Whose decision is the best decision?
Clinical decision making regarding the management of pain – differences between novice, intermediate and expert nurses

Igal Zlatkin, Carmel Medical Center, Haifa, Israel

Yulia Gendler, RN, MSc, Schneider Children Medical Center of Israel
Pain management

Decision-making process

- Assessment
- Intervention
- Monitoring the effect of treatment
- Identifying the need for changes and alternative treatment.

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Better Decision Making

Education

Practical experience
Naturalistic decision making theory

Klein, 2008
Naturalistic decision making theory - limitations

- Doesn’t explain decision making strategy in totally new situation
- Doesn’t determine the time period required for decision making skills acquisition
- Doesn’t explore possible factors that may affect decision making
- Doesn’t answer the question “Why even experienced one may make bad decision?”
Nursing Expertise: From Novice to Expert (Benner, 1984)

- Novice: Has no professional experience
- Beginner: Can note recurrent meaningful situational components, but not prioritize between them
- Competent: Begins to understand actions in terms of long-range goals
- Proficient: Perceives situations as wholes, rather than in terms of aspects
- Expert: Has intuitive grasp of the situation and zeros in on the accurate region of the problem
Benner theory - questions

• What are the necessary factors for expert stage achievement?
• Is the routine work experience enough for the progress toward the expert stage?
The purpose of the study

– To identify the cognitive processes used by nurses for decision making and the factors which may influence on these processes.

– To examine the difference between novice, intermediate and expert nurses, in their decision making about post-operative pain management.
The study population

- Convenience sample
- 65 registered nurses
- Surgical wards
- 2 academic teaching medical centers of Clalit Health Service
- Informed consent of participants and approval of research committee were received
The study population

N=65

- Experienced: 38
- Intermediate: 12
- Novice: 15

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Obligated to Lead
Procedure

• The participants were divided into 3 groups:
  – Novice (experience less than 2 years)
  – Intermediate (2-5 year experience)
  – Experienced (more than 5 years experience)

• Each participant fulfilled self-assessment questionnaire and performed two tests required clinical decision making
Research tools
Research tools

1. The self-assessment questionnaire of pain management knowledge and skills
   - Designed by researchers
   - Internal consistency: Cronbach’s alpha – 0.885
   - 7 Likert scale questions (from 1 to 4)
   - Examples:
     “I think that I have a high level of knowledge and skills in pain management”
     “My colleagues often follow my advices regarding pain management”
2. Vignettes describing three common situations which require nurse's decision making
   – question about clinical decision for each vignette
   – basis of the decision for each situation (experienced colleague, intuition, former experience, guidelines)
   – rating of situation complexity by the participants (Likert scale 1 to 5)
   – vignettes were designed by the researchers and validated by expert judgment
Research tools (cont.)

3. Script concordance test evaluating charge nurses’ decision-making
   – The test was designed by the researchers and validated by expert judgement
   – The test consists of three items describing common situations that require pain management decision making
Script Concordance Test

Method of assessment for clinical data interpretation

– Examines steps used in clinical reasoning
– Case-based assessment
– “Real Life” scenarios allow uncertainty
– Same scenario for each learner
– Objective scoring instead of subjective judgment of skilled observers

Deschenes et al, 2011; Humbert et al, 2011
# SCT Test

<table>
<thead>
<tr>
<th>Clinical scenario</th>
<th>New information</th>
<th>This hypothesis becomes...</th>
</tr>
</thead>
<tbody>
<tr>
<td>If you were thinking of...</td>
<td>And then you find...</td>
<td>-2  -1  0  +1  +2</td>
</tr>
</tbody>
</table>

- 2 = rejected/ contraindicated
- 1 = less relevant/not very useful
0 = neither less nor more useful
+1 = useful
+2 = necessary

Brief description of problem/ situation

Relevant hypothesis/ intervention

New information:
- Change in patient conditions
- Laboratory result

Learner must make a decision

Deschenes et al, 2011; Humbert et al, 2011
**Example Question**

You’re caring of the 68 y.o. patient suffered from chronic back pain. You’ve got an order to start Tab.Zaldiars (Tramadol 37.5 mg/Paracetamol 325mg) X 4 / day.

