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Nursing Best Practice Guideline

Shaping the future of Nursing

Breastfeeding Best Practice Guidelines for Nurses

Supplement

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Supplement Integration

This supplement to the nursing best practice guideline *Breastfeeding Best Practice Guidelines for Nurses* is the result of a three year scheduled revision of the guideline. Additional material has been provided in an attempt to provide the reader with current evidence to support practice. Similar to the original guideline publication, this document needs to be reviewed and applied, based on the specific needs of the organization or practice setting/environment, as well as the needs and wishes of the client.

Overall, breastfeeding initiation rates have increased from 75 to 82 percent in Canada during the past decade (Health Canada, 2003). Although this encouraging rise in rates is observed across all age groups, young women less than 24 years of age continue to have initiation rates less than 70 percent (Health Canada, 2003). However, less than 40 percent of mothers who initiate breastfeeding continue to do so beyond six months (Callen & Pinelli, 2004). As such, early cessation of breastfeeding prior to the Canadian Pediatric Society recommended six months remains a major concern for health professionals.

The recommendations in this supplement continue to address these concerns by focusing on nursing interventions that promote initiation, duration and exclusivity of breastfeeding in term infants (≥37 weeks). This supplement should be used in conjunction with the original guideline as a tool to assist in decision making for individualized client care and to ensure that appropriate structures and supports are in place to provide the best possible care.

Based on research evidence published since the initial guideline, more specific recommendations have been formulated for peer support interventions, the Baby Friendly Hospital Initiative, and skin-to-skin care. Although face-to-face peer support is known to be effective in women of low income, a recent Canadian-based randomized controlled trial demonstrated that telephone-based peer support can be effective in increasing duration and exclusivity of breastfeeding in women across socioeconomic groups (Dennis et al., 2002). Similarly, further evidence regarding the Baby Friendly Initiative suggests that this hospital-wide inter-

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vention may increase duration (Braun et al., 2003), initiation (Phillip et al., 2003), and exclusivity of breastfeeding when combined with follow-up home visits (Coutinho et al., 2005). Although much research on skin-to-skin care has focused on the physiological benefits in transition to extrauterine life for the infant, a recent study found that skin-to-skin care can also improve duration and exclusivity of breastfeeding (Mikil-Kostyra et al., 2002).

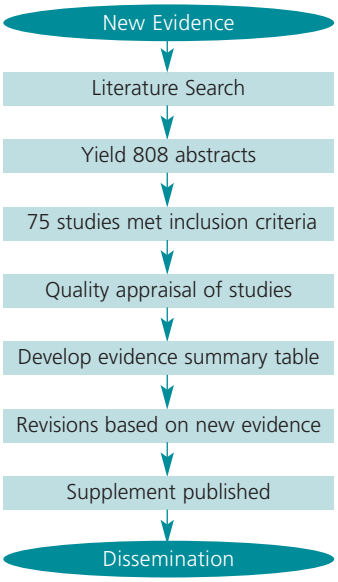
Revision Process

The Registered Nurses' Association of Ontario (RNAO) has made a commitment to ensure that this best practice guideline is based on the best available evidence. In order to meet this commitment, a monitoring and revision process has been established for each guideline every three years. The revision panel members (experts from a variety of practice settings) are given a mandate to review the guideline focusing on the recommendations and the original scope of the guideline.

Members of the panel critically appraised five guidelines on the topic of breasfeeding support using the Appraisal of Guidelines for Research and Evaluation (AGREE Collaboration, 2001). From this review, one guideline was identified to inform the revision process:

Canadian Pediatric Society. (2005). Revised Recommendations for Breastfed Infants. Ottawa, Ontario: Health Canada and Canadian Pediatric Society.

Review/Revision Process Flow Chart



RNAO has developed resources specifically designed to support implementation of this guideline. Visit our website at www.rnao.org/bestpractices to view and download the *Breastfeeding: Fundamental Concepts* self-learning package and the *Breastfeeding Educational Resources: Mother/Infant Self Reflection Guide for Nurses.*

Summary of Evidence

The following content reflects the changes made to the original publication (2003) based on the consensus of the review panel. Many of the recommendations have been renumbered as a result of revisions to sequence and content of the recommendations, as well as the addition of new recommendations.

