Infant feeding practices: Rates, Risks of Not Breastfeeding & Factors Influencing Breastfeeding

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Introduction

• **Breastfeeding:** an interactive process between maternal biology and infant instinct (Small, 1998).
  - The healthy newborn infant is born ready to attach to the mother's breast and begin to breastfeed.
  - The mother's body is also ready to move from pregnancy and childbirth into the next reproductive phase: lactation.

• **Lactogenesis:** begins in pregnancy, and following the delivery of the placenta and the rapid drop in progesterone, the hormone prolactin allows full milk production to begin.

• **Nipple stimulation:** leads to the release of oxytocin – the "love hormone" – from the mother's posterior pituitary gland (Newton, 1971).
Introduction

- Feeding newborn mammals with breast milk was never a choice but rather a natural way of feeding.

- Without the influence of culture and other beliefs, babies would naturally continue to be breastfed until the age of 2.5 to 7 years (Dettwyler, 1995).

- WHO recommends that all infants be exclusively breastfed for 6 months, followed by complementary food and breastfeeding for as long as mother and child want (WHO, 2001).

- Most infants around the world fail to achieve the WHO recommendations.

- Infant feeding practices vary immensely in complex ways in response to individual, community and societal factors.
Introduction

• It is no longer appropriate to talk about the “benefits of breastfeeding” (Berry & Gribble, 2008).

• By presenting the risks of not breastfeeding, we highlight that infants may be exposed to health risks if they are not given breast milk.

• Women respond more positively towards breastfeeding when the data are presented as risks of not breastfeeding rather than benefits of breastfeeding (Stuebe, 2009).

• This presentation will cover:
  – rates of breastfeeding around the world
  – risks of not breastfeeding
  – factors influencing infant feeding practices.
Breastfeeding rates

• Terminology:
  – *Ever breastfed*: infants who have been put to breast at least once
  – *Exclusive breastfeeding*: infants who have received only breast milk during a specified period of time

• Sources of data:
  – Organization For Economic Cooperation And Development (OECD) Family database
  – United Nation’s International Children’s Emergency Fund (UNICEF) database
## Rates in developed countries

<table>
<thead>
<tr>
<th>Country</th>
<th>Year of data collected</th>
<th>% of children who were *ever breastfed</th>
<th>Year of data collected</th>
<th>Proportion of children who were exclusively breastfed at Three months</th>
<th>Four months</th>
<th>Six months</th>
</tr>
</thead>
<tbody>
<tr>
<td>Norway</td>
<td>2006</td>
<td>99.0</td>
<td>2006</td>
<td>63.0</td>
<td>46.0</td>
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<tr>
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<td>98.0</td>
<td>1999/2001</td>
<td>48.0</td>
<td>51.0</td>
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<tr>
<td>Sweden</td>
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<td>97.6</td>
<td>2006</td>
<td>-</td>
<td>59.8</td>
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<tr>
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<td>1999/2001</td>
<td>97.0</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
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<td>2000</td>
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<td>-</td>
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<tr>
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<tr>
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<td>2005</td>
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<td>-</td>
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<tr>
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<tr>
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<tr>
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<td>-</td>
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<td>43.4</td>
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<tr>
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<td>2006/07</td>
<td>56.0</td>
<td>39.0</td>
<td>8.0</td>
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<td>Greece</td>
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<td>Netherlands</td>
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<td>35.0</td>
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<td>77.2</td>
<td>2006</td>
<td>41.2</td>
<td>-</td>
<td>19.3</td>
</tr>
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<td>2005</td>
<td>13.0</td>
<td>7.0</td>
<td>-</td>
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<tr>
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<td>-</td>
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<tr>
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<td>-</td>
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<tr>
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<td>2003</td>
<td>63.0</td>
<td>-</td>
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<td>Ireland</td>
<td>-</td>
<td>43.8</td>
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</tbody>
</table>
## Rates in developing countries

