Lay Peer Support in Breastfeeding Interventions: Examining Engagement Strategies

NIVEDITA BHUSHAN, MA
UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL
Presentation Outline

- Background
- Study Objectives
- Systematic Review Procedures
- Results
- Discussion
Breastfeeding Background

- Most important preventive intervention for short term child survival and long term child development

Strategies to promote breastfeeding:
- Setting standards for maternity services
- Community education through media campaigns
- Lay peer led initiatives to support individual mothers
Lay Peer Support Background

- Knowledge and experience of a certain health concern or stressor, a similar demographic background, and shared community network uniquely position lay peer supporters (LPS) to provide socially relevant care and assistance.

- Significant contributions to the field of health promotion.
Lay Peer Support + Breastfeeding

- Studies have found mixed results

- Possible explanations for variability in the effectiveness of peer support on breastfeeding outcomes:
  - Peer support model
  - Breastfeeding norms
  - Contact modalities
  - Engagement?
<table>
<thead>
<tr>
<th>Study</th>
<th>Context</th>
<th>Intervention</th>
<th>Results</th>
<th>Study</th>
<th>Context</th>
<th>Intervention</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graffy 2004</td>
<td>England, Urban</td>
<td>Randomized intervention to increase breastfeeding via antenatal in-person visits plus post-natal phone calls on request (n= 720)</td>
<td>No differences in self reported % breast feeding initially or at 4 or 6 months post-partum</td>
<td>Muirhead 2006</td>
<td>Scotland, Rural</td>
<td>Randomized intervention to increase breastfeeding via antenatal in-person visits plus post-natal phone calls or in-person visits on request (n= 225)</td>
<td>No differences in self-reported breastfeeding initiation or duration at 10 days, 8 weeks or 16 weeks post-partum</td>
</tr>
</tbody>
</table>
Study Objectives

1. Identify studies that utilized LPS to deliver breastfeeding interventions;

2. Document the type of engagement strategies utilized by LPS; and

3. Examine the relationship between the identified engagement strategies and the overall effectiveness of the intervention
Systematic Review

- **PubMed Search:**
  - Abstracts and Titles from 1995-2015
  - Cognates of lay peer supporter titles (community health worker, natural helper, *promotora*, etc.)
  - Cognates of breastfeeding

- **Eligibility Criteria:**
  - Inclusion of only lay peer supporters in the intervention
  - Measurement of either initiation, exclusivity, or duration of breastfeeding
  - Inclusion of statistical tests of significance for observed changes
Results

Figure 1. PRISMA Diagram

Identification
- Records identified via PubMed search (n = 163)
  - Additional records identified through other sources (n = 24)

Screening
- Records after duplicates removed (n = 182)
  - Titles and Abstracts Screened (n = 182)

Eligibility
- Full-text articles reviewed for eligibility (n = 182)

Included
- Studies included in synthesis (n = 47)

Excluded (n = 135)
- 50 = Qualitative, No Statistical Tests
- 31 = No Breastfeeding or Peer Support Outcomes
- 22 = Systematic Review/Meta-Analysis
- 11 = Description of Intervention/Trial Protocol
- 13 = Skilled Peer Supporter/Professional
- 4 = Outcome Related to Peer Supporter
- 2 = No Ongoing Peer Support Provided
- 2 = Cost Analysis
Systematic Review - Study Characteristics

- Abstraction:
  - Study country context (high vs. low income)
  - Study country setting (rural and urban)
  - Sample size
  - Retention of study participants
Systematic Review - Intervention Delivery Characteristics

Abstraction:

- Type of peer supporter
  - Background and training

- Engagement modalities
  - Telephone, mailed flyer, home visit, clinic visit, etc.

Utilization of engagement strategies:

- Any face-to-face contact
- Initiation of engagement (peer supporter vs. mother)
- Timing of initiation of engagement (hours till follow up after birth)
- Overall timing of engagement (prenatal and postnatal)
Systematic Review – Outcomes

- Abstraction:
  - Initiation of Breastfeeding
    - Infant receives milk within the first 24 hours of birth.
  - Exclusive Breastfeeding
    - Maternal milk as the only food source with no other liquids or food given except medicines, minerals, and vitamins.
  - Duration of Breastfeeding
    - Duration that an infant or child receives breast milk
Results

35 out 47 studies reported significant differences between intervention and control groups (significant outcomes).

