Status of Nordic research on simulation-based learning in healthcare: an integrative review

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Status of Nordic research on simulation-based learning in healthcare: an integrative review

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Abstract

Background: Based on common geography, sociopolitics, epidemiology, and healthcare services, the Nordic countries could benefit from increased collaboration and uniformity in the development of simulation-based

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Hensikt

Få oversikt over nordisk forskningslitteratur om simuleringsbasert læring i helsetjenesten og tilhørende utdanninger, og foreslå retningen for fremtidig forskning.

FS

1.What is the current status of research on simulation-based learning in healthcare education?
2. Which professions have been addressed in the research on simulation-based learning?
3. Which research designs have been adopted in the research on simulation-based learning?
4. Which areas of simulation-based learning in healthcare education can be identified in the Nordic research literature?

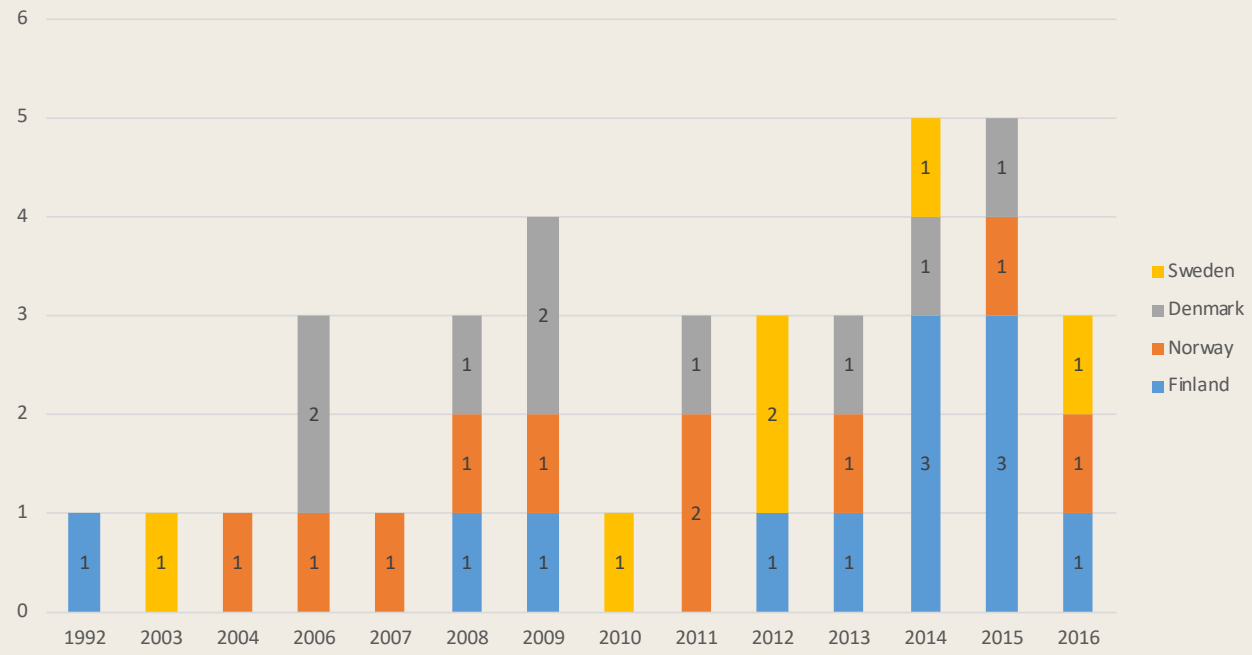
Design

- Integrative review
- Søkeord:
  - "Nordic", "Norway", "Sweden", "Finland", "Denmark" or "Iceland"
  - "healthcare", "nursing", or "medicine"
  - "simulation", "teaching", "learning", "curriculum", "assessment", or "examination"

- Inklusjonskriterier:
  - Abstracts and papers in English, Norwegian, Danish, Swedish, Icelandic, or Finnish
  - Empirical studies focusing on simulation in healthcare, nursing, or medicine
  - Data material on simulation from at least one of the Nordic countries
  - Peer-reviewed studies published before June 2016
  - Empirical field: Studies from allied healthcare professions

