Evidence-based Research and Delayed Cord Clamping: Implications for Cross-Cultural Education, Research, and Policy

Mary Ann Faucher PhD, MPH, CNM, FACNM
Maryann_Faucher@baylor.edu
Cheryl Riley, DNP, APRN, NNP-BC
Lyn Prater, PhD
Padmanabh Reddy, MD
Project Aims

❖ Promote iron status in newborns through increased utilization of DCC in a group of midwives working in Hyderabad, India.
❖ Objectives:
  ▪ 1) Educate and train maternity health care providers about the benefits of DCC
  ▪ 2) Examine knowledge, beliefs and practice before and after a workshop on DCC.
  ▪ 3) Evaluate factors involved in the adoption of practice including DCC using focus groups
Setting & Participants

❖ A network consisting of a hospital and rural birth centers-Hyderabad, India

❖ Participants
  ❖ ANMs-BSN: (N = 31 Part 1) (N = 15 Part 2)
  ❖ All participants are employed by the same organization AND
  ❖ Work in both a hospital and a rural birth center
Phase 1: Translational Framework

Problem: Childhood Anemia
ICC is an inbred practice

Research Questions
Will an evidence-based education and training program promote the practice of DCC?
What factors determine adoption of EBP/Practice

Organizational Support & Context
Adopted a Policy & Procedure

Study Design
Capacity Building & PAR
Knowledge to Action (KTA)
Single group pre/post test (KBP)
Simulation-Audit & Feedback
Focus Groups

Data Collection-Analysis-Results-Reflection-Dissemination
Background

- Anemia affects up to 80% of the population in India. \textit{Viveki et al. 2012}

- Delayed umbilical cord clamping (DCC) at birth provides:
  - Iron: 30 to 75 mg (enough for 3 to 6 months) \textit{Patil, 2012; Lahariya & Khandekar, 2007; McDonald et al. 2013}
  - Several million stem cells \textit{Cook, 2007}

Evidence evaluating birth attendant training in India shows that DCC was rarely performed. \textit{Folsom et al. 2015}
Results - Pre-Post Knowledge

N = 31 for Pretest
N = 28 for Post-test

DCC decreases intraventricular hemorrhage in preterm infants

ICC decreases risk for postpartum hemorrhage

Oxygen transport continues through cord after birth

ICC prevents jaundice

DCC improves preterm outcomes

DCC decreases anemia

DCC provides additional iron

Knowledge Scores: Percent Answering Correctly for Each Statement

- Pre-Test
- Post-Test (1st)
- Post-Test (2nd)*

LOUISE HERRINGTON SCHOOL OF NURSING
Results - Pre-Post Beliefs

ICC needed for neonatal resuscitation

ICC needed for nuchal cord management

Too busy to practice DCC

ICC needed to provide care for baby

Time of clamping is not important

Positive Belief Scores: Percent Answering False for Each Statement

Pre-Test
Post-Test (1st)
Post-Test (2nd)*

LOUISE HERRINGTON SCHOOL OF NURSING
## Results: Practice-Pre-test

N = 31 pretest  
N = 15 post-test 10-months after intervention

<table>
<thead>
<tr>
<th>Taught in training to immediately clamp and cut the cord</th>
<th>22 (71)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Institutional policy is to immediately clamp and cut the cord</td>
<td>23 (74.2)</td>
</tr>
</tbody>
</table>

*Which describes your technique for cord clamping?*

<table>
<thead>
<tr>
<th>Clamp it immediately or before thirty seconds after birth</th>
<th>3 (9.7)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wait at least one minute but not longer than 3 before clamping</td>
<td>10 (32.3)</td>
</tr>
<tr>
<td>Wait at least three minutes before clamping</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Wait until the cord stops pulsating before clamping</td>
<td>16 (51.6)</td>
</tr>
</tbody>
</table>
Simulation

❖ Participatory training
❖ Facilitates audit-feedback-areas of uncertainty  
  Rao & Shetty, 2012; J South Asian Feder Obst Gynae
  ❖ 28 (90.3%) midwives stated they place the baby on mothers abdomen right after birth
  ❖ Simulation practice revealed this to be true but the baby was wrapped in blanket
  ❖ Consistent with behavior change theory
❖ Performance evaluation that likely improved uptake of DCC
  ❖ DCC with tight nuchal cord; postpartum hemorrhage
  ❖ Led to development of Skills Teaching Aids
Simulation

❖ Excellent interactive technique in cross cultural settings (Forsetlund et al. 2009; Cochrane Database Sys Rev).

❖ No right or wrong answer but buffers the idea of being wrong
  ♦ Group process improvement rather than “singled” out.

❖ Illuminates other opportunities for assessment and improvement of practice
  ♦ Interpersonal Interaction with birthing mom
  ♦ Assessment of skin-skin practice
Conclusions

❖ These findings support further research to discover how midwives make decisions.
  ❖ Disconnect between pre-service education and practice
  ❖ Variation in pre-intervention policy on cord clamping and NM practice
  ❖ May call for more qualitative methods
Focus Groups

❖ Aim: Facilitators and Barriers to implementation of DCC
❖ What influences practice?
❖ On what basis do midwives make decisions about practice in general and the uptake of evidence-based practice change?
❖ Uncover the nature of practice based knowledge, knowledge transformation and influences with the culture and context of care
Participants & Questions

❖ 15 midwives
❖ All work in rural birth center and Foundation Hospital
❖ 2 Focus Group Sessions
❖ Main Questions
Themes

Supports
- Knowing the benefits
- Knowing the Process
- Seeing the benefits

Barriers
- Not being taught
- Ambiguity

Influence of Others
- Influence of Others
Theme: Influence of Others

❖ We: “learned from the TBA to wait.”.
❖ “We used to do immediately..... seen it in the hospital.” A “doctor that use to come and train us (ICC); “gynecologists knows everything,” “they train and everyone is rushing around.”
Conclusions

1. Knowing the process and seeing the benefits influenced clinical practice

2. Clinical experience is critical to implementation of evidence based practice

3. The opinion of others influences the decision to implement evidence based practice

4. Utilizing different ways of knowing informs decision making
Policy

Education: Pre-and In-Service
Practice: “See it done”
Translation of Evidence: Bidirectional
Contextual → Culture
Valid-Reliable-Relevant
Tacit mindlines (relationships, collaborative learning, thought leadership)

Wieringa & Greenhalgh, 2015: Implementation Science
Acknowledgement & Thanks