<table>
<thead>
<tr>
<th>Developing countries</th>
<th>Year of data collected</th>
<th>Early initiation of breastfeeding within one hour of birth</th>
<th>Exclusively breastfed 0-5 months</th>
<th>Continue breastfed 12 months</th>
<th>Continue breastfed 24 months</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bangladesh</td>
<td>2007</td>
<td>43</td>
<td>43</td>
<td>95</td>
<td>91</td>
</tr>
<tr>
<td>Brazil</td>
<td>2006</td>
<td>43</td>
<td>40</td>
<td>50</td>
<td>25</td>
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<tr>
<td>Egypt</td>
<td>2008</td>
<td>56</td>
<td>53</td>
<td>78</td>
<td>35</td>
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<tr>
<td>Indonesia</td>
<td>2007</td>
<td>39</td>
<td>32</td>
<td>80</td>
<td>50</td>
</tr>
<tr>
<td>Kazakhstan</td>
<td>2006</td>
<td>62</td>
<td>17</td>
<td>57</td>
<td>16</td>
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<tr>
<td>Nepal</td>
<td>2006</td>
<td>35</td>
<td>53</td>
<td>98</td>
<td>95</td>
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<tr>
<td>Nigeria</td>
<td>2003</td>
<td>32</td>
<td>13</td>
<td>85</td>
<td>32</td>
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<tr>
<td>Pakistan</td>
<td>2006/07</td>
<td>29</td>
<td>37</td>
<td>79</td>
<td>55</td>
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<tr>
<td>Rwanda</td>
<td>2005</td>
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<td>67</td>
<td>26</td>
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<td>38</td>
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<tr>
<td>Zimbabwe</td>
<td>2005/06</td>
<td>69</td>
<td>22</td>
<td>87</td>
<td>40</td>
</tr>
</tbody>
</table>
Breastfeeding risks (terminology)

- **Convincing**: a significant relationship has been found in a meta-analysis
- **Probable**: evidence from many studies but confirmation is needed in better-designed studies
- **Possible**: only a few methodological sound studies have been conducted.
Short term risks of not breastfeeding among term infants

<table>
<thead>
<tr>
<th>Convincing</th>
<th>Probable</th>
<th>Possible</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sudden Infant Death Syndrome (SIDS) (Ip, et al., 2007)</td>
<td>SIDS (Allen &amp; Hector, 2005)</td>
<td></td>
</tr>
</tbody>
</table>
# Long term risks of not breastfed among term infants

<table>
<thead>
<tr>
<th>Convincing</th>
<th>Probable</th>
<th>Possible</th>
</tr>
</thead>
</table>
| Childhood and adolescent obesity  
(van Rossum, et al., 2006) | Adult type-2 diabetes  
(Ip, et al., 2007; Leon-Cava, et al., 2002) | Childhood and adolescent type-1 diabetes  
(Allen & Hector, 2005; van Rossum, et al., 2006) |
| Higher adult mean blood pressure  
(van Rossum, et al., 2006) | Childhood leukemia  
(Allen & Hector, 2005; Horta, et al., 2007; Leon-Cava, et al., 2002; van Rossum, et al., 2006) |
|                                                | Childhood and adolescent obesity  
(Allen & Hector, 2005; Horta, et al., 2007) | Childhood leukemia  
(van Rossum, et al., 2006; Leon-Cava, 2002) |
|                                                | Cognitive ability or intelligence level  
(Horta, et al., 2007; Leon-Cava, et al., 2002) |
|                                                | Inflammatory bowel disease  
(Allen & Hector, 2005; Leon-Cava, et al., 2002; van Rossum, et al., 2006) | Higher mean adult blood cholesterol level  
(Horta, et al., 2007; Ip, et al., 2007) |
# Short term risks of not breastfeeding among mothers

<table>
<thead>
<tr>
<th>Convincing</th>
<th>Probable</th>
<th>Possible</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Slow return to pre-pregnancy weight (Allen &amp; Hector, 2005; Ip, et al., 2007)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Postpartum depression (Allen &amp; Hector, 2005; Ip, et al., 2007)</td>
</tr>
</tbody>
</table>
### Long term risks of not breastfeeding among mothers

<table>
<thead>
<tr>
<th>Convincing</th>
<th>Probable</th>
<th>Possible</th>
</tr>
</thead>
<tbody>
<tr>
<td>Premenopausal breast cancer</td>
<td>Postmenopausal breast cancer</td>
<td>Endometrial cancer</td>
</tr>
<tr>
<td>Ovarian cancer</td>
<td></td>
<td>Osteoporosis</td>
</tr>
<tr>
<td>Rheumatoid arthritis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Allen &amp; Hector, 2005; van Rossum, et al., 2006)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Factors influencing breastfeeding

A CONCEPTUAL FRAMEWORK OF FACTORS AFFECTING BREASTFEEDING PRACTICES

- Breastfeeding practices
  - Attributes of the infant
  - Attributes of the mother/infant dyad
  - Attributes of the mother

- Features of the environment
  - Hospital and health services
  - Home/family environment
  - Work environment
  - Community environment

- Public policy environment

- Attributes of society, culture, economy
  - Cultural norms re. breastfeeding, child feeding and parenting
  - Role of women and men in society
  - Cultural norms
  - Food system

Source: ‘A conceptual framework of factors affecting breastfeeding practices’ in Hector et al. {Hector, 2005 #183’, p 53}. 