✓ unchanged
✎ changed
\+ additional information
NEW new recommendation

Practice Recommendations

Recommendation 1

Nurses in all practice settings, endorse the Baby-Friendly Hospital Initiative (BFHI) which was jointly launched in 1992 by the World Health Organization (WHO) and the United Nations Children's Fund (UNICEF), and the Baby-Friendly Initiative in Community Health Services (Breastfeeding Committee for Canada). The BFHI directs health care facilities to meet the "Ten Steps to Successful Breastfeeding".

(Level of Evidence II-3)

✎

The following has been added to the discussion of evidence.

There is some evidence to suggest that the Baby Friendly Initiative can lead to increased initiation, duration and exclusivity of breastfeeding.

Additional Literature Supports

Braun et al., 2003 (Level II-3); Kramer, Chalmers, & Hodnett, 2001 (Level I); Philipp et al., 2003 (Level II-3).

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Recommendation 1.1

Nurses have a role in advocating for "breastfeeding friendly" environments by:

- Advocating for supportive facilities and systems such as day-care facilities, "mother and baby" areas for breastfeeding, public breastfeeding areas, 24-hour help for families having difficulties in breastfeeding; and
- Promoting community action in breastfeeding.

(Level of Evidence III)

✓

Information formerly listed as the final bullet point on page 32 has been re-arranged and should be considered to be item 1, to emphasize the importance of this point.

Discussion of Evidence

1) Ensuring nursing mothers are aware of their rights. Breastfeeding women "have the right to breastfeed a child in a public area. No one should prevent you from nursing your child in a public area or to ask you to move to another area that is more 'discreet'" (Ontario Human Rights Commission, 1999).

\+

Recommendation 2

Nurses and healthcare practice settings endorse the WHO recommendation for exclusive breastfeeding for the first six months, with introduction of complementary foods and continued breastfeeding up to two years and beyond thereafter.

(Level of Evidence I)

✓

The following paragraph has been added to the discussion of evidence:

Discussion of Evidence

Until recently, many health professionals have promoted breastfeeding of healthy, full-term infants for a period of four to six months. The Canadian Pediatric Society has reviewed and decided to align with the recommendations resulting from the World Health Organization's systematic review, as discussed on page 32 of the guideline (CPS, 2005). Endorsing exclusive breastfeeding for the first six months is considered to be ideal policy, with the proviso that all infants should be managed individually.

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Recommendation 3

Nurses should perform a comprehensive breastfeeding assessment of mother/baby/family, both prenatally and postnatally, to facilitate intervention and the development of a breastfeeding plan.

(Level of Evidence II-3)

The wording of this recommendation has been changed, as well as the Level of Evidence, as there is new research evidence to support the recommendation.

The following has been added to the discussion of evidence:

Discussion of Evidence

Breastfeeding assessment in the early postpartum period can alert health professionals to risk factors that may lead to early breastfeeding attrition in the absence of targeted intervention.

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Literature Supports

Dennis, 2002; Kumar, Mooney, Wieser, & Havstad, 2006.

Recommendation 3.1

Key components of the prenatal assessment should include:

- Personal and demographic variables that may influence breastfeeding rates;
- Intent to breastfeed;
- Access to support for breastfeeding, including significant others and peers;
- Attitude about breastfeeding among health care providers, significant others and peers; and
- Physical factors, including breasts and nipples, that may affect a woman's ability to breastfeed.

(Level of Evidence III)

✓

Recommendation 3.2

Key components of the postnatal assessment should include:

- Interpartum practices and interventions including medications;
- Level of maternal physical discomfort;
- Observation of positioning, latching and sucking;
- Signs of milk transfer;
- Parental ability to identify infant feeding cues;
- Mother-infant interaction and maternal response to feeding cues;
- Maternal perception of infant satisfaction/satiety cues;
- Woman's ability to identify significant others who are available and supportive of her decision to breastfeed;
- Delivery experience;
- Infant physical assessment; and
- Maternal breastfeeding self-efficacy (Level I).