Studies with Significant Outcomes Disaggregated by Breastfeeding Outcome

- **Initiation**: 60% (N = 22)
- **Exclusive**: 67% (N = 27)
- **Duration**: 61% (N = 23)
Results: Impact of Peer Support by Setting

Proportion of Studies with Significant Outcomes by Country Income

- Low Income: 90% (N = 20)
- High Income: 62% (N = 27)

Significant difference by country income (Fisher’s Exact = 0.036)

Proportion of Studies with Significant Outcomes by Intervention Context

- Rural: 79% (N = 14)
- Urban: 73% (N = 33)

No significant difference by intervention context (Fisher’s Exact = 0.674)
Results: Impact of Peer Support by Modality

- Significant difference between studies that utilized clinic contact versus those that did not (Fisher’s Exact = 0.04)

- Non-significant difference between studies that utilized home contact versus those that did not (Fisher’s Exact = 0.04)

- Significant difference between studies that utilized telephone contact versus those that did not ($\chi^2 = 1.02$, p-value = 0.04)
# Results: Impact of Peer Support by ES

**TABLE 2 Association between Type of Engagement Strategy Used and Significant Outcomes Disaggregated by Type of Outcome**

<table>
<thead>
<tr>
<th>Breastfeeding Outcome</th>
<th>Total Studies Measuring Outcome</th>
<th>Total Studies with Significant Outcome</th>
<th>Fisher's Exact</th>
<th>Fisher's Exact</th>
<th>Fisher's Exact</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>N</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Initiation</td>
<td>22</td>
<td>13 (60%)</td>
<td>0.1558</td>
<td>0.0260*</td>
<td>0.1778</td>
</tr>
<tr>
<td>Exclusive</td>
<td>27</td>
<td>18 (67%)</td>
<td>0.295</td>
<td>0.2365</td>
<td>0.0297*</td>
</tr>
<tr>
<td>Duration</td>
<td>23</td>
<td>14 (61%)</td>
<td>0.2601</td>
<td>0.4003</td>
<td>0.0183*</td>
</tr>
<tr>
<td>All Outcomes</td>
<td>47</td>
<td>35 (74%)</td>
<td>0.0971</td>
<td>0.0161*</td>
<td>&lt;.0001*</td>
</tr>
</tbody>
</table>

* p-value < .05*

**TABLE 5 Odds of Significant Outcomes by Number of Strategies Utilized**

<table>
<thead>
<tr>
<th>Breastfeeding Outcome</th>
<th>Odds Ratio (Model 1)</th>
<th>Odds Ratio (Model 2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initiation</td>
<td>2.48</td>
<td>1.52</td>
</tr>
<tr>
<td>Exclusive</td>
<td>3.09*</td>
<td>2.56*</td>
</tr>
<tr>
<td>Duration</td>
<td>3.89*</td>
<td>5.59*</td>
</tr>
<tr>
<td>All Outcomes</td>
<td>4.50**</td>
<td>3.59*</td>
</tr>
</tbody>
</table>

* p-value < .05, ** p-value < .01
Results: Influence of Follow Up Duration

- Differences in how the outcomes were measured in each study
  - Initiation of breastfeeding consistently measured within 24 hours of birth
  - Measurement of duration and exclusive outcomes ranged from 1 to 24 months.

- There were a greater number of studies achieving significant breastfeeding outcomes at the three-month measurement period than at the six-month measurement period.

- The association between number of significant outcomes and time at last follow up across all outcomes was not statistically significant (Fisher’s Exact = 0.684).
1. Proactive engagement matters. Rather than any single strategy or specific combination of strategies, just using more strategies, or more engagement, was associated with significant breastfeeding outcomes.

2. Peer support might be more effective for interventions that promote exclusive breastfeeding or longer duration of breastfeeding.

3. Context is important – intervention modality and country income level.
Strengths, Limitations, & Future Steps

**Strengths:**

- First study to document and examine proactive engagement strategies
- Analysis in addition to a systematic review

**Limitations**

- Variability in the timing of which breastfeeding outcomes were measured.
- Studies assessed more than one breastfeeding outcome, increasing the probability of reporting significant results.
- Analysis was largely descriptive, no calculation of effect size.
- Findings are contingent upon the quality of studies included in our review.

