as the transmission or emission of energy through space or objects. Radiation can be further divided between ionizing and non-ionizing. Nuclear materials give off ionizing radiation and are measured in sieverts (Sv). The prolonged or significant exposure to such ionizing radiation can result in acute radiation syndrome (ARS). [1][2][3] It is defined by the National Council on Radiation Protection and Measurements as “the acute radiation syndrome is a broad term used to describe a range of signs and symptoms that reflect severe damage to specific organ systems and that can lead to death within hours or up to several months after exposure.” The proper care of acute radiation syndrome requires planning at the governmental, local and medical level to ensure the proper treatment and use of limited resources.[4]

MATERIALS AND METHOD

This cross-sectional research was conducted with a self-administered questionnaire containing ten questions distributed amongst 100 Allied Health science students. The students were randomly selected across various disciplines of Allied Health Sciences. The study setting was designated in the university campus. The survey instrument was a questionnaire pre tested and evaluated for validity and reliability concerns.

The questionnaire included ten questions eliciting the demographic data through open ended responses and multiple choice questions for the other responses. The study was approved by the Institutional Ethical Committee and informed consent was obtained from the participants. The questionnaire was posted on an online platform and the identity of the respondents were kept confidential.

The questionnaire assessed the awareness about Radiophobia aberrations in medical applications. The responses were recorded and analyzed. There were no incomplete responses and no dropouts from the study. The final data obtained was organized, tabulated and subjected to statistical analysis.

The salient questions in the study are:

1. Are you aware of Radiophobia?
2. Are you aware of symptoms of Radiophobia?
3. Is Radiophobia treated by psychiatrist?
4. Is Radiophobia an excessive fear of radiation?
5. Is Radiophobia a psychological disorder?

RESULTS

74.1% of the respondents were aware of Radiophobia(Figure 1.). 67% were aware of symptoms of Radiophobia(Figure 2.) 61.2% of the respondents were known that Radiophobia is treated by psychiatrist(Figure 3.). 87.9% of the respondents were aware that Radiophobia is an excessive fear of radiation(Figure 4.). 67% were aware about that radiophobia was presented by Dr Albert Soiland of Los Angeles in 1903(Figure 5.)

Figure 1: Awareness of Radiophobia.

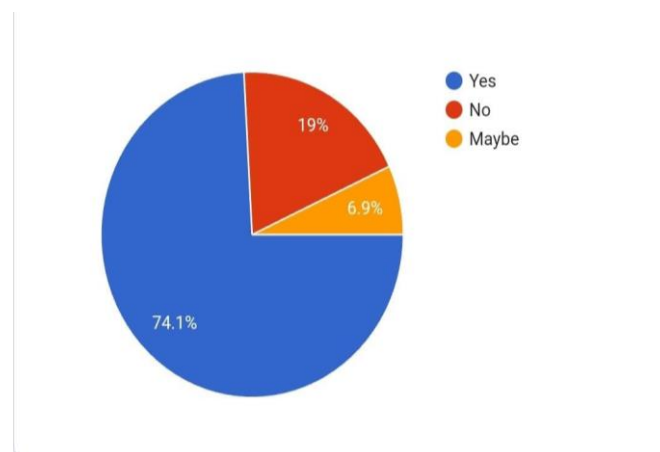


Figure 2: Awareness of symptoms of Radiophobia.

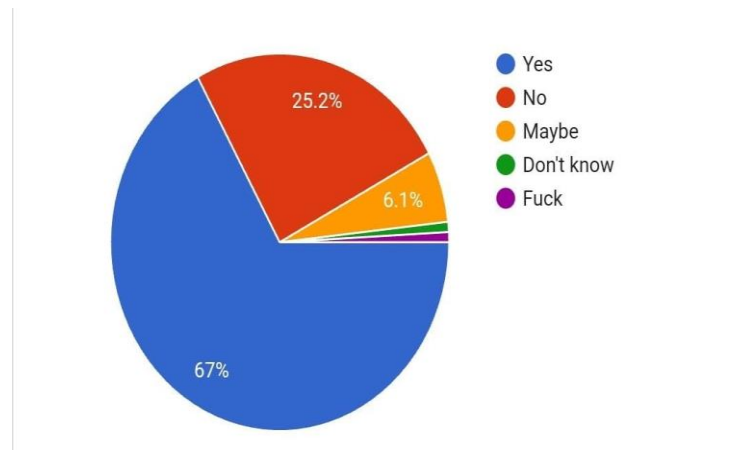


Figure 3: Awareness of Treatment of Radiophobia.

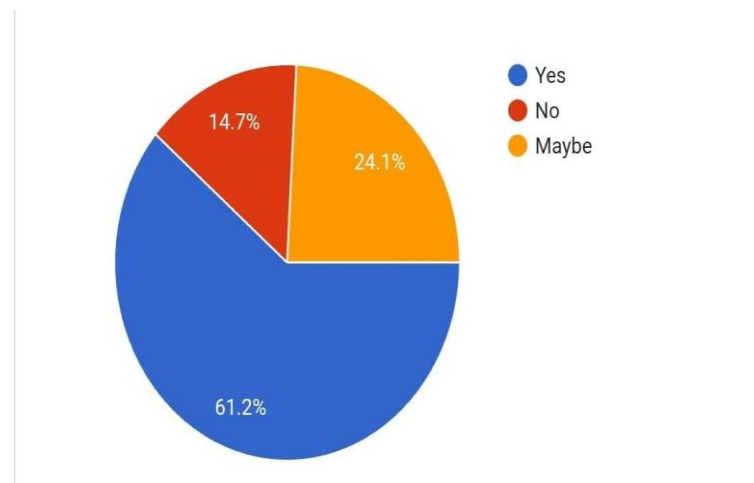


Figure 4: Awareness of Cause of Radiophobia.

