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

Reviewer's report:

As I stated in my previous review I found the paper interesting to read. However, some of my concerns have not been taken away. The fundamental problem is how to interpret the findings of the study. The acceptance of technology is often dependent on contextual factors. These factors are hard to identify in a large-scale survey. The challenge is then how to relate the findings to the results of other quantitative and qualitative studies of the acceptance of health technologies (and health information technology, which is my field of expertise). A survey like this is important to identify areas that warrant further research, or might place other studies of technology acceptance in a wider perspective. An example how a survey might be misleading was our finding that doctors complained a lot about unnecessary alerts that made an electronic prescribing system in their view useless. When the doctors were asked which alerts could be switched off, they almost unanimously reported that no alerts could be switched off, because it helped warning their less experienced colleagues. A simple question of acceptance of electronic prescribing turned out to be very multi-layered. This uneasiness becomes visible when the authors discuss a few examples in page 9 and further. An electronic communication system saved considerable time because it made telephone calls unnecessary. How often does this actually happen? And could telephoning a lab result also have a meaning to tell the nurse to be observant of a particular patient problem? The other example of nurses using hand-held computers can be problematized as well. It can be argued that especially tablets are very convenient to collect data at the point of care. And collecting data at point of care is reported as one of the advantages of health IT. An example can therefore easily be problematized. I immediately agree that nurses will not use dysfunctional technology. So, if nurses report infusion pumps with a missing essential function, it begs the question what function then was missing. In health information technology a clear missing function is very rarely the case. In most cases it is a contingency of factors that might make nurses unhappy, for example, an ill-designed user interface in combination with a wealth of patient data (e.g. lab results). It helps when the author offer references for their examples, so that the reader can verify the claims or put them in perspective. The reality is that technology with all its shortcomings will be accepted, but workarounds arise or are often shifted to make work with technology doable. It is placing the results of the survey in this perspective, with appropriate references to studies, that would make this paper really interesting with suggestions what research into the acceptance of technology is necessary.
In the next section I will address both textual and content issues.

Page 7, “in which they”, better: “in which the authors”

Page 9, “lab scores”, better: “lab results”.

Page 9, “for themselves”, a tautology, and in contradiction with the statement on page 10 about the relevance for patient care.

Page 13, “dysfunctional” needs to be problematized. An infusion pump is device that interacts directly with patient and therefore subject to regulatory approval. If an incident occurs then it should be reported directly to the authorities. “Dysfunctional” can also be an emergent property. Initially it may not be seen in a testing or piloting period, but emerge as the technology is being used more widely. In such a case reporting may be a better strategy.

Page 13, “help-desk or support system (24/7 help-at-the-elbow)” is indeed an accepted strategy to enhance acceptance and has been widely reported in the literature.

Page 13, “a carefully chosen strategy”: what do the authors envision here?

Page 14, “nursing staff should be involved”: this is a mantra in any process of technology implementation. The problem is not that users are not being involved, but how they are involved. For example, users are very bad at articulating requirements, which technology vendors ask them to do (“tell us what you need”). It is often better to start with identifying problems that may require a technological solution. The problem of user involvement is definitely not overlooked by scientists; the literature points to the contrary. User involvement is also a concept that is problematized in the scientific literature. Time and budget constraints limit vendors to ask users for specifications and put up key-user groups and make them then throw the application over the wall. Appropriate user involvement is not a problem of omission, but of commission. Vendors know perfectly well that user involvement is crucial for technology acceptance.

At the end I think that the study should be published, because it offers valuable insights how a large group of users perceive new technologies. But the findings should be placed in perspective because a large number of studies have reported on the various conclusions of the authors and in many cases the conclusions have been problematized. So it is important to state what this study tells and what it is telling not.

**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.