Resultater

Antall artikler (n=37) publisert per år per land fra 1992-2016



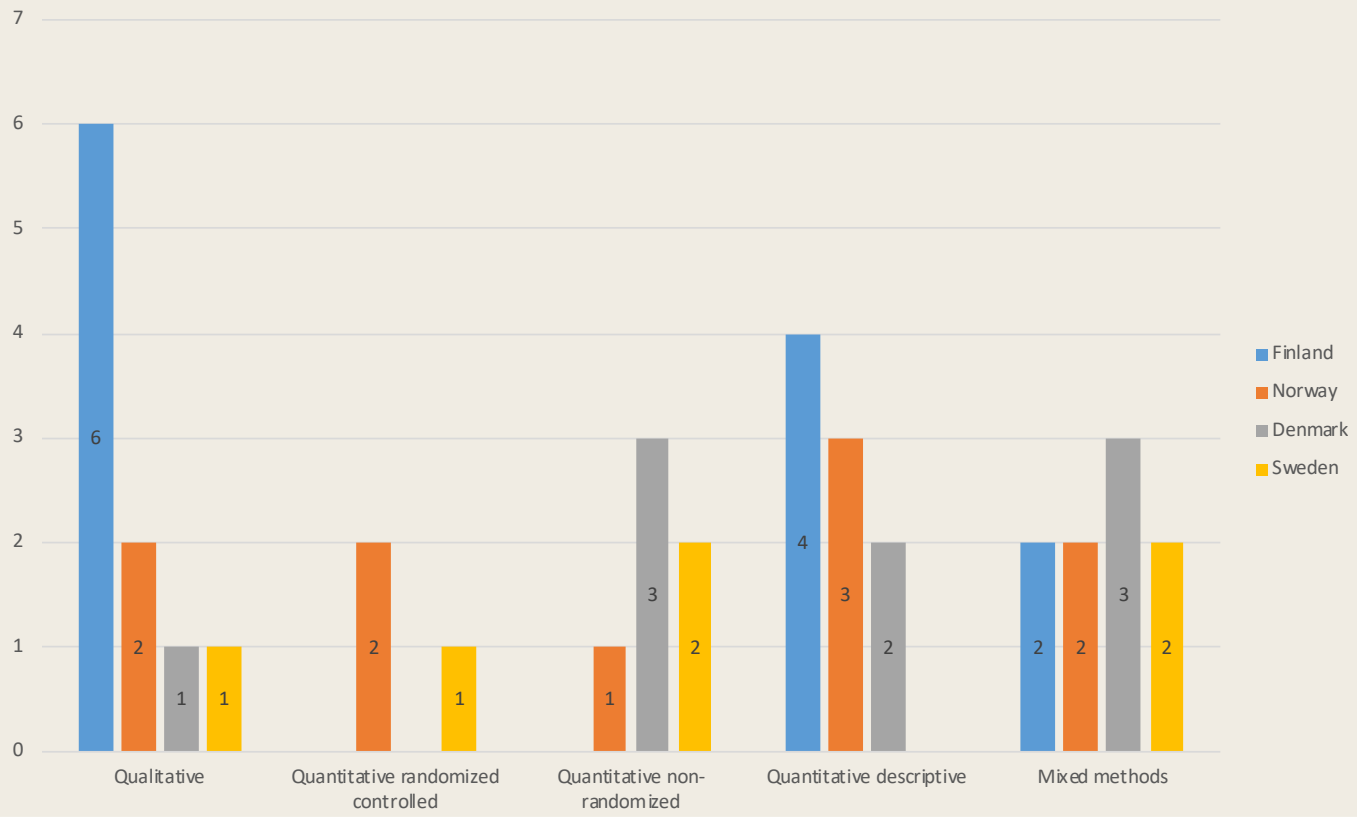
Deltakere

- Tverrfaglige team: 15 studier
- Sykepleiere/sykepleierstudenter/paramedics: 11 studier
- Leger/medisinerstudenter: 10 studier
- Annet helsepersonell: 1 studie

Simuleringsmodaliteter

- Manikiner: 18 studier
- Simulerte pasienter: 12 studier
- Virtual reality: 4 studier
- Computer-based simulators: 4 studier
- 3 studier anvendte 2 modaliteter
- 2 studier opplyste ikke om modalitet
- 1 studie sammenlignet to modaliteter

Forskningsdesign fordelt mellom de nordiske land (n=37)



5 tema

- Tekniske ferdigheter (n=9)
- Ikke-tekniske ferdigheter (n=9)
- Brukererfaring (n=9)
- Pedagogiske aspekter (n=7)
- Pasientsikkerhet (n=3)

Table 3 Emerged categories and themes of Nordic simulation studies.