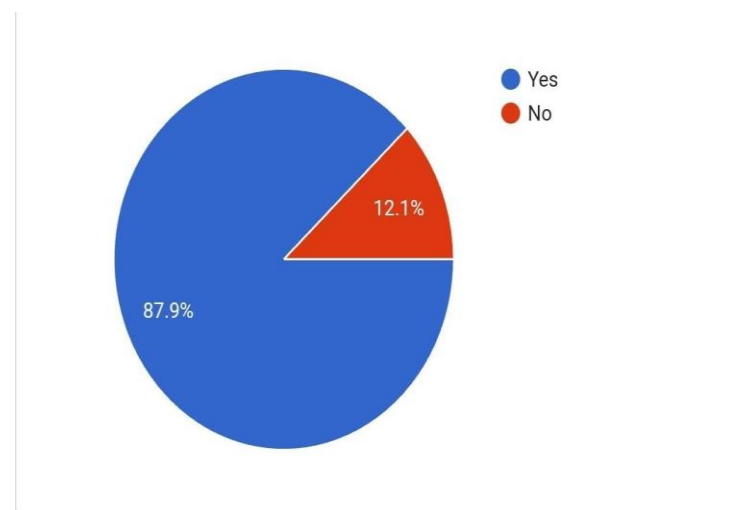
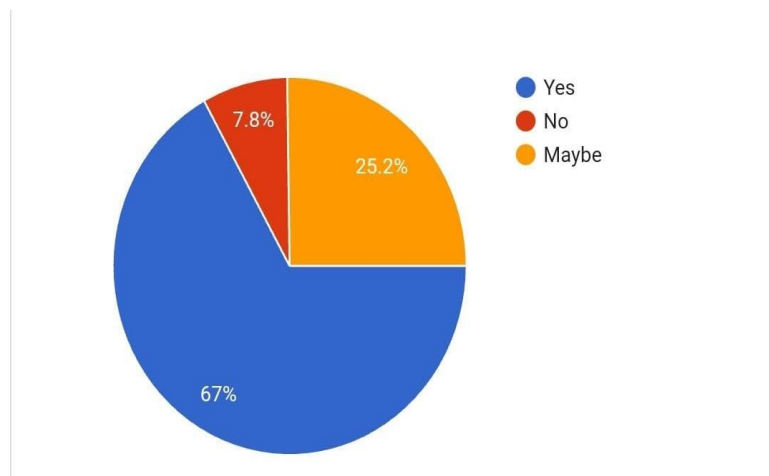


Figure 5: Awareness that radiophobia was presented by Dr Albert Soiland of Los Angeles in 1903



DISCUSSION

Radiation, especially within the context of nuclear power, have in many parts of the world acquired very powerful, and very negative, imagery. This imagery is partially linked to nuclear war, partially linked to cancers and the notion that radiation poses a threat to future generations, as well as the notion of nuclear accidents being catastrophic, high-fatality events. This mental imagery has been reinforced by the fact that in the aftermath of nuclear accidents, be it Three Mile Island, Chernobyl or Fukushima, there has been claims about considerable numbers of fatalities due to radiation exposure. These often rely on a discredited application of collective dose which calculates health detriments by multiplying very low doses (often in the microsievert range) with large populations, without accounting for uncertainties or background rates[5]. These claims are often highly publicised and often presented without the appropriate context or perspective being offered to the audience. However the AHS students are moderately aware about Radiophobia.

The historic communication failures of the radiation protection community have given the impression that such alarmistic reports reflect the views of the broader scientific community[6]. Given the importance of imagery and emotions, it is not surprising that nuclear power causes feelings of dread and anxiety—it would perhaps be more peculiar if people did not fear radiation[7]. As Radiophobia is the fear of Radiation the students are aware that it is a psychological disorder.

The debate surrounding the potential health detriments associated with low-dose radiation is one which has been ongoing for many decades, and it is unlikely epidemiological evidence about health effects at or below background doses and at low rates will be forthcoming in the near future[8]. However, it is well-established that large doses of ionising radiation can be dangerous, equally, we know that exposure to radiation doses at or below background levels have very low impacts[9].

The negative psychosocial effects and associated health detriment following nuclear accidents are well-established. Stigmatisation of populations affected by radiation has been seen in the aftermath of all major radiological events, be it Hiroshima, Nagasaki, Chernobyl or Fukushima, where the affected population has been discriminated

against due to perceived radiation contamination[10]. The awareness about symptoms of radiophobia is moderate among AHS students.

A range of different factors, such as the dread fear, cognitive links with nuclear weapons and cancers, and the uncertainty about potential health effects of radiation exposure have caused significant mental health issues in populations impacted by nuclear accidents[11]. It has been found that '...the mental health impact of Chernobyl is the largest public health problem unleashed by the accident to date. Following Chernobyl, anxiety and stress were found 100% above controls, with the self-reporting of health issues being three to four times higher than controls. However, diagnoses of mental health conditions had not increased in the 20 years following the accident, pointing clearly towards a stress response amongst the patients, stemming from the effects of evacuation and (perceived) radiation exposure, as well as feelings of helplessness and overall fatalism. Similar findings have been made following the Fukushima accident[12].

CONCLUSION

There is a moderate awareness amongst Allied Health Science students about Radiophobia. Enhanced awareness initiatives and educational programmes together with increased importance for curriculum improvements that further promote knowledge and awareness of Radiophobia should be initiated for further understanding and benefits.

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