What do Patients Really Know or Want to Know about X-rays?

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Introduction

In the Western World, there is a strong movement towards including patients in all aspects of decisions on their care and treatment, including investigations. The General Medical Council has published a document ‘Seeking patients’ consent: the ethical considerations’ (1). This states ‘Successful relationships between doctors and patients depend on trust. Patients must be given sufficient information, in a way that they can understand, in order to enable them to exercise their right to make informed decisions about their care.’ The Royal College of Radiologists has since issued ‘Guidance on consent by patients to examination or treatment in Departments of Clinical Radiology’. (2) Consumer’s associations are championing the cause of the patient. (3). However Taylor (4) has challenged the sweeping statements made, commenting that an appreciable body of patients is more than happy to offload the decision about their treatment to the doctor. It is common to be told ‘You’re the doctor, I trust you to do what’s best.’ While it is important for patients to be given a full explanation of complex procedures with the attendant risks and benefits explained, do patients really need to be told about dose? Indeed if they are told, are they in a position to understand such information? Do patients really want to know much about their x-rays at all, other than the result?

Method

To try and answer these and other questions about patients’ experiences in x-ray departments, I carried out a small pilot study. 31 out patients attending mainly for barium enema or lumbar spine examinations were questioned using a questionnaire. (Appendix 1). They were asked about their knowledge of radiation, including background, the information given to them prior to attendance and just what they wanted in the way of information about their examination. Figure 1 gives the sex and age range.

Figure 1.
Results and Discussion

Figure 2

74% of patients were not told anything by their doctors about the procedure for which they were being sent. Of the 26% who were, they were only told about why they needed the examination, not anything at all about the side effects, risks or radiation dose.

Only 6% of patients considered they should not be told why they were being sent for an x-ray, but 77% did want to know about possible side effects. Surprisingly, 39% wanted to know about the possible radiation effects. These were mainly older men and younger women.

Patients were split as to who should tell them about the procedures, with 55% wanting their own doctor and 45% wanted the hospital doctor, but 68% wanted all this information at the time they were told they needed a procedure. (Only 26% actually did receive any information at this time). This will lead to difficulty as the vast majority of general practitioners, and indeed hospital doctors, do not have much knowledge of radiological procedures and thus are unable to explain properly the various risks and benefits of different tests, let alone put the risks of ionising radiation in proper perspective.

If patients are to be told about the risks at the time of appointment, then there will need to be a major initiative to educate referring doctors. The National Radiological Protection Board in the UK is working with the Royal College of Radiologists to prepare a leaflet on the benefits and risks of medical radiation. It is intended this will be available on the Internet, so that patients, GPs and indeed any doctors can download it for themselves. 39% thought they should be told about the radiation risk. 68% wanted to be told. There was no relationship between these groups. 23% claimed they would understand the radiation dose if told, but half of these had never heard of radon. Overall, 58% had heard of radon. 60% of those who had heard of radon were able to indicate where it could be found.

Knowledge of radiation risks was patchy, with 45% being able to give any response. “Pregnancy” was a common cause of radiation! Interestingly 81% did know it was safer to have a chest x-ray than a sunbed.
Sample Procedures

Questions on knowledge of procedures using ionising radiation revealed a worrying trend in that an amazingly high number of both men and women thought MR and ultrasound procedures used ionising radiation. Just as worrying was the percentage not knowing that ionising radiation was used in CT. (Figure 3)

Knowledge of background radiation was poor, especially in women, with only 26% having even heard of background radiation. 42% of men knew the term. As background radiation is often used as a means of expressing radiation risk, this is obviously not a useful comparison and other comparators will be needed. Knowledge of when one can be exposed to radiation is also patchy, with no one getting all aspects correct. (Figure 4)
The UK Chief Medical Officer of Health discussed the question of risk communication in his 1995 report on the state of public health and also in his paper Cancer: science and society and the communication of risk (5). He attempted to use terms such as high, moderate, low with regards to risk, giving examples. I am not convinced this language is understood by most of the population, as people’s perception of risk varies according to life experience.

The Société Française de Radioprotection has produced an excellent booklet ‘La Radioactivité Naturelle’ which has been adopted by the public at large. (6) This sort of publication would go a long way to further knowledge of radiation, using as it does excellent graphics and cartoons mixed well with the scientific information. Lakey in his address to the Health Physics Society as the G. William Morgan Lecturer in 1997 (7) discussed informing the public about radiation. While he mainly addressed nuclear radiation, his remarks about the messenger are as apt in the medical world. I have on previous occasions stated that the messenger must be knowledgeable, be appropriately dressed, gain the confidence of the patient and be able to ensure that the patient receives the message in terms he or she can understand and relate. (8,9)

Conclusion

This small study shows that there is still a need for education, not only of medical staff, but also patients and the public. Means will need to be found to improve communication between doctors and their patients.