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Individual level - Maternal factors

• **Maternal intention:** longer breastfeeding duration (Meedya et al., 2010).

• **Prenatal intention:** strongest predictor than any socio-demographic factors in breastfeeding initiation and duration (Donath & Amir, 2003).

• **Mothers who intend to breastfeed, but ceased earlier:**
  – younger age, fewer years of completed education (Avery et al., 1998; Gudnadottir et al., 2006)
  – negative breastfeeding attitude, intending to breastfeed for shorter time, perceived insufficient milk scores, and planning to work outside the home (Avery et al., 1998)

• In actual fact, whether women actually breastfeed or not depends on many factors which are beyond their control (Morse & Bottorff, 1989).
**Individual level - Maternal factors**

- **Women from higher social status:** likely to initiate breastfeeding and breastfeed for a longer duration (Gudnadottir et al., 2006).

- **Maternal smoking habits:** negative influence on breastfeeding initiation and duration (Amir & Donath, 2002; Scott & Binns, 1999).

- **A meta analysis (13 studies):** smoking shortens breastfeeding duration to three months (Horta et al., 2001).

- **Overweight and obese women:** less likely to breastfeed and if they do, breastfeed for a shorter duration than normal weight women (Amir & Donath, 2007).
Individual level - Infant factors

• **Prematurity and gestational age:** the risk to be formula-fed increases as the gestational age decreases.

• **Infants born at 35 to 36 weeks:** greater risk of being formula-fed than infants born at 37 to 40 gestational weeks (Donath & Amir, 2008).

• **Premature babies:** breastfeeding initiation and duration are influenced by family’s/mothers’ socio-economic status and not by the degree of infants’ prematurity or gestational age (Flacking et. al 2007).
Group level – Hospital and health services

- **Baby-Friendly Hospital Initiative by WHO & UNICEF:** a global effort to implement practices that protect, promote and support breastfeeding *(WHO/UNICEF, 2009)*.

- **Breastfeeding rates:** increased in hospitals that comply with the BFHI Ten Step to Successful Breastfeeding.

- **Professional support:** beneficial effect on breastfeeding duration; but the strength on the rate of exclusive breastfeeding is uncertain *(Sikorski et al., 2003)*.

- **Professionals:** beneficial if they have a positive attitude towards breastfeeding & knowledge/skills to help breastfeeding mother *(Clifford & McIntyre, 2008)*.
Group level - Home, family & community

• **Fathers, other family members and friends:** can support breastfeeding if they are positive about breastfeeding and have the skills (Clifford & McIntyre, 2008).

• **Fathers:** most important role in decision making regarding infant feeding choice and breastfeeding duration (Scott & Binns, 1999; Scott, 2010).

• **Women regularly visited by relatives and friends:** have a positive attitude and confidence towards breastfeeding, hence are more successful in maintaining breastfeeding while working (Galtry, 2003).
Society level – Traditional beliefs & culture

• **Traditional beliefs:** influence breastfeeding practices.

• **Colostrum:** unsuitable for newborn and should be discarded (Ertem, 2010; Hizel et al., 2006)
  – Hmong people do not believe it is real milk as true milk will only be produced after day three of an infant’s life (Liamputtong Rice, 2000).
  – But Hmong women continue to breastfeed until they become pregnant with the next child – up to 2 or 3 years or longer (Liamputtong Rice, 2000).

• **In Thailand:** cultural practices to support the women during postpartum period have positively enhanced breastfeeding success (Liamputtong, 2007, 2011).
  – During *yu duan* period (30 days after birth), women are prohibited from household chores, allowed to recuperate and bond with their newborns, & provided with traditional foods to produce breast milk.
Society level - Public policy

• The International Code of Marketing of Breast milk Substitutes (1981) by (WHO): restrictions on the marketing of breast milk substitutes (infant formula) to ensure mothers are not discouraged from breastfeeding and that substitutes are used safely if needed (WHO, 1981).

