Reviewer's report

Title: Successful implementation of new technologies in nursing care: a questionnaire survey among nurse-users

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Reviewer: Jos Aarts

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I read the paper with interest, but to be honest, I feel uneasy about the contents. To start with, I do not contest the way the survey was carried out and the results analyzed. I am especially concerned about the underpinnings of the research. First, the very notion of innovation. I read the paper as trying to find out how a group of professionals perceive the adoption of a new technology invented by someone else. It is basically about an 'object' that by itself is not questioned. Rogers talks about the diffusion of innovations, not about the process of innovation itself. And if you talk about diffusion you come close to implementation. Characteristics of implementation are: understanding, certainty, predictability, discipline, conservation, reliability (see e.g. Rotman Magazine 2002; Spring-Summer issue, pp. 6-11, University of Toronto). The question is then whether implementation is similar to innovation. The second issue is the nature of technology. Rogers considers technology as some sort of a black box with properties that are immutable. Modern insights (sociotechnical thinking, see e.g. actor-network theory) stipulate that technology, people and organizational context are closely intertwined. Adopting technology means reflection on how work practices can and will change. That can very strongly given the nature of the technology. A smart pump will have a different impact than an electronic health record (EHRs). So here we see that different technologies are lumped together that in my view merit different ways of inquiring. In a way it is comparison of apples and oranges. Nurses do have different roles with respect to technology. In the case of a smart pump they are important users with oversight from pharmacy. In the case of EHRs they are just one of large group of professional users. The way doctors will use EHRs impacts what nurses can and will do. In my view therefore the design of questionnaires about EHRs would have been different than those for examining a device. Talking about determinants related to innovation suggests a very deterministic pattern of thinking. The authors claim that the quality of the questionnaires was ensured by the fact that they are experts in the field of nursing care. But experts in the field health IT and the technological impact on people and organizations were clearly not present. Rogers theory of diffusion of innovation indeed suggests that characteristics of adopters can be identified to decide whether a technology will be successfully adopted. The list of references also suggest old and questionable theories about technology adoption have been used (especially Lee). The authors ignore a wealth of scholarly studies about the impact of (information) technologies on work processes, workflow, collaboration, etc. The authors
conclude that users should be more involved. But crucial are the questions how that should happen and whether it is possible given the fact that specific skills and knowledge is required. It is a known fact that users are not well able to articulate their needs, let alone their future needs (see e.g. the studies by Lucy Suchman). In general the conclusions are quite bland, they look like an open door and can be found in many health informatics and information system journal papers. In summary I have a problem with the underlying philosophy of the study. It is very well possible that another reviewer thinks differently.

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare that I have no competing interests