1-22-2014

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Introduction:

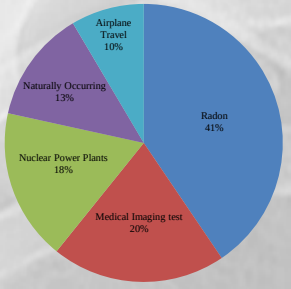
Ionizing radiation is a broad, complicated and often misunderstood topic. Exposure to it is associated with both acute and chronic disease states, especially as the radiation dose increases [1]. Individuals are exposed to ionizing radiation from a variety of sources: naturally-occurring, medical imaging, and other human-made. Studies indicate a difference in both risk perception and known exposures to ionizing radiation between the general public and radiation experts [2-4]. This is in part due to mass media portrayal of health risks, as well as the technical language of radiation risk assessment [Ibid]. In order to determine an effective methodology for instituting educational programs, it is vital to first gain an appreciation for current knowledge and perceptions that exist about ionizing radiation among Vermonters.

Methods:

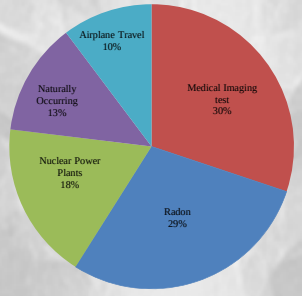
- Conducted a literature review.
- Developed and administered a 20-question survey to 193 adults at 6 locations across Vermont.
- 169 responses were used in data analysis. An additional 24 responses were gathered from the Vermont Radiological Sampling Team and were used as a reference group.
- Data entered into Microsoft Excel. Quality control was randomly performed on 20%.
- Descriptive and statistical analyses (X^2 tests) were conducted using SPSS.

Results:

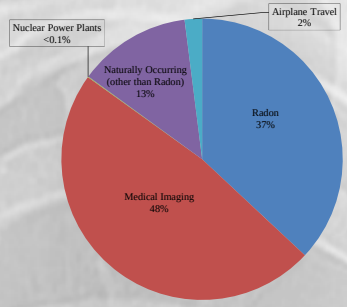
Greatest Perceived Ionizing Radiation Risk for Vermonters (n=157)



Greatest Perceived Ionizing Radiation Risk for Self (n=161)

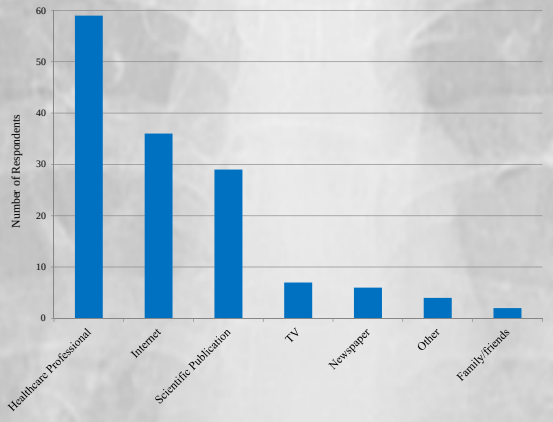


Actual Ionizing Radiation Exposure for the Average American[5]



- Males selected radon 1.6x more frequently than females for risk to average Vermonters (p=.02)
- 39% of respondents were confident in their health care provider's knowledge of ionizing radiation, however the majority of respondents preferred to receive information from their health care provider
- Respondents who were more knowledgeable about medical sources of ionizing radiation tended to have higher education (p=.001) and were more likely to work in science/healthcare (p<.001)

Preferred Source of Ionizing Radiation Information (n=143)



- 30% of those receiving a medical imaging test also received information from their health care providers about the risks of these tests
- Those who tested their home for radon were >2x more likely to indicate radon as the greatest risk to self (p=.002) and 1.5x more likely to indicate radon as the greatest risk to Vermonters (p=.031)
- Respondents of higher education level (p=.006), younger age (p=.008), and men (p=.002) were more likely to select nuclear power as the least risk to Vermonters

SURVEY DEMOGRAPHICS

	Male	*18-45*	*College or Graduate*	*Health/ Science Profession*	*Home tested for Radon*	*Medical Imaging test within last year*
Whole sample (n= 169)	43.2%	75.7%	57.3%	25.4%	23.1%	33.1%

Discussion:

Respondents who tested their home for radon were more concerned about radon as their greatest source of personal risk. In comparison, participants that did not test for radon ranked medical imaging as the greatest perceived personal risk. Despite the fact that individuals surveyed had a higher level of education than the national average, the results showed that there is a further need for educating the public about ionizing radiation.

Recommendations:

- Only 7% of respondents were confident in their knowledge of radiation, indicating a need for more public education.
- Educating health care professionals would have a great impact on public awareness of ionizing radiation for two reasons:
  (1) the majority of respondents preferred to receive information from their health care provider
  (2) the use of medical imaging tests is rapidly increasing
- The Radiological Sampling Team was more knowledgeable than the general population. A pilot program for educational awareness can be modeled from the methods used to educate the Sampling Team.

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