An iterative methodology for developing national recommendations for nursing informatics curricula

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Introduction

- Increasing adoption of health IT
- Advanced IT competencies in nursing gain more and more importance (e.g. for utilising electronic tools for documentation, telemedicine) (Schüler et al. 2013)
- Nursing education in health IT skills varies from country to country (Hübner 2011)

International recommendations for core competencies
  - are often very generic
  - do not always fit the specific needs in a particular country or region

Aim of the study: proposing a methodology for developing national recommendations and implementing this methodology for developing recommendations in nursing informatics for Austria, Germany and Switzerland
Methods
Triple iterative approach

**Step 1:**
Identification of relevant competencies in national resources (Austria, Germany, Switzerland)

Competency based approach for the education of physicians (R. Röhrig et al. 2013) + internal papers for continuing education in medicine

Annotation by fourteen nursing informatics experts (members of the nursing informatics working group of the German Association for Medical Informatics, Biometry and Epidemiology GMDS)

D0: Informatics core competencies for nurses
1. Principles of nursing informatics
2. Applied computer sciences
3. Data protection and security
4. Nursing documentation
5. ICT systems relevant to nursing
6. Telematics and eHealth
7. Information management in research
8. Information management in teaching
9. Decision support
10. Image and bio-signal processing
11. Quality assurance and management
12. Biostatistics
13. Project and process management
14. Resource planning and logistics
15. Information and knowledge management in patient care
Step 2: Comparison and enrichment based on international literature

- Australian Health Informatics Education Council (AHIEC), Health Informatics Scope, Careers and Competencies Version 1.9, Australian Health Informatics Education Council, 2011.
- Canada’s Health Informatics Association (COACH), Health Informatics Professional Core Competencies v3.0, Canada’s Health Informatics Association, National Office, Toronto, 2012.
Methods
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Step 3a: Validation by expert consultation

- Online-survey in the three countries
- Rate the relevance [0...100%] of the 24 competencies for three roles/domains:
  - Nursing management
  - IT management
  - Quality management
- 120 experts (64 from Germany, 36 from Austria, 20 from Switzerland) from academia, healthcare providers, IT vendors
- 28th April to 22nd May 2015

Step 3b: Validation of the results of step 3a (R0) by two focus groups

- GMDS Annual Conference 2015 in Krefeld, Germany (23 participants)
- European Nursing Informatics – ENI Conference 2015 in Hall, Austria (25 participants)

- Confirmation of relevance und completeness of the core competencies
- Additional domains: clinical nursing and inter-professional coordination of care
  - Second survey (23.11.-31.12.2015) with the same 120 experts
## Results

Return rate: 87 respectively 81 from 120 experts

**Top 6 core competencies sorted by average in all three countries: R1**

<table>
<thead>
<tr>
<th>Role/domain</th>
<th>Top 1</th>
<th>Top 2</th>
<th>Top 3</th>
<th>Top 4</th>
<th>Top 5</th>
<th>Top 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nursing management [n=87]</td>
<td>Nursing documentation</td>
<td>Process management</td>
<td>Human resource management</td>
<td>Principles of management</td>
<td>Project management</td>
<td>Quality management</td>
</tr>
<tr>
<td>IT management [n=87]</td>
<td>Principles of nursing informatics</td>
<td>Data protection and security</td>
<td>Information and communication systems</td>
<td>Project management</td>
<td>Applied computer science</td>
<td>eHealth, telematics, telehealth</td>
</tr>
<tr>
<td>Quality management [n=87]</td>
<td>Quality management</td>
<td>Process management</td>
<td>Project management</td>
<td>Data protection and security</td>
<td>Nursing documentation</td>
<td>Information and knowledge mgmt. in patient care</td>
</tr>
<tr>
<td>Clinical nursing [n=87]</td>
<td>Nursing documentation</td>
<td>Data protection and security</td>
<td>Information and knowledge mgmt. in patient care</td>
<td>Ethics and IT</td>
<td>Quality management</td>
<td>Information and communication systems</td>
</tr>
<tr>
<td>Inter-professional coordination of care [n=81]</td>
<td>Nursing documentation</td>
<td>Data protection and security</td>
<td>Process management</td>
<td>Information and knowledge mgmt. in patient care</td>
<td>Quality management</td>
<td>Project management</td>
</tr>
</tbody>
</table>
Discussion

- This approach enhanced the validity of its results by
  - applying both quantitative and qualitative methods
  - iterating single steps
- Recommendations are tailored to the country specific needs, they are validated and therefore promise good adoption
- The results did not distinguish between the three countries
- The results were included into the TIGER international competency synthesis project (Hübner et al. 2016)
Conclusion

- Feasibility of the proposed methodology for developing informatics core competencies, which are literature based and empirically valid, could be proved.
- Findings allow educators to shape nursing informatics curricula and courses:
  - that aim at a broad application of the competencies
  - with a focus on a particular role or domain
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Im Kontext des Lebenslangen Lernens

UMIT
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gmds
Deutsche Gesellschaft für Medizinische Informatik.

IGPI – Schweizerische Interessengruppe Pflegeinformatik

ÖGPI – Österreichische Gesellschaft für Pflegeinformatik
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Photos
http://nursinglink.monster.com/education/articles/8479-nursing-informatics--another-career-avenue