(Level of Evidence III except where noted)

The wording of this recommendation has been changed. As well, the following content has been added to the discussion of evidence, addressing the validity of assessment tools, and the inclusion of self-efficacy as a component of postnatal assessment:

Discussion of Evidence

Low breastfeeding self-efficacy is a significant predictor of early attrition (Dennis & Faux, 1999; Dennis, 2002). The Breastfeeding Self-Efficacy Scale (BSES-SF) is a short, 14-item scale used to assess maternal breastfeeding self-efficacy. The total score can be used to quantify the level of a mother's breastfeeding self-efficacy and the scores of individual items can be used to diagnose specific areas where a mother lacks self-efficacy and requires targeted intervention (Dennis, 2002). This tool has been psychometrically tested in a number of studies involving Canadian, Australian, Chinese, and Spanish women and demonstrates good reliability and validity. The BSES-SF has also been translated into Chinese and Spanish.

Several assessment tools addressing various aspects of support and care of the breastfeeding mother and infant have been developed (Bar-Yam, 1998; Dennis & Faux, 1999; Hill & Humenick, 1996; Johnson et al., 1999; Matthews et al., 1998; Nyquist, et al., 1996; Riordan, 1998; Riordan & Koehn, 1997; Schlomer et al., 1999). Very little research has been conducted to compare various assessment

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tools in the area of breastfeeding. Riordan and Koehn (1997) initially compared three tools to measure breastfeeding effectiveness (Infant Breastfeeding Assessment Tool – IBFAT; Mother Baby Assessment Tool – MBA and the LATCH assessment tool) and found that further development/revisions and retesting were needed before recommendations for clinical practice could be made. Subsequently, Riordan, Bibb, Miller and Rawlins (2001) examined the validity of the LATCH tool by comparing it with other measures of effective breastfeeding and by determining its effectiveness in predicting breastfeeding duration to eight weeks postpartum. The results indicate support for the validity of the LATCH, however further testing of construct validity is warranted. For a comparison of breastfeeding assessment tools, please see Appendix Q, (pg 13 of this supplement).

Assessment tools also vary from setting to setting based on the time in the preconception to postpartum period in which the nurse is in contact with the mother and/or infant. This points to a need for assessment tools that are either comprehensive to meet the practice requirements at various times or the requirement for unique comprehensive tools for specific stages in the continuum. Additionally, there is a need for user-friendly and short assessment tools in order to facilitate use by practicing nurses.

Recommendation 4

Nurses should provide informational support to couples during the childbearing age, as well as to expectant mothers/couples/families and assist them in making informed decisions regarding breastfeeding. Education should include, as a minimum, the following:

- Benefits of breastfeeding (Level I);
- Lifestyle issues (Level III);
- Milk production (Level I);
- Breastfeeding positions (Level I);
- Latching/milk transfer (Level I);
- Prevention and management of problems (Level III);
- Medical interventions (Level III);
- When to seek help (Level III);
- Where to get additional information and resources (Level III);
- Benefits of skin to skin contact (Level III); and
- Recognizing feeding cues (Level III).

This recommendation now combines content from the original guideline's Recommendation 5, which has been deleted. The wording of this recommendation has been changed, and additions to the concepts to be included in education have been made.

The following has been added to the discussion of evidence:

Discussion of Evidence

Antenatal education is effective in increasing breastfeeding initiation rates in low-income women (Dyson et al., 2005; Fairbank et al., 2002; Haque et al., 2002). Antenatal education in combination with early postpartum lactation support has a greater impact on breastfeeding initiation and duration up to 3 months, particularly in groups where initiation rates are low (Dyson et al., 2005; Guise et al., 2003). There appears to be little difference in effectiveness between individual or group-based educational sessions or the length of the session (Guise et al., 2003).

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Educational programs that are effective in increasing breastfeeding initiation/duration are:

- Conducted by lactation consultants or nurses in the antenatal period (Guise et al., 2003). (Level I)
- Programs based on structured content that is consistently delivered, and includes (i) breastmilk as the ideal nutrition for infants, (ii) benefits of breastfeeding, (iii) anatomy and physiology of breastfeeding (Guise et al., 2003). (Level I)
- Inclusive of skill training such as latch and positioning techniques (Forster et al., 2004; Guise et al., 2003). (Level I)
- Inclusive of discussion of pumping, breastmilk storage (Guise et al., 2003). (Level I)
- Inclusive of discussion of common myths, attitudes, fears, and concerns (Forster et al., 2004; Guise et al., 2003). (Level I)

Educational approaches that have NOT been shown to be effective are:

- Written materials alone (Guise et al., 2003, Fairbank et al., 2002). (Level I)
- Single, structured, one-to-one educational sessions on positioning and attachment in the early postpartum period (Henderson et al., 2001; Labarere et al., 2003). (Level I)
- Single group educational sessions during the early post-partum period, even after antenatal education (Lavender et al., 2005). (Level I)

Additional Literature Supports

Graffy, 2005.

Recommendation 4.1

NEW

Women's partners should be encouraged to attend breastfeeding education classes.

(Level of Evidence I)

Discussion of Evidence

Educational classes that include instruction for fathers on the benefits of breastfeeding and methods of assisting their breastfeeding partner can increase the odds of their partner initiating breastfeeding (Wolfberg et al., 2004).

Recommendation 5

Nurses should perform a comprehensive breastfeeding assessment of mother/baby prior to hospital discharge.

(Level of Evidence III)

This recommendation has been rephrased for clarity.

Recommendation 5.1

If mother and baby are discharged within 48 hours of birth, there must be a face-to-face follow up assessment conducted within 48 hours of discharge by a qualified health care professional, such as a Public Health Nurse or Community Nurse specializing in maternal/newborn care.

(Level of Evidence III)

Recommendation 5.2

Discharge of low-risk mothers and infants after 48 hours may be followed by a telephone call within 48 hours of discharge, rather than a home visit.

(Level of Evidence I)

This recommendation has been rephrased to indicate its application to low-risk mothers and infants.

The following has been added to the discussion of evidence:

Discussion of Evidence

For low risk women and infants, duration of breastfeeding at 6 months does not appear to be influenced by method of post-partum follow-up e.g., home visit versus telephone follow-up (O'Connor et al., 2003).

Recommendation 6

Nurses should provide information, emotional and physical support to breastfeeding mothers with an attitude that conveys support for breastfeeding.

(Level of Evidence II-3)

This recommendation has been changed to emphasize the importance of nurses' attitudes with regard to breastfeeding.

Literature supports

DiGirolamo, Grummer-Strawn, & Fein, 2003.

Recommendation 7

Nurses should support local peer support breastfeeding programs, ensuring that women are provided with peer support resources.

(Level of Evidence I)

Discussion of Evidence

Intensive pre- and post-natal peer support has been effective in increasing initiation and exclusivity of breastfeeding among low-income women (Bonuck et al., 2005; Chapman et al., 2004). Face-to-face peer support during the post-natal period in combination with pre- or post-natal community support has been found to be effective at increasing initiation, duration, and exclusivity of breastfeeding in low-income women (Pugh et al., 2001; Pugh et al., 2002; Fairbank et al., 2000) and lengthening duration of breastfeeding in aboriginal mothers (Martens et al., 2002). Telephone-based peer support has also been proven effective at increasing duration and exclusivity of breastfeeding in a community sample of Canadian mothers (Dennis et al., 2002).

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Recommendation 8

Nurses should initiate skin to skin contact between mother and infant immediately after birth as part of on-going, routine care.

(Level of Evidence II-2)

NEW

Discussion of Evidence

Skin-to-skin contact within 10 minutes after delivery and for a period of at least 20 minutes may increase duration and exclusivity of breastfeeding, particularly when followed by rooming in practices (Mikiel-Kostyra et al., 2002).

For information on resources related to skin-to-skin contact (or "kangaroo care"), see Appendix I, (pg 11 of the supplement).

Education Recommendations

Recommendation 9

Organizations must ensure that nurses providing breastfeeding support receive education appropriate to their role in breastfeeding in order to develop the knowledge, skill and attitudes to implement breastfeeding policy and to support breastfeeding mothers.

(Level of Evidence III)

This recommendation has been changed to emphasize organizational responsibility for ensuring that nurses receive appropriate breastfeeding education.

Organization and Policy Recommendations

Recommendation 10

Practice settings/organizations should work towards Baby Friendly Initiative designation as part of a comprehensive plan towards improving breastfeeding outcomes.

(Level of Evidence I)

This recommendation has been rephrased to indicate that the Baby Friendly Initiative is a designation, rather than an accreditation.

Literature Supports

Kramer, Chalmers & Hodnett, 2001.

Recommendation 11

Practice settings should evaluate the effectiveness of their breastfeeding support on rates of initiation, duration and exclusivity of breastfeeding.

