Risk perception: The role of risk format and affect in medical imaging.

Summary of results

Thank you for participating in our study (named above). We have prepared this summary of the study for your information. If you would like more information please contact Haryana Dhillon, whose contact details are listed above.

Background:
Several studies have suggested that showing risk information in visual formats (graphs or icon arrays) is easier for people to interpret and understand than presenting this information as numbers (Galesic, Garcia-Retamero & Gigerenzer, 2009). When shown icon arrays or vertical bar graphs people recall information more accurately. Visual risk formats also influence the decisions people make about their health and medical treatments. Particular visual formats (such as icon arrays) can decrease how much people perceive a health intervention as risky. Presenting information about risks associated with Computed Tomography (CT) scans visually, rather than numerically, may increase people’s knowledge and help them to contextualise risk information.

- Other work suggests that dread of radiation may affect the way in which individuals comprehend information about procedures that use ionising radiation, such as CT scans. One suggestion is that (e.g. Slovic, Finucane, Peters & MacGregor, 2002) people use an affect heuristic to make judgements. Images in people’s minds are consciously or unconsciously associated with positive and negative feelings, such as happiness or dread. When individuals make a decision, they consult an ‘affect pool’ which contains all the positive and negative markers associated with images. Research findings have supported this theory and risk perception and behaviour has been found to be influenced by affect.

Aims of the Study:
In line with research summarised above, the current study aimed to:

1. Investigate the role of risk presentation format on knowledge, intentions, anxiety and concern in the context of CT Scans.
2. Investigate the role of affective reactions towards radiation on knowledge, intentions, anxiety and concern in the context of CT Scans.
Study Procedure:
This study involved three steps:
1. Participants completed a series of questionnaires. These measured:
   - Level of dread toward radiation.
   - Knowledge of, and behavioural intentions toward, CT scanning.
   - Anxiety.
2. Participants were then presented with information about the risks associated with CT Scans in one of two formats:
   - A standard information format presenting risk information using numerical presentations; or
   - A visual information format presenting risk information in visual formats – using an icon array and a vertical bar graph.
3. Participant’s knowledge of, and behavioural intentions regarding, CT scanning, and anxiety was assessed again. They were also asked to state their level of concern having read the information about the risks associated with CT scanning.

Key Findings:
- Knowledge of the risks associated with CT scans increased following the provision of CT risk information.
- However, intentions, anxiety and concern did not change following the provision of CT risk information.
- There was no difference in knowledge, intentions, anxiety and concern between individual who received the standard information format and those who received the visual information format.
- Affect did not influence knowledge, intentions or anxiety. However, people with higher affective dread of radiation did experience greater increases in concern following the provision of CT risk information.

Conclusion:
People referred for CT scans should be informed about the procedure and its risks. If this is done clearly, it is unlikely that people will avoid a CT scan that is medically necessary.

References: