Breastfeeding:
Assessment of Maternal Breastfeeding Knowledge and Skills
|During Pregnancy and 1\textsuperscript{st}/2\textsuperscript{nd} Week After Childbirth|

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INTRODUCTION

Breastfeeding...

... is a healthier choice for the baby, mother and family.

... practices observed in Portugal from July 2010 to June 2011

- 46.3% of mothers had initiated formula feeding before three months
- 14.7% of mothers were breastfeeding exclusively at six months.

... can be emotionally demanding and physically exhausting.

... learned process.
INTRODUCTION

- The main factors associated with short duration of breastfeeding were maternal ones – knowledge on breastfeeding (Navarro-Estrella et al., 2003).

- Breastfeeding knowledge was strongly correlated with breastfeeding confidence and lactation duration (Chezem, 2003).

- Maternal knowledge toward breastfeeding was inadequate, and there was a big gap between actual and desired practices (Chaudhary et al., 2011).

- Increasing mothers’ knowledge was the first step to increase breastfeeding rates and duration (O’Connor et al., 2011).
To create an instrument to guide the clinical assessment of maternal breastfeeding knowledge and skills;

To characterize mother’s knowledge during pregnancy and mothers’ skills during the first/second weeks and first month after childbirth;
Maternal-Child Health Promotion

**DESIGN**

**PHASE 1**
- Mothers interview
- Literature review
- NOC

Identification of **knowledge** and **skills** descriptors related to breastfeeding

- Maternal knowledge and skills assessment instrument
  - Experts analysis
  - Instrument validation

**PHASE 2**
- MBksA_I

Characterize maternal knowledge during pregnancy and skills during the 1\(^{st}/2^{nd}\) week after delivery.

Characterize profile of mothers better prepared to breastfeed.
METHOD

PHASE 1

Identification of knowledge and skills descriptors related to breastfeeding

40 mothers

[pregnant (n=21) or had a baby six months old or younger (n=19)]

• 30 years
• 12 education years
• 96% was living with the child’s father
• 63%, this pregnancy was their first child

Mothers interview

Literature review

NOC

Content analysis (NVivo7)
**METHOD**

**PHASE 1**

- Mothers interview
- Literature review
- NOC

Identification of **knowledge** and **skills** descriptors related to breastfeeding

**Maternal knowledge and skills assessment instrument**

- Experts analysis
- Instrument validation

42 descriptors about knowledge and skills:
- 21 to assess during pregnancy
- 17 during 1st/2nd week after childbirth
- 4 during 1st/2nd month after childbirth.

The Kuder Richardson Coefficient (K-R 20) = 0.9121.
Maternal Knowledge and Skills Assessment Instrument
(Content assessed during pregnancy)

<table>
<thead>
<tr>
<th>Knowledge of benefits of breastfeeding</th>
<th>Assessment*</th>
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<tbody>
<tr>
<td>Knowledge of characteristics of colostrum and milk</td>
<td></td>
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<tr>
<td>Knowledge of criteria to decide the timing and duration of breastfeeding</td>
<td></td>
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<tr>
<td>Knowledge of signs of adequate nutritional intake</td>
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<tr>
<td>Knowledge of criteria for deciding when to offer one or two breast milk</td>
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<tr>
<td>Knowledge of hunger signs</td>
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<tr>
<td>Knowledge of satiety signs</td>
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<tr>
<td>Knowledge of position of mother and child</td>
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<tr>
<td>Knowledge of proper latch signs</td>
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<tr>
<td>Knowledge of strategies to keep the baby awake during the feeding</td>
<td></td>
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<tr>
<td>Knowledge of milk production and release signs</td>
<td></td>
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<tr>
<td>Knowledge of measures that stimulate lactation</td>
<td></td>
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<tr>
<td>Knowledge of influence of mother’s nutrition upon milk supply (composition)</td>
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<tr>
<td>Knowledge of effects of caffeine intake in the child</td>
<td></td>
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<tr>
<td>Knowledge of effects of alcohol intake in the child</td>
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<tr>
<td>Knowledge of effects of smoking / tobacco smoke in the child</td>
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</tbody>
</table>

* Clinical judgment: Knowledge deficit / Adequate Knowledge
METHOD

Hospital and four Health Centres of North of Portugal

PHASE 2

Characterize maternal knowledge during pregnancy and skills during the 1st/2nd week after delivery.

