RISK PERCEPTION

1.0 Background

This presentation explain the psychology of how people respond emotionally to risks connected to nuclear and radiological emergencies by describing the different risk perception characteristics also highlight the importance of trust. In a nut shell, the participants should be able to understand the psychology of how people respond emotionally to risks connected to nuclear and radiological emergencies and also learn how to use that knowledge to communicate with the public more respectfully and effectively.

2.0 Risk perception

“What we had done to these people was just outrageous. We had frightened them so bad, they thought they were going to die.”

U.S. Nuclear Regulatory Commission official describing government communication during the Three Mile Island event.

When officials from different government agencies delivered different messages to the people near the Three Mile Island nuclear power plant, they frightened people so much that even though the officials only recommended that 3,500 pregnant women evacuate, as a precaution, 250,000 evacuated, jamming highways.

2.1 Public response

- Public risk response is a matter of perception which may seem:
    - ‘right’ or ‘wrong’
    - ‘rational’ or ‘irrational’
- Perception is real and may result in physical, psychological, economic, and other harms.
- Communication is a vital tool for mitigating these risks, regardless of the objective risk nature of such events.
- Public thinks differently about radiation risks than experts
- Public perceives and responds to risky situations based on emotion in addition to facts. What matters most is how those facts feel
- Emotion can play a bigger role in the way people perceive risks, than reason and rational thinking

This response makes a very important point that it does not matter whether people’s perception of the risk matches what the scientists say. The perception is the reality that emergency managers have to deal with, because the perception will determine how people behave.

Understanding the emotional factors that contribute to those perceptions is basic to any risk communication program.

The points above are that the perception of risk is not ‘rational’. It is not just based on the facts. The people managing an emergency have to understand that the way people perceive risk is not the same as how the emergency managers perceive it. To manage how people behave, managers have to see the risk the way the public sees it, and understand why people FEEL the way they do about radiological risk.

2.2 Risk perception characteristics

There are specific “feelings factors” of “risk perception factors” that make risks connected with radiation particularly frightening. You can think of these specific factors as similar to the specific scientific characteristics scientists use to describe radiation, like seiverts and alpha particles for example.

For communicators the following specific emotional factors are the key characteristics that describe the public apprehension of radiological risk, and offer insight to the communicator about public behavior.

- Nuclear and radiological risks feel more frightening to the public.
- Even when scientific facts show a risk is low, psychological characteristics play a big role in how people perceive the situation.
- These characteristics must be acknowledged in order to effectively manage public behavior.

3.0 Key characteristics

There is a number of risk perception factors widely accepted within the literature. This presentation covers some of the key factors related to the risk perception of radiation emergencies. Many of the factors can be linked together and share commonalities. For example, dread is influenced by stigma and uncertainty. A summary of the key psychological factors related to the risk of radiation emergencies that play important roles in people’s fears include:

- Media attention
- Understanding
- Familiarity
- Scientific certainty
- History / Stigma
- Onset of effects

- Reversibility
- Trust
- Availability of information
- Voluntariness
- Control
- Benefits
- Fairness of risk distribution
- Nature of risk
- Catastrophic potential
- Personification
- Personal participation
- Uncertainty
- Awareness
- Fear
- Influence on children and on the future generations

4.0 Trust

Public perceives less risk in hazards handled or assessed by experts they believe are trustworthy and credible.

Building public trust in organizations and communicators is key. It will build the foundation for “I don’t know, but I trust that you do” which will allow for an easier and safer emergency response.

More trust = influence, less trust = fear

- In the communicator
- In the organization that’s supposed to protect the public (the regulator)
- In the organization creating the risk (the radiological facility.

The bullet points specify that risk relies on a number of players/actors. If people trust the communicator, or trust the regulator that’s supposed to protect them, or they trust the company or utility operating the reactor or responsible for the radiological source, they will be less afraid of the very same risk than if they DON’T trust the communicator or the regulator or the source of the risk. The less people trust, the more they fear.

There are several things that are important for trust, some of which are listed below

- Being honest with people will encourage their trust. Admitting mistakes, even though that feels bad to you, shows you are honest and open and establishes trust, and is actually good for you in the end.

- Keeping secrets is damaging for trust. People feel they have a right to know anything that's relevant to their safety.

- You need to pay attention to how the situation feels from the public's perspective. Allow for active dialog and feedback when you can, though this is hard during the acute first stages of an emergency. Paying sincere attention to people's feelings, and respecting their fears, even if those fears are not equal to the scientific facts about the risk, will help build trust.