<table>
<thead>
<tr>
<th>If you think of</th>
<th>And than you find...</th>
<th>The intervention will become</th>
</tr>
</thead>
<tbody>
<tr>
<td>Giving the medication</td>
<td>The patient takes Tab Tramadex OD (Tramadol) 300mg/day in last two months</td>
<td>-2 -1 0 +1 +2</td>
</tr>
</tbody>
</table>

-2 = rejected/ contraindicated  
-1 = less relevant/ not very useful  
0 = neither less nor more useful  
+1 = useful  
+2 = necessary
Do the clinical decisions chosen by the learner have concord with those of the “Reference Panel”?

- A group of experienced nursing professionals/clinical preceptors (at least 10)
- Each question score depends on the number of Reference Panel answers

Example: Scoring by 10 experts

<table>
<thead>
<tr>
<th>0 : 7 members</th>
<th>1 : 3 members</th>
<th>All other answers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 point</td>
<td>3/7 = 0.42 point</td>
<td>0 point</td>
</tr>
</tbody>
</table>

Deschenes et al, 2011; Humbert et al, 2011
Results
Results

Relationship between nursing experience and decision making basis

Vignette N1

$\chi^2 = 20.36$, $p < 0.05$
Results (cont.)

- Consistent findings in all vignettes
- Decision-making process was easier for experienced nurses ($F=3.72$, $p<.05$)
- Significant relationship between participants’ experience and self-assessment of knowledge and skills in pain management ($r=.64$, $p<.005$)
Results

Relationship between nursing experience and Script Concordance Test scores

<table>
<thead>
<tr>
<th>Experience</th>
<th>Test Score (Mean ± SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 2 years</td>
<td>10.8 ± 3.7</td>
</tr>
<tr>
<td>2-5 years</td>
<td>14.1 ± 7.3</td>
</tr>
<tr>
<td>More than 5 years</td>
<td>16.7 ± 11.3</td>
</tr>
</tbody>
</table>

Nursing experience in surgical ward

p=n.s
Results

Relationship between nursing experience, academic degree and Script Concordance Test scores

Nurses' experience in surgical ward

<table>
<thead>
<tr>
<th>Experience</th>
<th>Script Concordance Test medium score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 2 year (n=15)</td>
<td>10.8 ± 3.7</td>
</tr>
<tr>
<td>2-5 years (n=12)</td>
<td>14.1 ± 7.3</td>
</tr>
<tr>
<td>More than 5 years with academic degree (n=27)</td>
<td>21.7 ± 8.8</td>
</tr>
<tr>
<td>More than 5 years without academic degree (n=11)</td>
<td>4.4 ± 3.9</td>
</tr>
</tbody>
</table>

p < 0.05
Results

Relationship between academic degree and clinical decision making (Vignettes)

<table>
<thead>
<tr>
<th>Number of vignette</th>
<th>( \chi^2 = 14.93 ), df=6</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>( \chi^2 = 24.16 ), df=8</td>
</tr>
<tr>
<td>2</td>
<td>( \chi^2 = 21.65 ), df=10</td>
</tr>
</tbody>
</table>

* Correlation is significant at the 0.05 level (2-tailed).
** Correlation is significant at the 0.01 level (2-tailed).
Limitations

- A small and non random sample
- Most of the participants were in “experienced” group
- Most of the tools were validated by expert judgment only
- The decision making tests consisted of six items only
Conclusions

• Practical experience alone doesn’t assure the accuracy in nurses’ clinical decisions
• Academic graduation may significantly improve nurses’ decision making skills
• Importance of well-developed clinical guidelines for novice nurses
• SCT seems to be an effective tool for assessment of nurses’ clinical decisions
Further research to be conducted

• It is suggested to repeat this study with a larger population
• Examination of decision making patterns in various clinical areas (chronic wound care, diabetic patient care etc.)
• Validation of Script Concordance Test as possible replacement for multiple-choice exams
References


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THANK YOU

igalzl@gmail.com