Evidence Based Library and Information Practice

Evidence Summary

Nurses Need Training and Policies to Address Barriers to Use of Mobile Devices and Apps for Direct Patient Care in Hospital Settings

A Review of:

Giles-Smith, L., Spencer, A., Shaw, C., Porter, C., & Lobchuk, M. (2017). A study of the impact of an educational intervention on nurse attitudes and behaviours toward mobile device and application use in hospital settings. *Journal of the Canadian Health Libraries Association/Journal de l'Association des bibliothèques de la santé du Canada, 38*(1), 12-29. doi: 10.5596/c17-003

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Abstract

Objective - To describe nurses' usage of and attitudes toward mobile devices and apps and assess the impact of an educational intervention by hospital librarians and educators

Design - Descriptive, cross-sectional survey, one-group pre- and post-test, and post-intervention focus group

Setting - One 251-bed community hospital and one 554-bed tertiary care hospital in Winnipeg, Canada

Subjects - 348 inpatient medical and surgical nurses

Methods – The study had two phases. In Phase I, respondents completed a survey of 21 fixed and open-ended questions offered online or in print to a convenience sample from the community hospital and a random sample of medical and surgical units from the tertiary hospital. The survey collected demographic data and included questions about mobile devices and apps covering current awareness of hospital policy, ownership, internet access, usage patterns, concerns, and attitudes toward their use for direct patient care. It also included

information to recruit volunteers for Phase II. In Phase II, participants attended four 30-minute educational sessions facilitated by the researchers. The first session addressed the regional health authority's policies, Personal Health Information Act, and infection control practices. Subsequent sessions covered relevance, features, and training exercises for one or more selected apps. Participants installed five free or low-cost apps, which were chosen by the librarians and nurse educators, on their mobile devices: Medscape, Lab Tests Online, Lexicomp, Twitter, and Evernote. Participants were then given a two-month period to use the apps for patient care. Afterward, they completed the same survey from Phase I and their pre- and post-intervention responses were matched for comparative analysis. Phase II concluded with a one-hour audio-recorded focus group using ten open-ended questions to gather feedback on the impact of the educational sessions.

Main Results – 94 nurses completed the Phase I survey for a response rate of 27%. Although 89 respondents reported owning a mobile device, less than half used them for patient care. Just under half the respondents were unsure if they were allowed to use mobile devices at work and a similar number answered that devices were not allowed. Two-thirds of respondents were unsure whether any institutional policies existed regarding mobile device use. Of the 16 participants that volunteered for Phase II, 14 completed the post-intervention survey and 6 attended the focus group. In comparison to the Phase I survey, post-intervention survey responses showed more awareness of institutional policies and increased concern about mobile devices causing distraction. In the Phase I survey, just over half of the nurses expressed a desire to use mobile devices in patient care.

Four themes emerged from the survey's qualitative responses in Phase I:

> (1) policy: nurses were unsure of institutional policy or experienced either disapproval or bans on mobile device use from management;
> (2) barriers to use, namely cost, potential damage to or loss of devices, infection control, and lack of familiarity with technology;
> (3) patient perceptions, including generational differences with younger patients seen as more accepting than older patients; and
> (4) nurse perceptions: most valued access to information but expressed concerns about distraction, undermining of professionalism, and use of technology.

Qualitative responses in the Phase II survey and focus group also revealed four themes:

> (1) barriers: participants did not cite loss of device or infection control as concerns as in Phase I;
> (2) patient acceptance and non-acceptance: education and familiarity with mobile devices were noted as positive influential factors;
> (3) information need, accessibility, and convenience: nurses reported needing easy-to-use apps, particularly Lexicomp, and appreciated improved access to information; and
> (4) nurse behaviour and attitude: participants reported more time would be needed for changes to occur in these areas.

Conclusion – The study found that although most nurses own mobile devices and express strong interest in using them for patient care, there are significant barriers including lack of clarity about institutional policies and concerns about infection control, risk of damage to personal devices, costs, lack of experience with the technology, distraction, and negative patient perceptions. To address these concerns, the authors recommend that hospital librarians and educators work together to offer training and advocate for improved communication and policies regarding use of mobile devices in hospital settings. Moreover, the study affirmed the benefits of using mobile devices and apps to support evidence-based practice, for example by providing access to reliable drug information. The authors conclude that additional research is needed to inform policy

and develop strategies that hospital librarians and nurse educators can use to promote the most effective application of mobile technologies for patient care.

Commentary

As noted by the authors, the study contributes to the growing literature addressing the use of mobile technologies in the nursing workplace. Another recent and larger study of registered nurses in hospitals in the United States drew similar results, including concerns about distraction, safety, and policy as well as generational differences in the perception and use of mobile devices (McBride & LeVasseur, 2017). The study thus affirms many of the findings of previous and more recent studies on the topic (McBride & LeVasseur, 2017; Grabowsky, 2015; Planitz, Sanderson, Kipps, & Driver, 2013).

The study was evaluated using Koufogiannakis, Booth, and Brettle's (2006) ReLIANT instrument. Several flaws were found in the areas of study design and educational context.

In terms of study design, the study's objectives, methods, and instruments are well explained but as the authors recognize in the Discussion section, there are significant limitations due to the sample size and method that compromise its validity and introduce the risk of bias. The use of convenience sampling at the community hospital, low response rate in Phase I, and small sample size in Phase II mean the results lack external validity and cannot be generalized to the broader population or beyond. This is reinforced by the composition of the Phase I respondents; almost half (48%) identified as having less than five years of experience and a significant portion (35%) were aged 24 to 34, which suggests the sample was not representative of the target population. Moreover, a calculation of the margin of error was not provided. Lastly, while inclusion of the research instruments in the appendices is helpful, the authors do not indicate if these were piloted or validated.

Additional flaws are found in the study's educational context. Although the content of the educational sessions is clearly outlined, the study lacks description of the teaching method and learning objectives against which the intervention could have been evaluated. While the objective of the study suggests the intervention aimed to invoke affective and behavioural changes, there is no explanation of how or if it purposively intended to do so through instructional design. The study consequently missed an opportunity to extend its applicability into the realm of nursing education curriculum and nursing competencies maintained by professional associations, which would be relevant for librarians working in higher education.

The study's conclusions are most useful for librarians and nurse educators and managers working in hospital settings. Specifically, its description of the professional concerns, behaviours, and barriers to mobile device use encountered by nurses can be used to direct and inform policy and training interventions in similar contexts. However, given the deficiencies found in the study design, the study's findings should be corroborated by other sources of published evidence to affirm their external validity and relevance for practice.

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