Technical skills (n=9)	
Categories	Studies
Resuscitation knowledge and skills	Bjørshol et al. 2011 [37]
Resuscitation knowledge and skills	Creutzfeldt et al. 2012 [35]
Pharmacist and health food clerk technical skills	Hakoinen et al. 2014 [43]
Knowledge and skills in nursing management	Jansson et al. 2014 [41]
Dose and methods of teaching resuscitation	Jäntti et al. 2009 [39]
Resuscitation performance and assessment of simulation method	Mondrup et al. 2011 [36]
Resuscitation knowledge and skills	Naess et al. 2011 [38]
Assessment of learning outcomes and learners' feedback	Silvennoinen et al. 2016 [40]
Self-assessment of skills in emergency care	Utsi et al. 2008 [42]
Non-technical skills (n=9)	
Categories	Studies
Communication skills assessment	Aspegren et al. 2006 [44]
Interprofessional communication and collaboration	Dahl Pedersen et al. 2006 [52]
Self-assessment of communication skills	Gabrielsen et al. 2016 [45]
Leadership and team skills in cardiac arrest	Høyer et al 2009 [46]
Leadership skills in interprofessional teams	Jacobsson et al. 2012 [48]
Communication and quality management skills related to patients with chronic diseases	Jensen et al. 2013 [49]
Assessment tool for decision-making	Lauri 1992 [47]
Self-assessment on trauma team management know-how	Rosqvist & Lauritsalo 2013 [50]
Multiprofessional team training	Østergaard et al. 2008 [51]
User experience (n=9)	
Categories	Studies
Participants' perception of the simulation	Ameur et al. 2003 [60]
Participants' experience of learning outcome from simulation	Bondevik et al. 2006 [53]
Participants' experience on physical, psychosocial and organizational factors that affect the CSL learning environment	Haraldseid et al. 2015 [62]
Participants' experience and self-assessment of three simulation modalities	Koponen & Pyörälä 2014 [58]
Participants' experience with computer-based virtual simulation	Mäkitie et al. 2008 [61]
Participants' experience on virtual patients	Salminen et al. 2014 [54]
Participants' experience on resuscitation course	Thesen et al. 2004 [55]
Participants' experience on teaching and learning on in-service training	Toivanen et al. 2012 [57]
Participants' experience and self-assessment	Wisborg et al. 2009 [59]
Educational aspects (n=7)	
Categories	Studies
Planning, preparing and conducting clinical simulations	Jensen et al. 2015 [68]
Simulation as a tool for enhancing reflection	Lestander et al. 2016 [65]
Pilot testing of a virtual reality simulation	Mjelstad et al. 2007 [69]
Assessing simulation teaching methods	Poikela et al. 2015 [64]
Issues and challenges with simulation implementation	Reierson et al. 2015 [66]
Curriculum development on interpersonal communication competences	Saaranen et al. 2015 [67]
Satisfaction with interprofessional team training	Westfelt et al. 2010 [70]
Patient safety (n=3)	
Categories	Studies
Effects of intervention on mortality rate	Fuhrmann et al. 2009 [72]
Prevention of medication and systemic errors	Dieckmann et al. 2014 [71]
Development of a pedagogical design of patient safety curriculum	Tella et al. 2015 [73]

Konklusjon

- Flest studier anvender et kvalitativt eller beskrivende design med tverrfaglige eller profesjonspesifikke team
- Flest studier anvender manikiner som simuleringsmodalitet

Implikasjoner for videre forskning

Randomiserte kontrollerte studier

Studier som støtter opp under simulering som en pedagogisk metode

Studier som har fokus på pasientsikkerhet, primærhelsetjenesten, eller en kombinasjon av PHT og SHT.

Fremtidig forskning bør styrke design og metodologi, omfatte sammenlignende studier på tvers av de nordiske landene og omfatte både PHT og SHT.

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Master's course in simulation-based learning (10 sp.)

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- Teoretisk og praktisk fokus

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- Helge Lorentzen, SAFER
- Arne Rettedal, UiS
- Stephen Sollid, SNLA/UiS
- Ingunn Aase, UiS

Innhold

- Begreper
- Teorier
- Forskning
- Pedagogiske prinsipper
- Simuleringsmodaliteter
- Overføring til praksis
- Vurdering og evaluering

Første kull høsten 2018

FV: Marit Vassbotten Olsen, Hege Haugen (Bergen), Mona Stusvik Ellingsæther (Mandal), SEH, Kristin S. Flatlandsmo (Oslo), Sigrid Steines (SUS/UiS) og Hans Erik Birkeland (SUS)