(Level of Evidence III)

This recommendation reflects the content of the original publication's Recommendation 5.1. This recommendation has been changed to emphasize the components of breastfeeding support which are to be evaluated.

Recommendation 12

Organizations should establish and support peer support programs.

(Level of Evidence I)

This recommendation has been moved from its previous position as Recommendation 7.1, to reflect the intent of the recommendation to pertain to organization and policy change. The recommendation has been rephrased to focus on peer support programs alone.

Literature Supports

Anderson, Damio, Young, Chapman & Perez-Escamilla, 2005; Pugh, Milligan, Frick, Spatz & Bronner, 2002; Pugh, Milligan & Brown, 2001.

Recommendation 13

Nursing best practice guidelines can be successfully implemented only when there are adequate planning, resources, organizational and administrative support, and appropriate facilitation. Organizations may develop a plan for implementation that includes:

- An assessment of organizational readiness and barriers to education.
- Involvement of all members (whether in a direct or indirect supportive function) who will contribute to the implementation process.
- Dedication of a qualified individual to provide the support needed for the education and implementation process.
- Ongoing opportunities for discussion and education to reinforce the importance of best practices.
- Opportunities for reflection on personal and organizational experience in implementing guidelines.

In this regard, RNAO (through a panel of nurses, researchers and administrators) has developed the *Toolkit: Implementation of clinical practice guidelines* based on available evidence, theoretical perspectives and consensus. The Toolkit is recommended for guiding the implementation of *Breastfeeding Best Practice Guideline for Nurses.*

(Level III)

Implementation Strategies

The Registered Nurses' Association of Ontario and the guideline panel have compiled a list of implementation strategies to assist health care organizations or health care professionals who are interested in implementing this guideline. A summary of these strategies follows. Organization should:

- Have at least one dedicated person such as an advanced practice nurse or a clinical resource nurse who will provide support, clinical expertise and leadership. The individual should have good interpersonal, facilitation and project management skills.
- Conduct an organizational needs assessment related to breastfeeding support to identify current knowledge and further educational requirements.
- Create a vision to help direct the change effort and develop strategies for achieving and sustaining the vision.
- Establish a steering committee comprised of key stakeholders and interdisciplinary members committed to leading the change initiative. Identify short-term and long-term goals.
- Identify and support designated best practice champions on each unit to promote and support implementation. Celebrate milestones and achievements, acknowledging work well done (Davies & Edwards, 2004).
- Provide organizational support such as having the structures in place to facilitate best practices in breastfeeding. For example, having an organizational philosophy that reflects the value of best practices through policies and procedures.
- Develop new documentation tools (Davies & Edwards, 2004).

Research Gaps and Implications

Some research gaps that are evident from the literature review are:

(i) No new systematic reviews have been published since the original guideline was published. There is a need for updated reviews of existing evidence on topics such as interventions to promote initiation, duration and exclusivity of breastfeeding, predictors of breastfeeding by age and socioeconomic position, as well as interventions delivered by specific health care personnel.

(ii) Although a few breastfeeding assessment tools have been developed (LATCH, IBFAT, MBAS), little validation work has been done. There is a need for rigorously tested breastfeeding assessment tools.

(iii) Continued evaluation of the Baby Friendly Initiative on outcomes of initiation, duration and exclusivity of breastfeeding is needed.

(iv) Maternal confidence/self-efficacy is emerging as a key factor in breastfeeding outcomes. Future research should focus on evaluating the effectiveness of interventions designed to enhance maternal confidence/self-efficacy and breastfeeding outcomes.

(v) Little research in Canada has addressed factors that influence breastfeeding, or the effectiveness of breastfeeding interventions specifically in younger women or women of low income. Given that women belonging to these sub-groups have the lowest initiation and duration rates, research addressing these issues would assist health professionals in planning targeted intervention strategies.

(vi) Much breastfeeding research is, of necessity, based on cohort or before-after studies. Where possible, randomized-controlled trials should be used to evaluate the effectiveness of interventions on breastfeeding initiation, duration, and exclusivity.

Appendices

The review process identified a need for two additional appendices, added below as Appendix P: Ontario Human Rights Commission and Appendix Q: Breastfeeding Assessment Tools Comparison. Additionally, updates to the following appendices are noted below.