**Areas for future research:**

- Pathways through which intervention context impacts peer support effectiveness
- Data on engaging mothers in peer support interventions related to engagement dose
- Qualitative work on additional facets of engagement
Acknowledgements

- Peers for Progress
- Co-Authors: Ed Fisher and Sarah Kowitt
Thank you!

NIVEDITA@UNC.EDU
### Results

#### TABLE 1 Disaggregation of Studies by Key Characteristics and Significant Outcomes

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Total Studies with Characteristic</th>
<th>N = 47</th>
<th>Studies with Characteristic and Any Significant Outcome</th>
<th>N (%)</th>
<th>Studies with Characteristic and Significant Initiation Outcome</th>
<th>N (%)</th>
<th>Studies with Characteristic and Significant Exclusive Outcome</th>
<th>N (%)</th>
<th>Studies with Characteristic and Significant Duration Outcome</th>
<th>N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Modality</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clinic Only</td>
<td>2</td>
<td>2 (100%)</td>
<td>0</td>
<td></td>
<td>2 (100%)</td>
<td></td>
<td>2 (100%)</td>
<td></td>
<td>2 (100%)</td>
<td></td>
</tr>
<tr>
<td>Home Only</td>
<td>21</td>
<td>16 (76.19%)</td>
<td>7 (77.78%)</td>
<td>11 (73.33%)</td>
<td>3 (50%)</td>
<td>1 (100%)</td>
<td>0</td>
<td>1 (100%)</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Telephone Only</td>
<td>4</td>
<td>2 (50%)</td>
<td>0 (0%)</td>
<td>2 (50.00%)</td>
<td>1 (33.33%)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Clinic and Telephone</td>
<td>1</td>
<td>1 (100%)</td>
<td>0</td>
<td>1 (100%)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Home and Clinic</td>
<td>11</td>
<td>10 (90.91%)</td>
<td>3 (60%)</td>
<td>4 (100%)</td>
<td>5 (100%)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Home and Telephone</td>
<td>7</td>
<td>3 (42.86%)</td>
<td>2 (33.33%)</td>
<td>0 (0%)</td>
<td>3 (42.86%)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Home, Telephone, and Clinic</td>
<td>1</td>
<td>1 (100%)</td>
<td>1 (100%)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td><strong>Country Context</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High Income</td>
<td>27</td>
<td>17 (62.96%)</td>
<td>7 (46.67%)</td>
<td>5 (38.46%)</td>
<td>10 (55.56%)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Low to Middle Income</td>
<td>20</td>
<td>18 (90.00%)</td>
<td>6 (85.71%)</td>
<td>14 (92.86%)</td>
<td>4 (80.00%)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td><strong>Geography</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rural</td>
<td>14</td>
<td>11 (78.57%)</td>
<td>4 (66.67%)</td>
<td>7 (87.50%)</td>
<td>5 (83.33%)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Urban</td>
<td>33</td>
<td>24 (72.73%)</td>
<td>9 (56.25%)</td>
<td>11 (57.89%)</td>
<td>9 (52.94%)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td><strong>Time of Last Follow-Up</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 3 Months</td>
<td>18</td>
<td>14 (77.78%)</td>
<td>10 (71.43%)</td>
<td>3 (60.00%)</td>
<td>3 (50.00%)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>3 Months</td>
<td>15</td>
<td>12 (80.00%)</td>
<td>1 (25.00%)</td>
<td>8 (88.89%)</td>
<td>8 (80.00%)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>6 Months</td>
<td>11</td>
<td>7 (63.64%)</td>
<td>2 (50.00%)</td>
<td>6 (54.55%)</td>
<td>2 (40.00%)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Greater than 6 Months</td>
<td>3</td>
<td>2 (66.67%)</td>
<td>0</td>
<td>1 (50.00%)</td>
<td>1 (100%)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>47</td>
<td>35 (74.44%)</td>
<td>13 (27.66%)</td>
<td>18 (32.30%)</td>
<td>14 (29.79%)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

**Engagement Strategy Utilized**

- Face-to-Face: 42 (78.57%)
- Initiation: 38 (89.47%)
- Pre & Post Contact: 29 (72.41%)
- Contact within 72 hours of birth: 27 (88.89%)

**Breastfeeding Outcome Measured**

- Initiation: 22 (60%)
- Exclusive: 27 (67%)
- Duration: 23 (61%)

*Studies could be placed in more than one category*