

SINI Track : "Show Me the Delta": Impact on Patient Outcomes, Professional Practice, and Organizational Processes

The utilization of reflective journals to explore nurses' experience using mobile information technology to access and use research evidence

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Journal Sub-component

- This project was a sub-component of a larger study evaluating the potential of PDAs, Tablet PCs, and e-Health resources to improve nurses' access to information resources and to provide clinical decision support to uphold quality patient care.



Evaluation of Mobile Information Technology to Improve Nurses' Access to and Use of Research Evidence (EMIT)

RESEARCH TEAM

Principal Investigator

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Co-investigators

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Background

- Nurses working in rural settings often do not have timely or appropriate access to information resources.
- Nurses working in correctional/community settings work in relative isolation.
- Information technology can help promote safe, high quality care through tools that improve communication, make knowledge more accessible, and provide clinical decision support.

EMIT Project

The evaluation component of the Nursing PDA initiative involves several components:

- Survey (before and after using handheld devices)
- Resource usage review,
- Interview
- Simulated evaluation exercise
- Reflective Journal

Information Resources

- RNAO BPGs
- McMaster University Nursing PLUS
- Lexi or Pepid

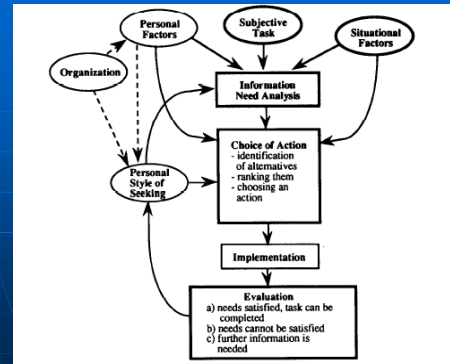


Nurses have access to information resources via PDAs or Personal Tablet computers

Purpose

- To explore the nurses' perception of their use of PDA or Tablet PC supported information resources and the potential patient care outcomes.
- To examine methodological issues related to the use of reflective journaling as a data collection tool
 - To present findings

Theoretical Framework



Bystrom and Jarvelin's (1995)

Journals as Methodology

- Journals are within the category of semi-structured or unstructured self-report techniques for data collection (Polit & Hungler, 1991)
- Journals are used to explore a wide variety of study questions within a range of disciplines (i.e. Social sciences, Anthropology & Health sciences) (Ross, Rideout & Carson, 1994).

Definition of Journal Diary

- A document created by an individual who maintained a regular, personal and contemporaneous record. (Alaszewski, 2006, p.1-2)

Why use a structured Journal Methodology?

1. Validity
2. Process, change and related causal issues
3. Effects of daily events (over time)
4. Information gathered across multiple situations
5. Reduction in recall error in self-reports

Journal Advantages

- Flexible
- Variety of forms
- Combined with other methods
- Substitute for observation
- Hard-to-reach groups
- Hard-to-observe behaviours
- Memory problems
- Low recall error
- Natural format
- In context
- Specific information



Journal Limitations

- Cost
- Selection bias
- Inaccuracies
- Reliant on participants
- Detail and frequency of entries
- Large amount of data
- Sensitization Effects
- Refusal Rate, Attrition and Missing Data
- Assessments across time
- Variations in mood

Journal Participants

- The nurses were asked to document their experience using the PDA or Tablet PC supported information resources
- The journal entries were semi-structured
- Nurses were asked to complete the journal 3 times over 16 weeks
- Content analysis: coding guided by Byström and Järvelin's theoretical model.

Journal Participants

Participants included RNs & RPNs from:

- Homecare organizations
- Acute care hospitals
- Primary Care
- Long Term Care facilities



- Time 1 Journal completed = 16
- Time 2 Journal completed = 11
- Time 3 Journal completed = 5

Journal Participants' demographics

Gender

- 12.5% Male
- 87.5% Female

Employment status

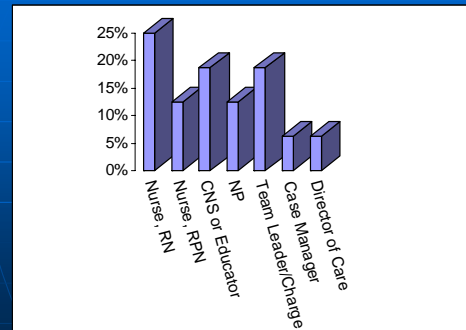
- 87.5% Full time
- 6.2% Part time
- 6.2% Casual



Education

- 50% Diploma
- 38% Bachelors degree (or in progress)
- 12% Masters degree (or in progress)

Current position in organization



Structure of the Journal

- Device
- Task
- Issue/ question that prompted you to search
- PDA or Tablet PC experience
- Situational factors that affected use
- Importance it to find information
- Electronic resources
- Thoughts throughout search
- What / who helped search
- Success in search
- Information on the electronic resource applicable
- Approach change
- Value to have the PDA / Tablet PC
- Time spent using electronic resource

Results



- Nurses' reflective journaling

Brand Models as Reported by participants

- Blackberry
- Palm Treo
- HP-iPAQ
- Fujitsu Lifebook
- Saharas PC Tablet
- Symbol
- Motion C5



Perceived value of the PDA/Tablet PC at the point of care

- Access to Information at point of care;
- Documenting care (accuracy and consistency);
- Convenient to use at point of care;
- Demonstrate evidence to others at point of care;
- Multi-task using resources on device;
- Device portability;
- Quick to find information at point of care;
- Reliable resources found on device; and
- Saves time finding resources on device.
- No value at point of care

Nurses' estimate of the time spent using electronic resource for search

- Nurses time spent using the electronic resources for a search increased on average from Time 1 (20 minutes, n=16) to Time 2 (50 minutes, n=12).
- All of the Time 3 (n=5) participants used the device to search for electronic resources.



What or who helped the nurse during the search

- Other colleagues,
- Internal help function,
- Nursing student,
- Posted instructions,
- Basic trial and error.
- However, some of the respondents indicated that no help was available to them.



Situational factors that affected nurses' use of the PDA or Tablet PC

Strengths Example

very busy day with several ill residents. PDA availability made the search required for this question much more efficient. Able to discuss with nurse while researching.

Challenge Example

"I would use the device even more often if the battery power wasn't such a limiting factor. If I leave the Tablet off, it takes too long to load up, but if I leave it on, it only lasts half a day!"

Electronic Resources more applicable, useful or of value to the nurse

- Consistent working wireless access;
- Canadian resources (i.e. medications & lab values);
- Lighter devices;
- Access to online textbooks;
- Batteries that stores more energy;
- Readable information for clients; and
- Develop skill levels to use device.

**Access to hospital policies*

*"Would like if I could email my notes to our electronic charts- this is not available to me yet"

**A second battery pack!*

**More scope of information available, i.e. textbook online (Fundamentals of Nursing)*

*"Clients usually cannot read/write above grade 3-4 level sites are too complicated for them"

Sector specific highlights

- **Homecare sector**
 - Needed more battery power and remote wireless access to use devices.
 - Must feel like they are in a safe environment in order to use the device.
 - Wanted to use electronic health records on the device.
- **Acute care sector**
 - Have access to hospital specific information (i.e. policies) via device.
- **Long term care sector**
 - Used the device, most prominently, to access medication information.

Conclusion

- Reflective journaling is a valuable data collection tool.
 - Uncovering nurses' understanding of perceived information seeking needs when using a PDA or Tablet PC.



THANK YOU

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