Appendix B: Baby Friendly Initiative (BFI)

The website given for "the Breastfeeding Committee for Canada Welcomes you to the Baby-Friendly Initiative (included in its entirety)", is no longer active. Please visit www.breastfeedingcanada.ca for information about the Baby-Friendly Initiative.

Please note that the Baby-Friendly Initiative is a designation, not an accreditation as originally published.

Appendix C: Promoting Community Action

Website update:
Heifti, R. (2001). Breastfeeding: A community responsibility. World Alliance for Breastfeeding Action [On-line]: No longer available.

Appendix D: Prenatal Assessment Tool
Appendix E: Post Partum Assessment Tools

To date, most breastfeeding assessment tools have not demonstrated adequate reliability (Riordan et al., 2005). In order for nurses to use breastfeeding tools accurately, education regarding the use of the tool is imperative. The implementation of tools for general use that is not accompanied by education may result in a wide variation of assessment findings that cannot inform intervention efforts. Education related to the use of assessment tools should minimally provide an understanding of the criteria in the tool and the scoring system.

Assessment tools provided in this guideline may be useful in practical application, or simply as examples, depending on the user. Please see Appendix Q for a comparison of breastfeeding assessment tools listed in the original guideline.

Appendix F: Breastfeeding Positions

The following statements should be added to the beginning of this appendix.

Good positioning facilitates a good latch. The following are to be considered examples of positions that may help to ensure a good latch. It is important to note that in whichever position the mother chooses, a successful outcome is a mother and baby who are calm, comfortable and alert.

Baby-led Latch

Baby-led latching recognizes that the infant is born with reflexes that help facilitate breastfeeding. The technique for this approach can be found on the following website: www.breastfeeding.asn.au/bfinfo/bla.html

Appendix G: Latch, Milk Transfer and Effective Breastfeeding

To date, most breastfeeding assessment tools have not demonstrated adequate reliability (Riordan et al., 2005). In order for nurses to use breastfeeding tools accurately, education regarding the use of the tool is imperative. The implementation of tools for general use that is not accompanied by education may result in a wide variation of assessment findings that cannot inform intervention efforts. Education related to the use of assessment tools should minimally provide an understanding of the criteria in the tool and the scoring system.

Appendix I: Breastfeeding Educational Resources

Updated web addresses:

- Archives of LACTNET@PEACH.EASE.LSOFT.COM – *Lactation Information and Discussion*
  http://peach.ease.lsoft.com/scripts/wa.exe?A0=lactnet
- The Association of Women's Health, Obstetric and Neonatal Nurses (AWHONN) www.awhonn.org
- Ontario Breastfeeding Committee www.breastfeedingontario.org
- World Alliance for Breastfeeding Action www.waba.org.my
- Kangaroo Mother Care Promotions www.kangaroomothercare.com

Breastfeeding Videos

"Breastfeeding" Interactive CD ROM
Susan Moxley, RN, Med, IBCLC
No longer available

Dr Jack Newman's Visual Guide to Breastfeeding
Newman Breastfeeding Clinic and Institute
1255 Sheppard Ave East
Toronto, ON Canada
M2K 1E2

fax: 416-498-0012
email: dvd@drjacknewman.com
wesite: www.drjacknewman.com

Kangaroo Mother Care
Geddes Productions
PO BOX 41761
Los Angeles CA 90041-0761
USA

voice: (323) 344-8045
fax: (323) 257-7209
email: orders@geddesproduction.com

Suggested Reading – Breastfeeding References

International Lactation Consultant Association. (2005). Clinical guidelines for the establishment of exclusive breastfeeding. Raleigh, NC: International Lactation Consultant Association [Online] Available: http://www.ilca.org/education/2005clinicalguidelines.php

Appendix K: Discharge Assessment Tools

The discharge tools in this appendix are only provided as examples. It should be noted that these assessment tools are intended to be comprehensive discharge assessments of mother and infant; as such, the breastfeeding assessment forms a small part of these discharge assessments.

Appendix N: Internet Breastfeeding Courses

Dr. Janice Riordan
http://members.cox.net/jriordan/brestfeedingcourse.html
No longer available

Appendix O: Baby Friendly Hospital Initiative – Accreditation

Please note that the Baby Friendly Initiative is a designation, not an accreditation as original published.

