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LONGITUDINAL ANALYSES OF NURSES EDUCATION AND ENTRY IN WORKLIFE

NEWLY GRADUATED NURSES' USE OF RESEARCH FINDINGS AND APPLICATION OF EVIDENCE-BASED PRACTICE

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Nurses' use of research

- Nurses are the largest group of healthcare practitioners, pivotal contribution to evidence-based practice.
- Little is known about the trajectory of registered nurses' use of research and application of evidence-based practice the first years of professional life.

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Work environment

- Newly graduated nurses predominantly work in hospital settings, a busy work environment.
- Job turnover of nurses high, the novice nurse might soon be 'the most experienced'.
- Newly graduated nurses face a 'reality'/transition shock'.

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The national LANE study in Sweden

Longitudinal Analyses of Nursing Education and Entry in Worklife

- Recruited from all the 26 universities providing undergraduate nursing education in Sweden
- 3 national cohorts (graduated 2002, 2004, 2006)
- Education period and first years of professional life
- Annual data collection using an extensive survey (self-administered questionnaires)
- School experiences, health, stress, worklife context, professional development

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The LANE-study

Open research intervention research on teachers' motivating styles

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Overall design

EDUCATION: 1, 2, 3

WORKLIFE: 1, 2, 3, 4, 5


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Sample description of the EX 2004 cohort

- 2,381 nursing students invited in their 2nd semester of nursing education.
- 1,702 (73%) gave informed consent,
- 1,501 (88%) entered the profession and continued to participate in the study.
- Year 5 n=1047 (61%)
- Representativeness on demographics investigated = OK


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Main Measures

- Research Utilization (single items)**
 - **Instrumental**: Direct/concrete application of research findings
 - **Conceptual**: Indirect/cognitive use of research findings
 - **Persuasive**: Research used as a political tool
- Evidence-based practice (capability beliefs and actual performance using single items and summative scale)**
 - **Formulating questions** to search research-based knowledge
 - **Using databases** to search for knowledge
 - Using **other information sources**
 - **Appraising** research reports
 - **Implementing** current knowledge
 - **Evaluating** whether clinical practice reflects current knowledge


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Instrumental research use item

- "Instrumental research use means that you use research findings (nursing or other kinds of research) in a **concrete** way in providing patient care. Instrumental RU can be based on scientific articles or recommendations in systematic literature reviews, clinical guidelines, protocols or other documents based on research findings. For example:
- Assess the risk of pressure ulcers by using the modified Norton Scale.
- Use of physiological saline instead of heparin to keep a peripheral vein catheter open.
- Use of compression treatment in the treatment of venous leg ulcers."


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Publications from the LANE study (RU/EBP)

- Ehrenberg A, Gustavsson JP, Wallin L, Bostrom A-M, Rudman A. *New Graduate Nurses' Developmental Trajectories for Capability Beliefs Concerning Core Competencies for Healthcare Professionals: A National Cohort Study on Patient-Centered Care, Teamwork, and Evidence-based Practice.* *Worldviews on Evidence-Based Nursing* 2016 Dec;13(6):454-462.
- Strandberg E, Eldh AC, Forsman H, Rudman A, Gustavsson P, Wallin L. *Making sense of the concept of research utilization: what is what — instrumental, conceptual and persuasive research utilization?* *Worldviews on Evidence Based Nursing* 2014; 11(1): 55-64.
- Bostrom A-M, Rudman A, Ehrenberg A, Gustavsson JP, Wallin L. *Factors associated with evidence-based practice among newly graduated registered nurses in Sweden: A cross-sectional study.* *BMC Health Services Research* 2013; 13:165.
- Wallin L, Bostrom A-M, Gustavsson P. *Capability beliefs regarding evidence-based practice are associated with application of EBP and research use: validation of a new measure.* *Worldviews of Evidence-Based Nursing* 2012; 9(3): 139-148.
- Forsman H, Wallin L, Gustavsson P, Rudman A. *Nursing students' intentions to use research as a predictor of use one year post graduation: an observational study.* *International Journal of Nursing Studies* 2012; 49(9): 1155-1164.
- Forsman H, Rudman A, Gustavsson P, Ehrenberg A, Wallin L. *Determinants of low research use in registered nurses two years after graduation — a national survey.* *Implementation Science* 2012; 7:46.

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Publications from the LANE study, cont' d

- Wallin L, Gustavsson P, Ehrenberg A, Rudman A. *A modest start, but a steady rise in research use. A longitudinal study of nurses during the first five years in professional life.* *Implementation Science*, 2012, 7: 19.
- Florin J, Ehrenberg A, Wallin L, Gustavsson P. *Educational support for research utilization and capability beliefs regarding evidence-based practice skills: a national survey of senior nursing students.* *Journal of Advanced Nursing* 2012; 68(4): 888-897.
- Rudman A, Gustavsson, Ehrenberg A, Bostrom A-M, Wallin L. *Registered nurses' evidence based practice: A longitudinal study of the first five years after graduation.* *International Journal of Nursing Studies* 2012; 49(12): 1494-504.
- Rudman A, Omne-Pontén M, Wallin L, Gustavsson JP. *Monitoring the newly qualified nurses in Sweden: the Longitudinal Analysis of Nursing Education (LANE) study.* *Human Resources for Health* 2010; 8:10.
- Forsman H, Rudman A, Gustavsson P, Ehrenberg A, Wallin L. *Use of research by nurses during their first two years after graduating - a prospective study.* *Journal of Advanced Nursing* 2010; 66(4), 878-890.
- Bostrom A-M, Ehrenberg A, Gustavsson JP, Wallin L. *Registered nurses' application of evidence based practice — a national survey.* *Journal of Evaluation in Clinical Practice*, 2009; 15: 1159-1163.
- Forsman H, Gustavsson P, Ehrenberg A, Rudman A, Wallin L. *Research use in clinical practice — extent and patterns among nurses one and three years post-graduation.* *Journal of Advanced Nursing*, 2009; 65(6): 1195-1206.

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Educational support for research utilization and capability beliefs regarding evidence-based practice skills: a national survey of senior nursing students Florin 2012

- Investigate Swedish university nursing students' experience of educational support for research utilization and capability beliefs regarding evidence-based practice
- 2006 cohort
- 1440 students
- 68% of the national population

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Perceived educational support for research use

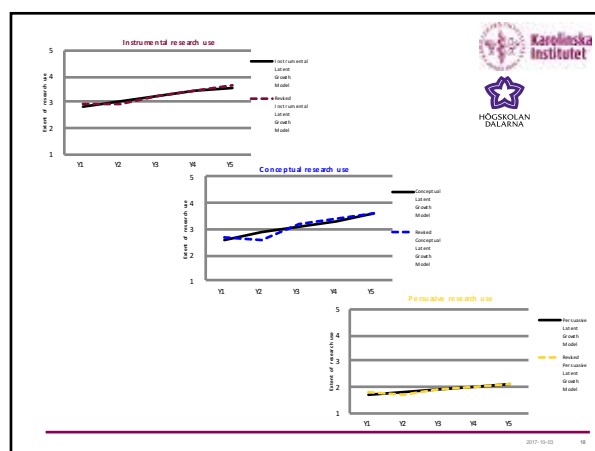
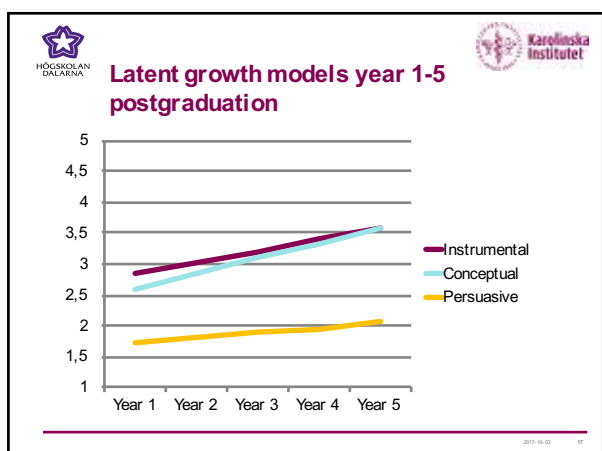
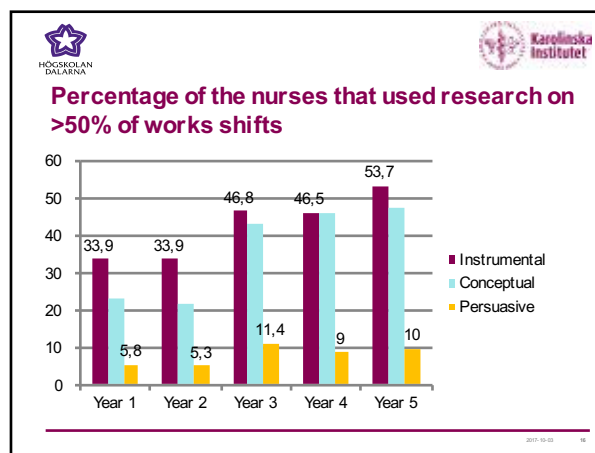
	Mean (SD)	F	p
Campus education			
Following the development of knowledge in areas of interest	2.8 (0.83)	2.736	<0.001
Using research-based knowledge	3.0 (0.79)	2.779	<0.001
Acquiring knowledge on how to pursue changes in clinical practice	2.6 (0.73)	2.341	<0.001
Clinical education			
Following the development of knowledge in areas of interest	2.2 (0.77)	1.258	0.177
Using research-based knowledge	2.5 (0.78)	0.930	0.564
Acquiring knowledge on how to pursue changes in clinical practice	2.4 (0.77)	1.119	0.311

Capability beliefs regarding EBP

Item	m	S5D	F	p	Cohen's d
Formulating questions to search research-based knowledge	7.8	1.84	2.69	<0.001	1.90
Using databases to search for knowledge	8.5	1.64	2.92	<0.001	1.27
Using other information sources	8.9	1.29	1.85	0.007	1.41
Appraising research reports	8.4	1.46	2.72	<0.001	2.00
Implementing current knowledge	7.5	1.77	1.46	0.065	1.27
Evaluating whether clinical practice reflects current knowledge	7.5	1.75	1.39	0.097	1.27
Average score	8.1	1.72	2.64	<0.001	1.90

A modest start, but a steady rise in research use: a longitudinal study of nurses during the first five years in professional life
Wallin 2012

- Prospectively examine the extent of nurses' use of research during the first five years after undergraduate education and assess changes over time
- 2004 cohort
- n=1501 year 1, n=1047 year 5



Research use among nurses one and two years postgraduation – patterns and determinants
Forsman 2009, 2012

- Describe patterns of nurses' use of research one and two years after graduating and identify predictors of low research use
- Cluster analysis
- Logistic regression

Patterns of research use – overall high use

n(Y1) = 43 (4.9%) n(Y2) = 45 (5.3%)

Diverse patterns of research use

Year 1: 45.5%
 Year 2: 54.9%

Patterns of research use – overall low use

Year 1: 45.5%
 Year 2: 54.9%

Determinants of low research use

EDUCATION **WORK LIFE**

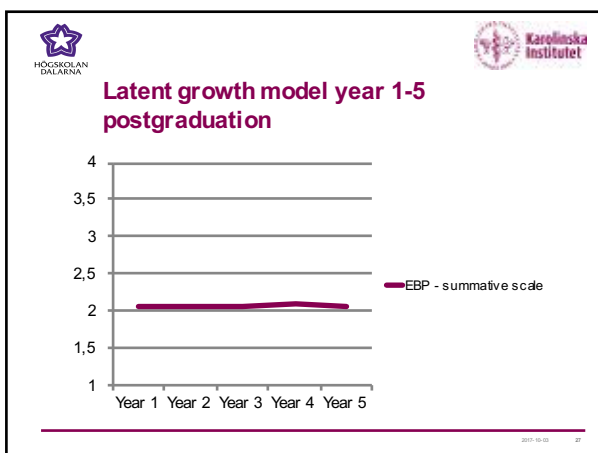
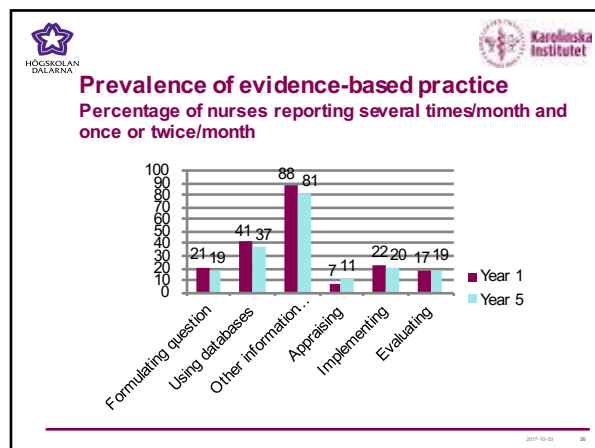
- The work place
 - Clinical setting (psychiatry)
- Management
 - Staffing (enough)
 - Role clarity (low)
- Individual characteristics and perception of education and work
 - Gender (male)
 - Student activity (discussion in class – seldom)
 - Positive challenge of work (low)

Registered nurses' evidence based practice: A longitudinal study of the first five years after graduation
Rudman 2012

- Prospectively examine the extent of Swedish nurses' evidence-based practice during the first five years of professional life
- 2004 and 2006 cohort
- n=1207 and 1227

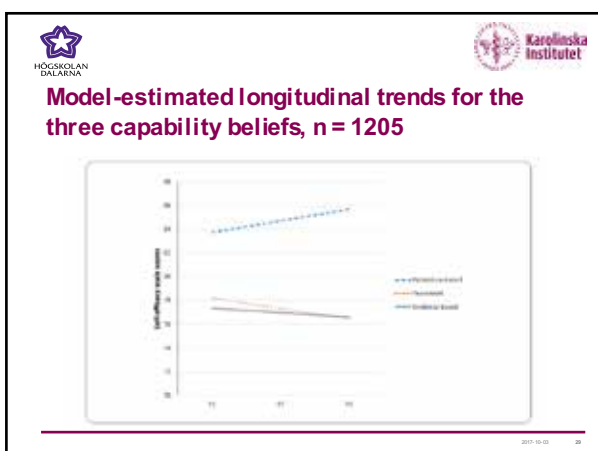
Findings 5 years after graduation How often do you perform EBP tasks?

Part of the EBP process	never, seldom/ occasionally every half year	occasionally every month/ several times every month
Formulating questions to search research-based knowledge	80,9%	19,1%
Using databases to search for knowledge	62,5%	37,5%
Using other information sources	18,7%	81,3
Appraising research reports	89,4%	10,6%
Implementing current knowledge	77,0%	23,0%
Evaluating whether clinical practice reflects current knowledge	81,3%	18,7%



New graduate nurses' developmental trajectories for capability beliefs concerning core competencies for healthcare professionals: A national cohort study on patient-centered care, teamwork, and evidence-based practice Ehrenberg 2016

- Evaluating the trajectories of the core competencies patient-centered care, teamwork, and EBP among new nurses during their first three years of practice.
- 2006 cohort
- n= 1205



Discussion

- The findings raise important issues for both educators and clinical managers:
 - How are nursing students being prepared for worklife?
 - How are newly graduated nurses being introduced in the healthcare organisation?
- Campus and clinical education – two separate worlds?
- Upward trend for all three 'kinds of research use', but starting only after the second year – a 'transition shock' effect?
- 'Transition shock' unavoidable?
- Level of extent of evidence-based practice
- A downward trend regarding capability beliefs for teamwork