• Code violations by manufacturers: reported in
  – industrialized (Costello & Sachdev, 1998; Pisacane, 2000)
  – developing countries (Aguayo et al., 2003; Sokol et al., 2001)

• A multicentre study: in Thailand, Bangladesh, South Africa, and Poland: leading manufacturers were violating the code (Taylor, 1998).
Work & breastfeeding practices

• **Working status**: a barrier to breastfeeding - as the timing of breastfeeding cessation coincides with the mothers' return to work (Visness & Kennedy, 1997).

• **Women with children less than 3 years**: contribute to nearly 50% of the labor force in America (Bureau of Labor Statistics, 2006) & many other countries.

• **The International Labor Organization (ILO) convention**: on maternity protection is implemented in 120 countries and each country sets its own national legislation.
  – But, it tends to be narrow and excludes the informal work sector where nearly 80% of the workers are women (WABA, 2003).

• **Key elements to maternity protection**: include providing breastfeeding breaks and breastfeeding facilities at the workplace (WABA, 2003).
Maternity leave

• According to ILO: working mothers are entitled to a minimum paid maternity leave of 14 weeks (WABA, 2003).

• Duration of leave: the length of leave varies from country to country (Staehelin et al., 2007).

• Women who are only entitled to a maternity leave of six weeks or less have been found to have more depressive symptoms than mothers who are entitled to 8 to 12 weeks leave (Chatterji & Frick, 2004).
Work place and working hours

• Work full-time outside the home: less likely to breastfeed than women working from home (Fein & Roe, 1998).

• Access their infant during working hours/ provide expressed breast milk: more successful in maintaining breastfeeding for longer than those who cannot (Ortiz et al., 2004).

• Full-time shift workers with inflexible working hours: more difficulty maintaining breastfeeding;
  – if women are denied breastfeeding breaks they are unable to express breast milk leading to reduced milk production and premature breastfeeding cessation (Avery et al., 1998).
Type of work

• Jobs that require workers to attend at all times: less successful than clerical workers who can more easily make time for breastfeeding breaks (Chuang et al., 2010).

• Lowest ranked workers: less autonomy in their work and many are not aware they have the right to breastfeeding breaks by legislation (Chen et al., 2006).

• Workers in higher ranks: more aware of their rights and have greater accessibility to the facilities in the workplace and are empowered to exercise their rights (Chen et al., 2006).
**Working condition and environment**

- **Supportive employers:** help mothers of young children by providing flexibility in working hours, breastfeeding breaks and providing rooms and equipment for milk expression; allow mothers to have time off with their infants for direct feeding *(WABA, 2003).*

- **Co-workers who are also practicing breastfeeding:** a positive environment and gives encouragement to other mothers *(Rojjanasrirat, 2004).*

- **Co-workers with negative attitudes towards breastfeeding:** mothers find it difficult to express milk at the workplace when there *(Brown et al., 2001).*
Conclusion

• **High-level evidence:** babies who do not receive breast milk are at a higher risk of developing infectious diseases and chronic diseases later in life.

• **Mothers who do not breastfeed their infants:** higher risk of illnesses such as breast and ovarian cancer.

• **Breastfeeding:** is a common practice but exclusive breastfeeding infants according to the recommendations of the WHO is not so common.

• **Global initiatives (BFHI):** targeted hospital services with great success (WHO/UNICEF, 2009).

• **Working conditions and long inflexible working hours:** barriers to mothers maintaining breastfeeding.
What we need...

- **Need to create**: working environments that are supportive and protective of breastfeeding.
- **Crucial basic needs**: breastfeeding breaks and rooms for mothers at the workplace so they can continue to provide the best nutrition for their infant while working.
- **Need to empower women**: about their rights regarding infant feeding.
- **The ILO convention recommendations**: should be rectified in countries where it has not been implemented.
- **Campaigns for maternity protection law**: should be encouraged for formal and informal sectors.
- **Legislation**: accompanied by effective information, training, and monitoring systems to ensure that healthcare providers and manufacturers comply with evidence-based practice and the Code (Holla-Bhar, 2006).
Final words

As individuals, women are powerless to counter the complexity of societal forces that interfere with...breastfeeding their infants (for at least six months). What is required are 'structural changes . . . to society that will enable all mothers to breastfeed with assurance and safety', including full implementation of the ILO Maternity Protection Convention.

(Beasley & Amir 2007: 5)
Thank You