- It is disrespectful to tell people how they should feel. You must respect that it's up to people to figure out for themselves how they feel. Feelings are subjective. Messages like "Be calm" or "It's safe", can feel like you're telling them how to feel, which contributes to mistrust.

- Being honest includes even when you have to tell people there is real risk. Very often communicators want to get people to calm down, and underplay the actual risk, fearful of creating fear and panic. Generally, people don't panic even when they are afraid. Even though fear may increase, the communicator's honesty will also build trust, which means people are more likely to listen to your suggestions for what to do. So being honest about risk, even when things are dangerous, means you will have more control of the human behavioral aspect of the emergency.

4.1 What influences trust?

- Caring/Empathy
- Honesty/Openness
- Commitment/Dedication
- Competence/Expertise

5.0 Media attention

A lot of media attention will increase public fear. PIOs (Public Information Officers) should maintain close relationships with the media to ensure the correct and clear information is being provided to the public.

6.0 Understanding

Clearly communicating in plain language about radiation will help to lessen public fears. PIOs (Public Information Officers) should work to explain concepts in an easily understandable way.

7.0 Familiarity

Public perceives less risk from hazards with which they are familiar.

For example, inhabitants of communities living near a nuclear power plant are likely to be familiar with the hazards involved. Radiological emergencies, however, can happen anywhere and affect people who might perceive more risk due to the unfamiliar nature of the materials involved.

8.0 Scientific certainty

Public perceives less risk from hazards where there is scientific consensus.

If the public perceives the scientific or medical community to be uncertain, there will be a tendency to favour personal or intuitive judgments of the risk.

9.0 History/ stigma

Public perceives more risk from hazards where accidents or problems have already occurred.

Past emergencies linked to nuclear and radiological materials, such as Chernobyl, Three Mile Island and Hiroshima, with the catastrophic consequences that are associated with them, will increase public perception of radiation risks.

10.0 Onset of effects

Public perceives more risk from hazards which occur with little warning or that have large and immediate effects.

11.0 Reversibility

Public perceives more risk from hazards whose effects are not reversible.

12.0 Availability of information

Public perceives less risk in hazards for which they have sufficient and authoritative information

Transparency of information coming from authorities plays a key role in lessening the public's perception of a risk.

13.0 Voluntariness

Voluntarily having an x-ray does not cause as much fear as a leak of radioactive material contaminating the local water supply. The public has no choice over the latter situation.

14.0 Control

The more people feel they have some sense of control over what is happening to them, the less afraid they will be.

Give people something they can do during an emergency, even if it is just a way for them to get more information.

Tell people what they can do; for example related to sheltering, evacuating or taking iodine pills. Tell people how they can get more information. This is important because it will give people a sense of control, and that helps them think more clearly and less emotionally, which will give emergency managers more control over public behavior.

15.0 Fairness of risk distribution

People are less afraid of a risk if the distribution of costs and benefits is fair. For example, living near a nuclear power plant creates jobs to a community, which helps to counter-balance the perceived risks of nuclear accidents.

When you choose to take risk, you are doing so because there is some reason, some benefit. People who willingly accept exposure to medical radiation, for example, are willing to accept that risk because of the potential benefit.

16.0 Nature of risk

Natural events generally cause a lesser perception of risk than human activities.

17.0 Catastrophic potential

The actual or potential number of victims can influence risk perception.

18.0 Personal participation

There is likely to be less perception of risk for someone watching about an accident on the television far away, than for the people directly affected by it.

19.0 Awareness

People living near a nuclear facility are more likely to be aware of the risks, for example

20.0 Fear

Public perceives more risk from hazards whose consequences evoke strong fears.

This factor is very important for people's fears of radiation. Even if the actual risk is low, the fear will still be high because of the pain and suffering that may occur.

21.0 Children and future generations

Public perceives more risk in hazards that affect children and future generations

People tend to be more disturbed by activities that expose children to risk. Because the main concern of parents is the health of their children, parents can develop an incorrect perception of radiation risks. They may link later insignificant deviations in their child's development to radiation, even when experts determine that an event presents no health risks. People also tend to be disturbed by risks that may affect future generations.

22.0 Conclusion

The public and emergency managers think about risk differently, Non-expert risk perception is a matter of emotion more than rational factual thinking; these feelings are real and must be taken into account by emergency managers and PIOs (Public Information Officers).

Understanding emotional risk perception factors in a nuclear or radiological emergency helps communicators to express empathy and respect .This will help build trust

Building trust gives emergency responders more influence on how the public behaves, which is a vital part of maximizing public health and safety in preparing for, responding to, and recovering from nuclear and radiological emergencies.