Participants

Mothers’ characterization: mean age - 29.5 years; education level - 42% with higher education level and 33% with secondary education.
Maternal knowledge and skills on breastfeeding calculation

The maternal knowledge on breastfeeding score was calculated based on the equation, ranging between 0 and 1:

$$\sum ‘1’ \text{ (yes) in the descriptors of knowledge} - \text{number of descriptors “not applicable”}$$

$$\frac{\text{number of descriptors of knowledge} - \text{number of descriptors “not applicable”}}{\text{number of descriptors of knowledge} - \text{number of descriptors “not applicable”}}$$

The score of maternal skills on breastfeeding was calculated based on the equation, ranging between 0 and 1:

$$\sum ‘1’ \text{ (yes) in the descriptors of skills} - \text{number of descriptors “not applicable”}$$

$$\frac{\text{number of descriptors of skills} - \text{number of descriptors “not applicable”}}{\text{number of descriptors of skills} - \text{number of descriptors “not applicable”}}$$

Knowledge/skills on breastfeeding classification:
0 to 0.20, very poor; 0.21 to 0.40, poor; 0.41 to 0.60, reasonable; 0.61 to 0.80, good; 0.81-1.0, very good.
RESULTS

Characterization of maternal breastfeeding knowledge and skills

- during pregnancy
- 1st/2nd week after childbirth
- 1st/2nd month after childbirth
Mothers’ breastfeeding knowledge deficit, during pregnancy (n=562)

- Knowledge: Measures that stimulate lactation: 85%
- Knowledge: Milk production and release signs: 79%
- Knowledge: Signs of adequate nutritional intake: 76%
- Knowledge: Criteria for deciding when to offer one or two breast: 72%
- Knowledge: Proper latch signs: 71%
- Knowledge: Criteria for deciding the timing and duration of feeding: 66%
- Knowledge: Influence of mother's nutrition in milk supply: 64%
- Knowledge: Characteristics of colostrum and milk: 60%
- Knowledge: Strategies to keep the baby awake during the feeding: 59%
- Knowledge: Position of mother and child: 52%
- Knowledge: Hunger signs: 51%
- Knowledge: Satiety signs: 51%
- Knowledge: Benefits of breastfeeding: 21%
Mothers’ breastfeeding knowledge deficit, during pregnancy (n=562) … related to breastfeeding complications
Mothers’ breastfeeding knowledge and skills, after childbirth

- **at 1st/2nd week (n=211)**

  Knowledge: nutritional needs
  - Recognize the effect of food that the mother eats on the child: 62%
  - Identify signs of sufficient nutritional intake: 59%
  - Break suction before removing the child from the breast: 42%
  - Ensure proper latch: 38%
  - Encourage the child during breastfeeding, keeping him/her: 35%
  - Adopt adequate breasts care: 33%
  - Identify milk ejection signs: 32%
  - Meals frequency: 23%
  - Identify hunger signs: 23%
  - Adopt a comfortable position and place the child: 21%

Note: The percentages indicate the proportion of mothers who are knowledgeable or skilled in each area.
Mothers’ breastfeeding knowledge and skills, after childbirth

... related to breastfeeding complications

- **at 1st/2nd week** (n=211)

  - Skill: Implement measures to fissure treatment
  - Skill: Implement breast engorgement relief measures
  - Skill: Detect signs fissure healing
  - Skill: Extract manually / pump breast milk
  - Skill: Detect breast engorgement signs
  - Skill: Detect signs of fissure of the nipple
Mothers’ breastfeeding knowledge and skills, after childbirth

- **at 1st/2nd month** (n=159)

Knowledge: How to unfreeze breast milk
Knowledge: material and conditions for storing breast milk
Knowledge: Strategies to maintain lactation/breastfeeding
Knowledge: How to extract breast milk
CONCLUSIONS

- Maternal confidence is the key to breastfeeding success. This confidence may be encouraged by increasing breastfeeding knowledge and skills, beginning during pregnancy.

- The use of this instrument to assess the maternal learning needs is essential for the effectiveness of educational interventions. The first step to planning individual or group interventions is to assess each mother learning needs – nursing diagnosis - to offer significant care and result in effective outcomes.

- The focus of nursing/midwifery care should emphasize on the younger, the first-time mothers, the less well-educated women and those from a lower socio-economic status, as particular vulnerable and poorer prepared group to breastfeeding competencies.
Maternal-Child Health Promotion

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