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References


Appendix 1

Questionnaire on Radiation Awareness

In this day and age, patients are entitled to expect to be fully informed about their health care. This includes the concept of ‘fully informed consent’ to any procedure that may be advised by their doctor or other
health care professional.

In the Xray Department, many of the procedures (tests) that are carried out involve the use of ionising radiation. The purpose of this questionnaire is to try to discover what patients know about x-rays, what they want to know about x-rays, indeed if they want to know about x-rays at all.

Would you please complete Part A of this form before your xray and Part B afterwards. Thank you for your cooperation.

PART A

1. What xray are you having? Circle one only
   - Chest
   - Lumbar Spine
   - Barium enema
   - CT chest

2. How old are you? Circle one only
   - under 20
   - 20 - 40
   - 40 - 60
   - over 60
   - Male
   - Female

3. When you were told you had to have this xray, did your doctor, or the doctor at the clinic, tell you anything about the xray? YES NO
   If NO, go to question 5.

4. If you were told anything, did he or she tell you:
   a. why you had to have this xray? YES NO
   b. any side effects or risks with the xray? YES NO
   c. anything about the radiation dose? YES NO

5. Do you think xrays might be harmful? YES NO

6. Do you believe Xray Departments, and other medical radiations, cause 14% of all radiation? YES NO

7. If you answered NO, do you think Xray Departments, etc., cause less? YES NO

8. Do you believe Nuclear Power Stations cause 14% of all radiation? YES NO

9. If you answered NO, do you think Nuclear Power Stations cause less? YES NO

10. Do you think you should be told about why you should have this xray? YES NO

11. Do you think you should be told about any side effects or risks? YES NO

12. Do you think you should be told about the radiation dose? YES NO

13. Who do you think should tell you about these matters?
   a. your own doctor? YES NO
   b. the doctor who sent you for the xray if he/she was not your own doctor? YES NO
   c. the doctor or staff in the xray department? YES NO
14. When do you think you should be told?
   a. when you are first told you need the xray? YES NO
   b. when your appointment is made? YES NO
   c. when you arrive in the xray department? YES NO

15. Do you actually want to be told about why you need the xray at all? YES NO

16. Do you want to be told about any possible risks? YES NO

17. Do you want to be told about any possible radiation risks? YES NO

18. Have you ever heard of the term ‘background radiation’ or ‘natural radiation’? YES NO

19. Can you write down any risks of xrays?
   ______________________________________________________________
   ______________________________________________________________
   ______________________________________________________________

20. If you were told the radiation dose, would you understand it? YES NO

21. Have you ever heard of ‘radon gas’? YES NO

22. Radon gas can be found:
   a. in my home? YES NO
   b. in my place of work? YES NO
   c. in the hospital? YES NO

23. Who, if anyone, has told you about radiation?________________________

24. Where, if anywhere, have you read about radiation?___________________

25. If you are female, has anyone asked you if you are or might be pregnant? YES NO

26. If you answered YES to Q25, who asked you?________________________

27. If you answered YES to Q25, when were you asked___________________

28. Do you think it is safer to have a sun bed for 30 minutes than to have a chest xray? YES NO

29. Here is a list of tests done in the xray department. Please say which tests use xrays.
   Pelvis YES NO
   MR head YES NO
   Hand YES NO
   CT chest YES NO
   Barium Meal YES NO
   Ultrasound abdomen YES NO

30. I can get exposed to radiation:
   a. when flying in an aeroplane? YES NO
   b. on the beach, sun bathing? YES NO
   c. walking in the hills? YES NO
31. Here are some common risks. Please put them in order of danger of causing death. [1 = highest; 8 = lowest]

- Cycling
- Driving a car
- Working down a mine
- Chest Xray
- Riding a horse
- Working in a fishing boat
- Smoking cigarettes
- Flying in an aeroplane

PART B

Well now you have had your Xray.

32. Do you want to know how much radiation you had? YES NO

33. Was the xray test much as you expected? YES NO
Or was it worse? YES NO
Or was it not as bad? YES NO

34. Is there anything you would like to have known about your test before you had the xray? ____________________________________________

Thank you for completing this questionnaire.