Appendix P: Ontario Human Rights Commission Policy on Discrimination Because of Pregnancy and Breastfeeding.

The Ontario Human Rights Commission has drafted a policy addressing the rights of pregnant and breastfeeding women. View this policy at: http://www.ohrc.on.ca/en/resources/Policies/PolicyPregBreastfeedEN/view

Appendix Q: Breastfeeding Assessment Tools Comparison

Title	Description	Reliability	Validity	Strengths	Limitations
LATCH (Jensen et al, 1994)	Five indicators of breastfeeding. "L" latches to breast; "A" audible swallowing; "T" nipple type; "C" mother's breast/ nipple comfort; "H" amount of help mother needs. Score range 0 to 10.	Interrater agreement 85 to 90 percent among mothers, LCs, and researchers scores; LC and mother agreement: r =.53 to.67 (Adams & Hewell, 1997) and r=.26 (Riordan, 2001). Pairwise correlations among LC raters: .11, .46, .48 (Riordan, 1997).	Total score predicted 7.3 percent of duration variance, primarily due to sore nipple indicator. (Riordan et al., 2001). Moderately correlated with duration r=.26 (Riordan, 1997). Audible swallowing alone predicted milk intake R2 =29 percent, p<.001). Kumar et al. (2006) found that women who had a score of >9 at 16-24 hours were 1.7 times more likely to breastfeed at 6 weeks than women with lower scores.	• Of all the tools available, this tool has been most extensively tested for reliability and validity. • Short and easy to administer. • Only tool to date to have "cut-off" scores defined e.g., women who score <9 at 16-24 hours more likely to stop breastfeeding by 6 weeks (Kumar et al., 2006).	• Has limited utility because it predicts breastfeeding cessation that is solely related to sore nipples (Riordan et al., 2001). • Inter-rater reliability much lower when raters independently assess infant feeding (as in clinical practice) versus together (Topf, 1988). • Tool has not been compared with milk intake.
Infant Breastfeeding Assessment Tool (IBFAT). (Matthews, 1988, 1998).	To assess and measure infant breastfeeding competence. Four indicators: readiness to feed, rooting, fixing and sucking. Score range 0 to 12.	91 percent agreement in co-assessed feeds (Matthews, 1988). Pairwise correlations of raters' scores .58 (Riordan & Keohn, 1995). Pairwise correlations among LC raters: .27, .57, .69. (Riordan, 1997).	Observation in clinical practice (Matthews, 1988). Lower scores in Infants whose mothers had labor analgesia (p = .019) (Crowell, Hill & Humenick, 1994).	• Short and easy to use.	• Agreement between raters low to moderate e.g., different raters score the same infants differently. • Limited evaluation of reliability and validity. • Tool has not been compared with milk intake.
Mother/Baby Assessment Score (MBA) (Mulford, 1992). N=71; 348 observations.	To assess maternal and infant breastfeeding behaviors. For both, breastfeeding is rated using five steps: signaling, positioning, fixing, milk transfer, and ending. Score 0 to 10.	Pairwise correlations among LC raters: .33, .64, .66. (Riordan, 1997).	Observations in clinical practice (Mulford, 1992).		• Agreement of raters on criteria ranges low to high. Low agreement on items related to milk transfer, high on those related to readiness of baby and mother to feed. • Tool has not been compared with milk intake.

LC = Lactation Consultant

References

Adams, D., and Hewell, S.D. (1997). Maternal and professional assessment of breastfeeding. *Journal of Human Lactation, 113*, 279-83.

Anderson, A. K., Damio, G., Young, S., Chapman, D. J., & Perez-Escamilla, R. (2005). A randomized trial assessing the efficacy of peer counseling on exclusive breastfeeding in a predominantly Latina low-income community. *Archives of Pediatrics & Adolescent Medicine, 159,* 836-841.

Bar-Yam, N. B. (1998). Workplace lactation support, Part II: Working with the workplace. *Journal of Human Lactation, 14,* 321-325.

Bonuck, K. A., Trombley, M., Freeman, K., & McKee, D. (2005). Randomized, controlled trial of a prenatal and postnatal lactation consultant intervention on duration and intensity of breastfeeding up to 12 months. *Pediatrics, 116,* 1413-1426.

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